The integrated event for unconventional resource teams



20-22 June 2022 • George R. Brown Convention Center • Houston, Texas



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PROGRAM BOOK

URTeC.org

## **WELCOME TO URTeC 2022 - LETTER FROM THE CHAIRS**



**Johannes Alvarez** SPE Program Chair Chevron



Stephanie Perry

AAPG Program Chair
Intertek (Westport Laboratories)



Scott W. Singleton SEG Program Chair Independence Resources Management



Katerina Yared

AAPG Program Chair Elect

SM Energy

Dear Friends,

It is our distinct pleasure to welcome you to URTeC 2022.

Even amid ongoing global uncertainties, we're happy to see our industry is now back on its feet after a very difficult two years. With businesses ramping up and people starting to travel again, the world is looking to us to provide clean, affordable energy. The purpose of URTeC is to bring together all of the disciplines to figure out how we can do that more effectively, efficiently, and thus for less cost.

The program is as diverse and strong as ever. This means you'll experience 190 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. In addition, you can choose from 6 panel sessions, 3 special sessions, and 8 topical breakfast and lunch presentations.

The exhibition hall features 138 companies, organizations, and educational institutions with the latest research and technology to help you safely produce more for less while always keeping in mind stewardship of the environment and our relationship with those who live in the areas where we operate. In addition, the exhibition hall includes four technical presentation stations, a core exhibit, and the U-Pitch forum to connect technology entrepreneurs with potential partners and investors.

URTeC is a forum where professionals 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.

We wish you an interesting and productive URTeC experience. Enjoy the conference.

Sincerely,

**Technical Program Co-Chairs** 

### **TECHNICAL PROGRAM COMMITTEE**

#### **Robert Hull**

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#### **Craig Cipolla**

Theme 1 Chair **Hess Corporation** 

#### Alejandro Lerza

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Theme 3 Chair Occidental Petroleum

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#### **Andrew Lewis**

Theme 4 Chair Panels and Invited Sessions Co-Chair Fairfield Geotechnologies

#### **Marianne Rauch**

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TGS

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The University of Oklahoma

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Theme 9 Chair Marathon Oil

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#### Rosa Aquilar

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#### **Isaac Aviles**

Panels and Invited Sessions Co-Chair Schlumberger

#### **Denise Benoit**

Topicals Co-Chair Halliburton

#### Liang Xu

Topicals Co-Chair Evonik

#### Susan Nash

Topicals Co-Chair AAPG

#### Hosein Kalaei

Topicals Co-Chair ConocoPhillips

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### **GENERAL INFORMATION**

### **On-site Registration**

Location: Exhibit Hall A/B		
Saturday	12:00	0 pm-5:00 pn
Sunday	9:00	am-5:00 pm
Monday	6:30	am-5:30 pm
Tuesday	6:30	am-5:30 pm
Wednesday		

#### **Exhibition Hall Hours**

Location: Exhibit Hall A/B	
Monday	11:00 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	1:00 pm-4:00 pm
Monday	
Tuesday	
Wednesday	

#### First Aid

L	ocation: Hall A Lobby		
9	Saturday	9:00	am-5:00 pm
9	Sunday	9:00	am-6:00 pm
N	Monday	7:00	am-7:00 pm
1	uesday	7:00	am-7:00 pm
١	Vednesday	7:00	am-1:00 pm

#### **Luggage Check**

Luggage Check	
Location: Near Registration in Exhibit Hall B	
Wednesday	. 7:00 am-4:00 pm
Items checked will be at \$5.00 per item.	

#### **FedEx Office**

**Location:** Hilton Americas-Houston, third floor

Days: Monday-Friday

Hours: Subject to change due to event scheduling

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, call 1-713-651-3013 or local.fedex.com/en-us/tx/houston/office-5721.

#### **COVID Testing**

For attendees requiring COVID testing for travel or health and safety, there are two testing sites near the George R. Brown Convention Center. URTeC will not be providing any COVID testing.

#### **CVS Pharmacy**

(Downtown - closes at 7:00 pm) 300 Milam Street Houston, TX 77002 713-223-0371

#### **CVS Pharmacy**

(EaDo - closes at 9:00 pm) 2410 Polk St Houston, TX 77003 832-973-4879

#### **Lost and Found**

**Location:** Registration, Exhibit Hall A/B 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 #URTeC2022 to join the discussion online.

#### **Download the URTeC 2022 App**

Available for both iOS and Android devices, the URTeC 2022 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 conference with no refund. URTeC's complete anti-harassment policy can be found at URTeC.org/2022/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 <a href="https://www.urtec.org/carereport">www.urtec.org/carereport</a>

#### **LiveVoice Sound in Select Technical Sessions**

Be sure to bring your smartphone, tablet or computer and your favorite personal listening device (earbuds/headphones) to enjoy LiveVoice sound in all URTeC Exhibit Hall Sessions, including U-Pitch. LiveVoice eliminates the need for loud speakers and helps cut-out unwanted distractions using online voice streaming. Want to hear a friend or colleague but can't get to the session? You'll love remote audio access anywhere you have a Wi-Fi or mobile data signal. Bar codes for downloading the free app and instructions for easy switching between sessions will be posted at each location. If you have any issues or questions please contact URTeC Customer Support at support@urtec.org.



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Registration



Attendee Bags, Digital Conference Proceedings, Directional Signage, Exhibit Hall Tech Sessions

Conference Program, Exhibit Hall Technical Sessions

### **Ruby**





Mobile App



Core Exhibits, Digital Conference Proceedings



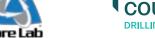
Meeting Wifi



Lanyards

## **Sapphire**





Core Exhibits



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Attendee Bags

## **Opa**



Refreshment Break, General Fund



Refreshment Break, General Fund



General Fund. Digital Conference Proceedings

### Topaz



General Fund



Networking Reception (2nd Night)



Opening Bar Reception



(2nd Night)



General Fund







General Fund



General Fund



Networking Reception Bar/General Fund





General Fund







Opening Reception Bar









## **Media/Supporting**

















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## **CONFERENCE AT A GLANCE**

8:00 am-5:00 pm SC02 (Day 1): Production Forecasts and Reserves

Estimates in Unconventional Resources (SPE) ONLINE

12:00 pm-5:00 pm Registration

**Sunday** 

8:00 am-5:00 pm SC02 (Day 2): Production Forecasts and Reserves

Estimates in Unconventional Resources (SPE) ONLINE

8:00 am-5:00 pm SC04: Reservoir Engineerig Applications of Advanced Data Analytics and Machine Learning Algorithms (SPE)

ONLINE

SC07: Gas EOR in Tight Unconventionals (SPE) 8:00 am-5:00 pm

9:00 am-5:00 pm Registration

SC08: Moneymakers Conference - Building a Business, 1:00 pm-5:00 pm

Raising the Capital: Petroleum Geologists Who Have

Done It All Will Tell You How (AAPG/DPA)

**Monday** 

6:30 am-5:30 pm Registration

8:15 am-9:45 am Plenary Session: Unconventionals - A Bridge to the Future

9:45 am-10:00 am Refreshment Break

10:00 am-11:30 am Plenary Session: Executive Perspectives

11:00 am-5:15 pm U-Pitch New Technology Showcase

11:00 am-6:00 pm Exhibition Open

11:00 am-6:00 pm Core Exhibits

12:15 pm-1:30 pm Topical Luncheon: Holistic Look at the Opportunities and

Challenges Faced by Unconventionals - A Fireside Chat

12:15 pm-1:30 pm Topical Luncheon: Workforce Directions:

Unconventionals Take Unconventional Skills

Topical Luncheon: Future of Unconventional Gas Production 12:15 pm-1:30 pm

in North America

Special Session: Geomodelling Unconventionals: 1:45 pm-3:05 pm

Bringing Geomodeling Into 2022 Using Data Analytics

Technical Sessions - Exhibit Hall 1:45 pm-5:25 pm

1:45 pm-5:25 pm Technical Sessions - Session Rooms

3:00 pm-4:00 pm Refreshment Break

3:40 pm-5:25 pm Panel Session: Data Science in Oil and Gas: How Far

Have We Come and Where are We Headed?

5:00 pm-6:00 pm **Opening Reception** 

**Tuesday** 

6:30 am-5:30 pm Registration

7:00 am-8:15 am Topical Breakfast: Local to Global Impact of Supply Chain in

the Industry and New Opportunities Created

7:00 am-8:15 am Topical Breakfast: Earth Imaging for Methane Leak

Detection

8:25 am-12:05 pm Technical Sessions - Session Rooms

8:25 am-10:10 am Special Session: Refracs, Worth It or Not? Devon and the

**DOE** Demonstrate

9:00 am-6:00 pm **Exhibition Open** 9:00 am-6:00 pm

Core Exhibits

10:00 am-11:00 am Refreshment Break 10:45 am-12:05 pm Panel Session: Cracking the Code of Fracture Driven

Interaction

10:45 am-12:05 pm Technical Sessions - Exhibit Hall

11:00 am-5:15 pm U-Pitch New Technology Showcase 12:15 pm-1:30 pm

Topical Luncheon: The Economic Outlook for Energy 1:45 pm-3:05 pm Panel Session: Carbon Capture and Energy Storage Today:

A Burgeoning Industry or Still a Future Promise?

1:45 pm-5:25 pm Technical Sessions - Session Rooms 1:45 pm-5:25 pm Technical Sessions - Exhibit Hall

3:00 pm-4:00 pm Refreshment Break

Panel Session: The Inevitable Intersection of the O&G

Industry and Bitcoin Mining

5:00 pm-6:00 pm **Networking Reception** 

Wednesday

3:40 pm-5:25 pm

6:30 am-1:00 pm Registration

7:00 am-8:15 am Topical Breakfast: The Future of Unconventionals from a

Regulatory Perspective

7:00 am-8:15 am Topical Breakfast: State of the Union for Unconventionals:

Impact to Global Energy Markets

8:25 am-10:10 am Panel Session: Risk and Mitigation of Induced Seismicity

8:25 am-12:05 pm Technical Sessions - Session Rooms

9:00 am-1:00 pm **Exhibition Open** 9:00 am-1:00 pm Core Exhibits

10:00 am-11:00 am Refreshment Break

10:45 am-12:05 pm Panel Session: Leveraging Technology to Maximize

Reservoir Recovery in Maturing Unconventional Plays

1:45 pm-3:30 pm Special Session: Best of ARMA

1:45 pm-3:30 pm Technical Sessions - Session Rooms

**Thursday** 

SC09 (Day 1): Unconventional Reservoir Production 8:00 am-5:00 pm

(Rate-Transient) Analysis (SPE)

8:00 am-5:00 pm SC10 (Day 1): Microseismic Monitoring in Oil or Gas

Reservoirs (SEG) ONLINE

4:00 pm-6:00 pm SC11 (Day 1): Seismic Anisotropy: Basic Theory

and Applications in Exploration and Reservoir

Characterization (SEG) ONLINE

Friday

8:00 am-5:00 pm

SC09 (Day 2): Unconventional Reservoir Production

(Rate-Transient) Analysis (SPE)

SC10 (Day 2): Microseismic Monitoring in Oil or Gas 8:00 am-5:00 pm

Reservoirs (SEG) ONLINE

11:00 am-1:00 pm

SC11 (Day 2): Seismic Anisotropy: Basic Theory and Applications in Exploration and Reservoir

Characterization (SEG) ONLINE



## **MONDAY CONFERENCE HIGHLIGHTS**

#### **Plenary Sessions**

#### **Unconventionals - A Bridge to the Future**

Day: Monday

**Time:** 8:15 am – 9:45 am

**Location:** George R. Brown Convention Center, General Assembly

**Moderator:** Jay Stratton

**Fee:** Included with registration

Emerging technologies associated with the science of unconventional exploration and development can help reduce the impact of climate change and associated global warming while concurrently uplifting societies experiencing energy poverty. The IEA's call to halt new oil and gas development stands in conflict with the energy intensity needs to lift billions out of energy poverty that do not exist with green alternatives.

Leaders within the fossil fuel industry and subject-matter experts focused on solutions largely agree that the energy transition is a process that unfolds over a time span measured in years. This transition embraces renewable energy sources and fossil fuels concurrent with helping 80% of the global population emerge from energy poverty. The success of this effort can only be achieved with a commitment of the brightest and most progressive minds tackling the challenges of that which we can do better as an industry. Solutions to this enigma will emerge from the best efforts applied to implementing change across a broad spectrum of energy technologies and science and a strong collaboration between fossil fuels and renewables.

Our Plenary Panel will share their insights on our industry's commitment to implementing change that delivers the transitional bridge to the future by focus on undisputed challenges, supplementing renewables, embracing a sustainable lower-carbon future, and helping lift the world out of poverty.

#### Speakers:



**Greg Leveille**Retired, formerly with ConocoPhillips



**Amy Henry** Chief Executive Officer, Eunike Ventures



Mark Finley Fellow in Energy and Global Oil, Rice University's Baker Institute



**Deborah Byers** Americas Industry Leader, Ernst & Young

#### **Executive Perspectives**

Day: Monday

**Time:** 10:00 am-11:30 pm

**Location:** George R. Brown Convention Center, General Assembly

Moderator: Luis Baez

Fee: Included with registration

Unconventional oil and natural gas plays are essential to meet global energy needs in the coming decades. The United States contains vast untapped commercial resources that provide energy independence and protect national security. Technological advances in development, production, and distribution can provide these resources in an environmentally clean and efficient manner. Emerging technologies from fossil energy companies promise a wide diversity of solutions to these challenges.

Additionally, the U.S. shale industry is rebounding and delivering record cash flows. These companies have reduced debt and reined in production growth in pursuit of shareholder demands for more favorable financial models which is winning back investors. Now with crude headed toward \$100 a barrel, production growth and capital spending are climbing again, led by the supermajors and private operators. The sweet spot of returning free cash flow and production growth is poised to advance our industry.

We have asked our Executive Plenary Panel to share their perspectives on the current state of the industry as well as evolution to cleaner energy from unconventional plays in the U.S. and the globe in partnership with renewable energy systems while simultaneously returning cash flow and production growth.

#### Speakers:



Richard Lynch Senior Vice President, Technology and Services, Hess



**Kirk Johnson**Senior Vice President,
Lower 48 Assets and
Operations



Mark Berg, Executive Vice President, Corporate Operations, Pioneer Natural Resources



T. Ryder Booth
Vice President,
North America Exploration
& Production, Mid-Continent
Business Unit, Chevron

## MAKE YOUR VOICE COUNT - HELP URTeC SELECT THE BEST OF THE BEST



Use the URTeC Events App to help select the top 16 papers of 2022. Awardees will be recognized on the URTeC website and 2023 program book. The URTeC Events App is available for both iOS and Android devices. Download for free today!

- 1. Launch the URTeC Events App and login in\*
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\*Note: To login enter your email address used when registering and your customer ID. Your customer ID can be found under the bar code on your original registration confirmation email or on your printed attendee badge.

## **MONDAY CONFERENCE HIGHLIGHTS**

#### **Special Session**

**Geomodelling Unconventionals: Bringing Geomodeling Into 2022 Using Data Analytics** 

Day: Monday

Time: 1:45 pm-3:05 pm

Location: George R. Brown Convention Center, Room 351

**Moderators:** Jose Delgado and Rosa Aguilar Fee: Included with registration

The objective of this session is to discuss the importance and impact of the Geostatistical Reservoir Modeling for Unconventional Resources, from Subsurface Up to Economics, Integrated Workflows and Novel Approaches.

#### Speakers:

- Jeffrey Yarus, Ph.D. Professor, Department of Materials Science and Engineering, Case Western Reserve University
- Hope Omodolor, Ph.D. Candidate, Department of Earth and Planetary Sciences, Case Western Reserve University
- Raffik Lazar, Founder and Principal Geoconsultant, GeomodL International
- Robin Dommisse, Geological Modeling Advisor, Bureau of Economic Geology The University of Texas at Austin

#### **Panel Session**

Data Science in Oil and Gas: How Far Have We Come and Where are We Headed?

Monday Day:

3:40 pm-5:25 pm Time:

Location: George R. Brown Convention Center, Room 351

Moderator: Andrew Munoz

Fee: Included with registration

There are new careers, new technologies, and new ways of running a business, all thanks to data scientists and data engineers. This panel will discuss the past, present, and future roles data scientists will play in E&P companies.

#### Panelists:

- Mac Burton, Analytics Engineer, Ovintiv
- Arvind Battula, Head of Data Science, Quantum Energy Partners
- Justin Lo, Head of Data Science and Analytics, Chevron
- Alejandro Valenciano, Director of Analytics, TGS

## **MONDAY TOPICAL LUNCHEONS**

### **Holistic Look at the Opportunities and Challenges** Faced by Unconventionals - A Fireside Chat



Day: Monday

Time: 12:15 pm-1:30 pm

George R. Brown Convention Center, Room 372 Location:

Fee:

Speaker: Thomas Blasingame, Texas A&M University



A holistic look at the opportunities and challenges faced by our industry, with a particular focus on unconventional resources and their current and future impact on the global energy mix. The conversation will evolve around technology, societal engagement, and developing opportunities. A short presentation followed by a

"fireside chat" with a few select individuals who can provide perspective on the past, present, and future aspects of our industry.

#### **Workforce Directions: Unconventionals Take Unconventional Skills**



Time: 12:15 pm-1:30 pm

George R. Brown Convention Center, Location:

Room 382

Fee:

Speakers: Monique Velasquez, Chevron

Tony Pink, National Oilwell Varco

Bill Raatz, OXY

Join us for special panel discussion about the skills that today's technical professionals must have now and for future operations. What is the role of traditional domain expertise? To what extent should team members need to know data analytics? What are some of the collaboration tools and remote technologies that are considered "must-have's"? What are the attitudes, values, and leadership skills viewed to be mission-critical?





#### **Future of Unconventional Gas Production in North America**



Time: 12:15 pm-1:30 pm

George R. Brown Convention Center, Room 381 Location:

Fee:

Speaker: Josh Viets, Chesapeake



Unconventional gas has become a major part of the global energy industry and will be an integral part of the future world energy mix. It is crucial that we execute projects fast and efficiently as we develop these assets. The development using a multi-disciplines approach, with integrated workflows during

appraisal and development phases of unconventional plays development, utilizing a life-cycle mindset, optimizing energy efficiency that have proven to be successful over the last 20 years will be critical to the continued success of unconventional gas development.

## **TUESDAY CONFERENCE HIGHLIGHTS**

#### **Topical Breakfasts**

Local to Global Impact of Supply Chain in the **Industry and New Opportunities Created** 



Day: Tuesday

Time: 7:00 am-8:15 am

George R. Brown Convention Center, Location:

Room 381

Fee: \$40

Bruce Fulin, Argus Media Speaker:

Supply chain has experienced a significant disruption over recent years. Companies are reviewing their supply networks to address not only the immediate challenge, but to understand any potential vulnerabilities both at local and global level. We will explore some of these challenges and discuss ongoing initiatives to work better and provide advantage while reducing risk on any future disruptions.

#### **Earth Imaging for Methane Leak Detection**

Date: Tuesday

7:00 am-8:15 am Time:

Location: George R. Brown Convention Center,

Room 382

Fee: \$40

Speakers: Steve Deiker, Kairos Aerospace

Ryan Keys, Triple Crown Resources

A moderator-lead conversation around methane reduction importance and its environmental impact. We will explore existing and emerging technologies for aerial leak detection.

Our speakers will discuss real-life examples of data acquisition to pinpoint emission sources, steps taken to prevent further leaks, and ROI of methane emission tracking projects.

#### **Panel Sessions**

#### **Cracking the Code of Fracture Driven Interaction**

Tuesday Day:

Time: 10:45 am-12:05 pm

George R. Brown Convention Center, Room 351 Location:

Moderator: Yogashri Pradhan Included with registration Fee:

Fracture-driven Interactions (FDI) continue to be a topic of interest, especially in unconventionals with "bigger bite" developments. This panel continues the conversation on industry's effort to crack the code of fracture-driven interactions, and what technologies or mitigation techniques have been used to date, their impact and the path forward.

#### Panelists:

- Ali Daneshy, President, Daneshy Consultants Intl.
- Mike Rainbolt, Senior Consultant, Rainbolt Consulting
- Duc Lam, Founder and CEO, Tech USI

#### **Carbon Capture and Energy Storage Today:** A Burgeoning Industry or Still a Future Promise?

Day: Tuesday

1:45 pm-3:05 pm Time:

George R. Brown Convention Center, Room 351 Location:

George Koperna Moderator:

Fee: Included with registration

This panel explores the potential and current efforts of carbon capture, utilization, and storage to uphold ESG efforts. In addition, the panel will address strategies for energy storage and examine current projects and case studies.

#### Panelists:

- · Hamed Soroush, President, PetroLern
- Jessica Raines, Global CCUS Discipline Lead, BakerHughes
- Eugene Holubnyak, Director of Hydrogen Energy Research Center, UW
- Neeraj Gupta, Technical Director, Carbon Management, Battelle
- Gilly Rosen, Vice President, Geoscience, Ryder Scott

#### The Inevitable Intersection of the O&G Industry and Bitcoin Mining

Day: Tuesday

Time: 3:40 pm-5:25 pm

George R. Brown Convention Center, Room 351 Location:

Moderator: Andrew Munoz

Fee: Included with registration

Bitcoin is a trillion-dollar asset, and it requires massive amounts of energy to secure its network. This opens many opportunities for oil and gas companies to provide that energy directly. This panel will discuss the industry's future role in mining Bitcoin.

#### Panelists:

- Hayden Griffin Haby III, Business Development Manager, Limpia Creek
- Max Gagliardi, Partner & Co-Founder, Ancova
- Laura Pommer. CEO. Energy Funders
- Vincent Whisker, Technical Business Development Manager, Crusoe **Energy Systems**



Purchase your Topical
Breakfast and Luncheon tickets at registration.

> **Tickets are limited and** required for admission.





## **TUESDAY CONFERENCE HIGHLIGHTS**

#### **Special Session**

Refracs, Worth It or Not? Devon and the DOE Demonstrate

Day: Tuesday

Time: 8:25 am-10:10 am

George R. Brown Convention Center, Room 351 Location:

Moderator: Marianne Rauch

Included with registration Fee:

Refracs are a commonly accepted solution for recovering stranded hydrocarbons in understimulated wells and mitigating offset depletion. Devon Energy and the Department of Energy will present their pad refrac collaboration in the Eagle Ford, and showcase the advanced monitoring technology and analysis used to evaluate their modern refrac techniques.

#### Speakers:

- Cameron Thompson, Geologist, Devon Energy
- Sarah Bacho, Reservoir Engineer, Devon Energy
- Jarret Borell, Petrophysicist, Devon Energy
- **Buddy Price**, Geologist, Devon Energy
- Jackson Haffener, Geophysicist, Devon Energy
- Joe Comisky, Petrophysicist, Devon Energy
- Chris Ketter, Completions Engineer, Devon Energy

## **TUESDAY TOPICAL LUNCHEON**

#### The Economic Outlook for Energy



Time: 12:15 pm-1:30 pm

Location: George R. Brown Convention Center, Room 381

Fee:

Speaker: Garrett Golding, Federal Reserve Bank of Dallas



This talk will provide a global overview of the factors affecting supply and demand for energy, with a focus on oil and gas, but also renewables and the energy transition. The talk will also discuss geopolitical and macroeconomic factors and their impact on the availability of capital and technology.



Purchase your Topical
Breakfast and Luncheon tickets at registration.

> **Tickets are limited and** required for admission.

## **NETWORKING OPPORTUNITIES**

#### **Opening Reception**

Day: Monday

Time: 5:00 pm-6:00 pm

Location: George R. Brown Convention Center, Exhibit Hall A/B

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.

#### 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: George R. Brown Convention Center, Exhibit Hall A/B

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.

### **Networking Reception**

Day: Tuesday

Time: 5:00 pm-6:00 pm

Location: George R. Brown Convention Center, Exhibit Hall A/B

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



### WEDNESDAY CONFERENCE HIGHLIGHTS

#### **Topical Breakfasts**

**The Future of Unconventionals** from a Regulatory Perspective



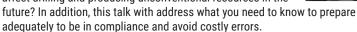
Day: Wednesday 7:00 am-8:15 am Time:

Location: George R. Brown Convention Center, Room 381

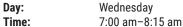
Fee: \$40

Chris Hosek, Texas Star Alliance Speaker:

With an increasing emphasis on environmental protection, water management, and emissions, unconventionals face an often confusing regulatory landscape. What are the directions today and what are the primary issues that will affect drilling and producing unconventional resources in the



#### State of the Union for Unconventionals: **Impact to Global Energy Markets**



Location: George R. Brown Convention Center, Room 382

Fee:

Speaker: Al Salazar, Enverus

Over the past three years, global oil markets have experienced two once-in-a-lifetime shocks. First, the global pandemic dealt a crippling blow to oil demand. Second, Russia's war in the Ukraine is placing heightened attention on the security of energy supply. Both events have long-lasting impacts on oil



fundamentals and from the perspective of U.S. unconventional producers, the outlook for oil has arguably never been so uncertain. In this discussion, we will present our near-term outlook on oil and highlight the key signposts for unconventional producers to identify, in order to help navigate what has become a very uncertain macro-energy landscape.

#### **Panel Sessions**

#### **Risk and Mitigation of Induced Seismicity**

Wednesday Day: Time: 8:25 am-10:10 am

Location: George R. Brown Convention Center, Room 351

**Moderator:** Andrew Lewis

Fee: Included with registration

What have we learned about induced seismicity over the years? What role do SWD's and hydraulic fracturing play in this issue? What can be done to mitigate induced seismicity? Past (Oklahoma), present, and future (Permian basin) topics will be covered.

#### Panelists:

- Alexandro Savvaidis, Manager of the Texas Seismological Network, TexNet
- Shawn Maxwell, Geophysical and Geomechanical Advisor, Ovintiv
- Jens-Erik Lund Snee, Research Geoscientist, USGS
- Stefan Hussenoeder, Geoscience Technology Advisor, ExxonMobil/XTO

#### **Leveraging Technology to Maximize Reservoir Recovery in Maturing Unconventional Plays**

Day: Wednesday

Time: 10:45 am-12:05 pm

George R. Brown Convention Center, Room 351 Location:

Johannes Alvarez Moderator: Included with registration Fee:

Oil and gas companies are trying to find new ways to increase production from existing wells. Some companies focus on re-stimulation and enhanced oil recovery. This panel will discuss the latest technologies that increase recovery in existing wells in maturing unconventional reservoirs.

#### Panelists:

- Salem Thyme, CEO, Engineered Salinity
- Faye Liu, President and Founder, RevoChem
- Kaveh Ahmadi, EOR RE Advisor/Bakken Technology, HESS Corporation
- Birol Dindoruk, Professor, University of Houston, Department of Petroleum Engineering

### **Special Session**

#### **Best of ARMA**

Day: Wednesday Time: 1:45 pm-3:30 pm

Location: George R. Brown Convention Center, Room 351 **Moderators:** Ahmad Ghassemi and John McLennan

Included with registration Fee:

The ARMA Special Session provides insights from four ARMA specialists. 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:

- Yunhui Tan, Research Scientist, Chevron
- Chris Sherman, Staff Scientist, Lawrence Livermore National Laboratory
- Laurent Louis, Principal Scientist, New England Research
- Ghazal Izadi, Vice President, Reservoir Management and Market Strategy, Geothermal Solutions, LLC



Purchase your Topical
Breakfast and Luncheon tickets at registration.

> **Tickets are limited and** required for admission.

## PRE-CONFERENCE SHORT COURSES

	Title	Instructor(s)	Date(s)	Times	Fees	Location
SC 02	Production Forecasts and Reserves Estimates in Unconventional Resources (SPE)	John Lee	Saturday, 18 June Sunday, 19 June	8:00 am-5:00 pm 8:00 am-5:00 pm	Members \$500 Non-Members \$700 Students \$250	ONLINE
SC 04	Reservoir Engineerig Applications of Advanced Data Analytics and Machine Learning Algorithms (SPE)	Ashwin Venkatraman	Sunday, 19 June	8:00 am-5:00 pm	Members \$300 Non-Members \$400 Students \$250	ONLINE
SC 07	Gas EOR in Tight Unconventionals (SPE)	Curtis Hays Whitson and Mathias Carlsen	Sunday, 19 June	8:00 am-5:00 pm	Members \$750 Non-Members \$950 Students \$300	GRB* Room 352 A
SC 08	Moneymakers Conference - Building a Business, Raising the Capital: Petroleum Geologists Who Have Done It All Will Tell You How (AAPG DPA)	Donald Burdick, Kristie Luchtel Ferguson, Todd Witmar, William H. Goodwin, Jacinda Brown, J. Michael Party, Michael Oestmann, Lee Billingsley	Sunday, 19 June	1:00 pm-5:00 pm	Members \$195 Non-Members \$245 Students \$145	GRB* Room 352 B

Cancelled Short Courses:

SC 01 - Machine Learning Techniques for Engineering and Characterization (SEG)

SC 03 - Exploration and development aspects of geothermal energy in sedimentary basins (AAPG Energy Minerals Division and Texas Bureau of Economic Geology)

SC 05 - Mini Frac (DFIT) Applications for the Unconventional (SPE)

SC 06 - Methane Emission Measurement & Mitigation (MEMM) (SPE)

<sup>\*</sup> GRB = George R. Brown Convention Center



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	Title	Instructor(s)	Date(s)	Times	Fees	Location
SC 09	Unconventional Reservoir Production (Rate-Transient) Analysis (SPE)	Chris Clarkson	Thursday, 23 June Friday, 24 June	8:00 am-5:00 pm	Members \$1,400 Non-Members \$1,800 Students \$500	GRB* Room 352 A
SC 10	Microseismic Monitoring in Oil or Gas Reservoirs (SEG)	Leo Eisner	Thursday, 23 June Friday, 24 June	8:00 am-5:00 pm	Members \$500 Non-Members \$600 Students \$250	ONLINE
SC 11	Seismic Anisotropy: Basic Theory and Applications in Exploration and Reservoir Characterization (SEG)	Ilya Tsvankin, Colorado School of Mines	Thursday, 23 June Friday, 24 June	4:00 pm-6:00 pm 11:00 am-1:00 pm	Members \$500 Non-Members \$600 Students \$250	ONLINE



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# TECHNICAL PROGRAM AT A GLANCE

## **LEVEL 3 CONFERENCE ROOMS**

Monday Morning	Plenary Sessions (Location: General Assembly)				
Rooms	Room 351	Room 360	Room 361	Room 370	Room 371
Monday	Special Session: Geomodelling Unconventionals (Bringing Geomodeling into 2022 using Data Analytics)	Theme 1: Applying New Operational Techniques to Improve Well Performance	Theme 2: High and Low Field NMR Applications and Reservoir Quality Improvement I	Theme 4: Value-Driven Seismic Attributes	Theme 8: Novel Production Technologies
Afternoon	Panel: Data Science in Oil and Gas: How Far Have We Come and Where Are We Headed?	Theme 1: Recognizing and Adapting to the Dynamics of Field Development	Theme 2: Advances in Special Core Analysis and Core-Flood Testing	Theme 5: Diagnostics and Monitoring with Geomechanical Models	Theme 8: Case Studies
Tuesday	Special Session: Refracs, Worth It or Not? Devon and the DOE Demonstrate	Theme 3: Emerging Geological Evaluations, Tools, and Workflows for Prospectivity Assessment I	Theme 6: Drainage Diagnostics and Applications in Asset Development I	Theme 7: Impact to Drilling and Completion(s)	Theme 9: EUR and Performance Prediction: Decline Curve Analysis and Beyond I
Morning	Panel: Cracking the Code of Fracture Driven Interaction	Theme 1: Bakken EOR, Well Performance, and Interference	Theme 3: Application of Geological Tools to Unlock Added Value	Theme 4: Downhole Fracture Quantification	Theme 5: Production Simulation and Forecasting
Tuesday	Panel: Carbon Capture and Energy Storage Today: A Burgeoning Industry or Still a Future Promise?	Theme 3: Geologic Drivers for Assessing Acreage	Theme 5: Geomechanics in Field Development (Well Placement, Drawdown, and Optimization)	Theme 6: Drainage Diagnostics and Applications in Asset Development II	Theme 7: Applications in Reserves Estimation and Production Forecasting
Afternoon	Panel: The Inevitable Intersection of the O&G Industry and Bitcoin Mining	Theme 1: Understanding Well Spacing and Well Interference in the Delaware and Marcellus	Theme 5: Rock and Hydraulic Fracture Modelling III	Theme 7: New Approaches, Workflows, and Best Practices; Case Study Examples II	Theme 8: Completion Technologies
Wednesday	Panel: Risk and Mitigation of Induced Seismicity	Theme 1: Understanding Parent-Child Relationships to Define Well Spacing for Field Development	Theme 2: Emerging Petrophysical Evaluations	Theme 6: Geochemical Technologies and Methods	Theme 9: Future of Production Forecasting Data-Driven Models and Physics-Based Solutions II
Morning	Morning Panel: Leveraging Technology to Maximize Reservoir Recovery in Maturing Unconventional Completic	Theme 1: Improving Our Understanding on Well Completion Performance and Flow Analysis	Theme 4: Leveraging New Trends in Microseismic	Theme 7: New Approaches, Workflows, and Best Practices; Case Study Examples III	Theme 9: EUR and Performance Prediction: Decline Curve Analysis and Beyond II
Wednesday Afternoon	Best of ARMA	Theme 1: Well Spacing to Field Development and Stacked Pay Development Strategies - Bakken	Theme 3: International and Emerging Challenges of Unconventional Resources	Theme 8: Enhanced Recovery	Theme 9: Production Diagnostics — Understanding the Big Picture on Production Forecasting







## **TECHNICAL PROGRAM AT A GLANCE**

### **EXHIBIT HALL CONFERENCE THEATERS**

Rooms	Station A Station B		Station C	Station D
Monday	Theme 4: Measuring Downhole Stress and Strain	Theme 5: Rock and Hydraulic Fracture Modelling I	Theme 8: Production Evaluation	Theme 9: Future of Production Forecasting: Data-Driven Models and Physics-Based Solutions I
Afternoon	Theme 2: High and Low Field NMR Applications and Reservoir Quality Improvement II	Theme 5: Rock and Hydraulic Fracture Modelling II	Theme 7: Subsurface Characterization, Applied Case Studies, and Business Implementation	Theme 8: Production Systems
Tuesday Morning	Theme 3: Emerging Geological Evaluations, Tools, and Workflows for Prospectivity Assessment II	Theme 6: Source Rock Evaluation: Characterization, Saturation, and Producibility	Theme 7: New Approaches, Workflows, and Best Practices; Case Study Examples I	Theme 9: Type Well Profiles, Early Data Estimates, and Impacts of Lifecycle Updates
Tuesday	Theme 2: Rock-Fluid and Fluid- Fluid Interactions PVT Data Acquisition/Analysis	Theme 3: What's in Your Rock: Geological Integration that Impacted Go-Forward Business Decisions	Theme 8: Reservoir Engineering	Theme 4: Rock Mechanics
Afternoon	Theme 2: Pore-Network Imaging and Fluid Flow Modeling	Theme 9: Well Spacing and Well Interference Impact	Theme 5: Infill Drilling and Refracturing; Applications and Lessons Learned	Theme 6: Impacts and Lessons Learned of Rock-Fluid and Fluid- Fluid Interactions



## **MONDAY TECHNICAL PROGRAM**

### **Monday Morning**

Plenary Session: Unconventionals - A Bridge to the Future

General Assembly Chair: J. Stratton

8:15 am-9:45 am (See summary page 9)

- **Grea Leveille.** Retired, formerly with ConocoPhillips
- Amy Henry, Chief Executive Officer, Eunike Ventures
- Mark Finley, Fellow in Energy and Global Oil, Rice University's Baker Institute
- **Deborah Byers**, Americas Industry Leader, Ernst & Young

#### **Plenary Session: Executive Perspectives**

General Assembly

Chair: L. Baez

10:00 am-11:30 am (See summary page 9)

- **Richard Lynch**, Senior Vice President, Technology and Services, Hess
- Kirk Johnson, Senior Vice President, Lower 48 Assets and Operations, ConocoPhillips
- Mark Berg, Executive Vice President, Corporate Operations, Pioneer Natural Resources
- T. Ryder Booth, Vice President, North America Exploration & Production, Mid-Continent Business Unit, Chevron

### **Monday Afternoon**

#### Special Session: Geomodelling Unconventionals: Bringing Geomodeling **Into 2022 Using Data Analytics**

Room 351

Co-Chairs: R. Aguilar and J. Delgado

1:45 pm-3:05 pm (See summary page 10)

- Jeffrey Yarus, PhD. Professor, Department of Materials Science and Engineering, Case Western Reserve University
- Hope Omodolor, PhD. Candidate, Department of Earth and Planetary Sciences, Case Western Reserve University
- Raffik Lazar, Founder and Principal Geoconsultant, GeomodL International
- Robin Dommisse, Geological Modeling Advisor, Bureau of Economic Geology, The University of Texas at Austin

#### Theme 1: Applying New Operational Techniques to Improve Well Performance Room 360

Co-Chairs: J. Holt, E. Lamoreux and T. Watson

- 1:45 **Introductory Remarks**
- 1:50 Mitigating Multi-Bench Parent-Child Effects in Eagle Ford Play Using High Volume Preloads: C. Aniemena, C. Latta, C. Chirinos, M. Moulton, A. Labryer (BPX Energy)
- **Tackling a Critical Challenge in Shale Development in the Delaware** 2:15

**Basin: An Interdisciplinary Field Case Study on Subsurface Scale** Diagnosis and Control and Impact on Well Performance: W. Wang, L. DeVoe, W. Wei, P. Dechongkit, K. Ostrowicki, M. Fung, L. B. Fusilier, R. Hanna Alla, Q. Luo, E. Gallegos, A. Kostinovsky, M. Saneifar, L. Crousse, C. Yan, G. Winslow, H. Chebli (Chevron)

#### Theme 2: High and Low Field NMR Applications and Reservoir Quality Improvement I

Room 361

Co-Chairs: M. Ashby and B. Sun

- 1:45 **Introductory Remarks**
- NMR Measured Dissolution of Source Rock During Brine Spontaneous 1:50 **Imbibition:** S. Althaus, J. Chen, Q. Sun (Aramco Americas)

- Results of the Analysis Applying Laboratory Magnetic Resonance and Digital Rock Physics in Unconventional Deposits of the Middle Magdalena Valley, Colombia: M. F. Segovia<sup>1</sup>, G. Davalos<sup>2</sup>, E. R. Perez Carrillo<sup>1</sup>, J. C. Santamaría<sup>1</sup>, G. Carpio<sup>2</sup>, A. Obando Yaguas<sup>1</sup>, A. M. López<sup>1</sup>, M. J. Robayo Niño<sup>1</sup> (1. Ecopetrol; 2. Halliburton)
- Antrim Shale Characterization of Organic Matter Using the Combined Techniques of Solid-Type 22MHz NMR. Organic Petrography, and Pyrolysis: H. Xie<sup>1</sup>, T. Gentzis<sup>1</sup>, H. Carvajal<sup>1</sup>, A. Adeyilola<sup>2</sup> (1. Core Laboratories; 2. Central Michigan University)

#### **Theme 4: Value-Driven Seismic Attributes**

Room 370

Co-Chairs: M. Rauch and S. Sutherland

- **Introductory Remarks** 1:45
- Seismic Anisotropic Fracture Characterization using Azimuthal Amplitude versus Angle (AVAZ) Combined with Azimuthal Frequency versus Angle (FVAZ): S. R. Mahmoud, H. Al-Marzooqi, M. Algaydi, A. Alharthi, M. Baig, A. Al-Hashmi (ADNOC HQ)
- Leveraging Stochastic Inversion to Increase Understanding of 2:15 Drilling and Completion Hazards in the Midland Basin: D. Ellison, Z. Vera\*, C. Diaz (Emerson E&P)
- **Applying Machine Learning Technologies in the Niobrara** Formation, DJ Basin, to Quickly Produce an Integrated Structural and Stratigraphic Seismic Classification Volume Calibrated to Wells: C. Laudon<sup>2</sup>, J. Qi<sup>2</sup>, Y. Wang<sup>1</sup> (1. University of Houston; 2. Geophysical Insights)

#### **Theme 8: Novel Production Technologies**

Room 371

Co-Chairs: H. Kalaei, G. Koperna and W. Saputra

- **Introductory Remarks** 1:45
- 1:50 Rejuvenate Unconventional Wells by Application of High Pression Pulse Waves in the Fracture Network - An Alternative to Refracturing Operations: C. Fensky<sup>3</sup>, Y. Fawaz<sup>2</sup>, M. Perri<sup>3</sup>, C. La Borderie<sup>2</sup>, G. Pijaudier-Cabot<sup>2</sup>, A. Jacques<sup>1</sup> (1. TotalEnergies SE; 2. Universite de Pau et des Pays de l'Adour; 3. Bluesparkenergy)
- **Tailored Metal Oxide Nanoparticles-Based Fluids for Production Enhancement Via Engineered Uplift Pressure Mechanism: Multi-**Basin Case Studies: A. Radwan, K. Naderi, R. Ramanathan (Tenex Technologies)
- Corrosion Inhibitor Evaluation and Selection for S&T Corrosion Control: C. Yan, R. Young, C. Espin, W. Wei, W. Wang, D. Nix (Chevron)

#### Theme 4: Measuring Downhole Stress and Strain

Exhibition Hall - Station A

Co-Chairs: S. Singleton and O. Teran

- **Introductory Remarks**
- **Rapid Estimations of Dynamic Hydraulic Fracture Fronts From Cross-Well Low-Frequency Distributed Acoustic Sensing Strain-**Rate Measurements: S. Leggett<sup>1</sup>, D. Zhu<sup>1</sup>, D. Hill<sup>1</sup>, E. Kerr<sup>2</sup> (1. Texas A&M University; 2. SM Energy)
- Assessing Single and Multiwell Fiber Optic Data for Microseismic Monitoring: An Example From HFTS2: A. Chavarria<sup>1</sup>, G. Ugueto<sup>2</sup>, Y. Oukaci<sup>1</sup>, I. Laflame<sup>1</sup> (1. OptaSense; 2. Shell)
- Measuring Fracture Induced Stress Shadow Using Fiber Optic Sensing and Its Implications on Fracture Stimulation Design: R. Bohn (Silixa)





### **MONDAY TECHNICAL PROGRAM**

#### Theme 5: Rock and Hydraulic Fracture Modelling I

Exhibition Hall - Station B

Co-Chairs: S. Khan, R. Safari and V. Sesetty

- **Introductory Remarks** 1:45
- Lithologically-Controlled Variations of the Least Principal Stress with 1:50 Depth and Resultant Frac Fingerprints During Multi-Stage Hydraulic Fracturing: M. D. Zoback (Stanford University)
- 2:15 **Efficient Semi-Analytical Solution of Induced Stress Change From** Pressure Change in Layered Reservoirs: S. Wang, Y. Zhang\*, O. Khebzegga, B. Wang, Z. Liu, X. Wen (Chevron Corp.)
- A Coupled Model for Three-Dimensional Hydraulic Fracture Propagation 2:40 and Proppant Transport: S. Kryvenko, G. Moridis, T. Blasingame (Texas A&M University)

#### **Theme 8: Production Evaluation**

Exhibition Hall - Station C

Co-Chairs: M. Manohar, S. Naik and A. Singh

- 1:45 **Introductory Remarks**
- Improving Recovery by Effectively Managing the Drawdown in the 1:50 DJ Basin Unconventional Reservoirs Using an Engineered Choke Management (ECM) Strategy: M. Ramurthy<sup>1</sup>, S. Cox<sup>2</sup>, S. Struna<sup>1</sup>, J. Arsenault<sup>1</sup> (1. Bayswater Exploration & Production; 2. Cox Petroleum Consultants)
- 2:15 **Understanding Water Cut Trends in Permian Basin Unconventional** Reservoirs and their Relationship to Development and Production Strategies: S. Amadi, X. Xie, S. Liu, E. A. Kinzler, G. Melendez (Occidental
- 2:40 **Production Analysis and Production Forecasting in Unconventional** Reservoirs Using Initial Production Data: O. Adejare, D. Tompkins, M. Kerls (Revo Testing Technologies)

#### **Theme 9: Future of Production Forecasting:**

Data-Driven Models and Physics-Based Solutions I



Exhibition Hall - Station D Co-Chairs: L. Bermudez and W. Yu

- 1:45 **Introductory Remarks**
- Fractional Dimension RTA in Unconventional Wells: Application in Multi-Phase Analysis, History Matching, Forecasting and Interference **Evaluation:** B. Zanganeh, J. Acuna (Chevron)
- An Improved Method for GOR Forecasting in Unconventionals Using 2:15 Hybrid Models: H. Zalavadia, S. Sankaran (Xecta Digital Labs)
- 2:40 A Comparison of Element of Symmetry Proxy Models to Full-Well Models in Horizontal-Well Tight Gas Reservoirs: A. Small, P. A. Bastian, G. Voneiff (Texas A&M University)

#### Panel Session: Data Science in Oil and Gas:

How Far Have We Come and Where are We Headed?

Room 351

Chair: A. Munoz

3:40 pm-5:25 pm (See summary page 10)

- Mac Burton, Analytics Engineer, Ovintiv
- Arvind Battula, Head of Data Science, Quantum Energy Partners
- Justin Lo, Head of Data Science and Analytics, Chevron
- Alejandro Valenciano, Director of Analytics, TGS

#### Theme 1: Recognizing and Adapting to the Dynamics of Field Development Room 360

Co-Chairs: L. Baez, G. Huling and C. Janova

- **Introductory Remarks** 3:40
- An Integrated Development Optimization Platform for Well Sequencing 3:45 and Unconventional Reservoir Management: J. Peng<sup>1</sup>, J. McEwen<sup>1</sup>, V. Banq<sup>1</sup>, E. Rayfield<sup>2</sup>, L. Borden<sup>1</sup>, M. Nelson<sup>1</sup> (1. ConocoPhillips Company: 2. Retired)
- 4:10 Computational Fluid Dynamics (CFD) Guided Stage Design Optimization for Hydraulic Fracturing: T. Benish<sup>2</sup>, R. Brito<sup>3</sup>, J. S. Brown<sup>2</sup>, Y. Liu\*<sup>1</sup>, T. Long<sup>2</sup>, M. Spiecker<sup>2</sup>, D. Stojkovic<sup>2</sup>, O. Kehmeyer<sup>3</sup> (1. ExxonMobil Research and Engineering; 2. ExxonMobil Upstrean Research Company; 3. XTO Energy, Inc)
- Using the Relationship Between Geochemical and Pressure Data to **Elucidate Produced Oil Sources and Movement in the Subsurface:** S. Compton<sup>1</sup>, K. Baier<sup>1</sup>, J. Brand<sup>1</sup>, J. Barhaugh<sup>1</sup>, F. Liu<sup>2</sup>, S. Stinson<sup>3</sup> (1. Great Western Petroleum; 2. RevoChem, LLC; 3. Fall Line Energy, Inc)
- 5:00 Protecting our Planet One Frac at a Time: G. Norton<sup>1</sup>, J. Nieuwenhuis<sup>1</sup>, M. Van Domelen<sup>1</sup>, Z. West<sup>2</sup>, M. Fueger<sup>2</sup> (1. Red Bluff Resources; 2. Downhole Chemical Solutions)

#### Theme 2: Advances in Special Core Analysis and Core-Flood Testing Room 361

Co-Chairs: O. Beltran and T. Tang

- 3:40 **Introductory Remarks**
- **Evaluation of Shale Oil and Gas Formation Reservoir Quality Using a** Multidisciplinary Workflow of Crushed Rock Core Analysis: O. Reffell<sup>1</sup>. H. Xie\*1, J. Davidson2, J. Ramoin1, J. Markell2 (1. Core Laboratories; 2. Netherland, Sewell & Associates, Inc.)
- 4:10 Poroelastic-Textural Characterization Through Multi-Step Hysteretic Mercury Intrusion Measurements: J. Greene<sup>1</sup>, L. Louis<sup>2</sup>, G. Boitnott<sup>2</sup>, C. Cox<sup>1</sup>, M. McAllen<sup>1</sup> (1. NUTECH Energy; 2. New England Research)
- 4:35 **Shear Induced Matrix Damage and Micro-Fracturing in Oil Shales:** N. J. Welch<sup>1</sup>, M. Meng<sup>1</sup>, W. Li<sup>1</sup>, L. Frash<sup>1</sup>, M. Wigand<sup>2</sup>, J. W. Carey<sup>1</sup> (1. Los Alamos National Laboratory: 2. Chevron)
- 5:00 An Empirical Correlation to Predict Relative Permeability in Fractured Reservoirs Considering the Stress State and the Capillary Number: L. Rueda, K. Díez, A. Restrepo, A. Ocampo, J. Patiño, J. Rayo, D. Ayala (GaStim Technologies)

#### Theme 5: Diagnostics and Monitoring with Geomechanical Models Room 370

Co-Chairs: A. Madyarov and C. Wolfe

- 3:40 **Introductory Remarks**
- **Geomechanical Modeling of Fracture-Induced Vertical Strain Measured** 3:45 by Distributed Fiber Optic Strain Sensing: A. Srinivasan<sup>1</sup>, Y. Liu<sup>2</sup>, K. Wu<sup>1</sup>, G. Jin<sup>3</sup>, G. Moridis<sup>12</sup> (1. Texas A&M University; 2. Lawrence Berkeley National Laboratory; 3. Colorado School of Mines)
- 4:10 Fracture Performance Evaluation From High-Resolution Distributed Strain Sensing Measurement During Production: Insights for Completion Design Optimization: W. Ma<sup>1</sup>, K. Wu<sup>1</sup>, G. Jin<sup>2</sup> (1. Texas A&M University; 2. Colorado School of Mines)
- 4:35 Minimum Horizontal Stress Sharpening; A Novel Workflow Honoring the **High-Resolution Heterogeneity Seen in Unconventional Reservoirs:** E. Velez Arteaga, E. Haddad, A. Wray (Schlumberger)
- **Enhancing Well Performance and Operator Profit by Optimizing Well** Completion Design - A Delaware Basin Case Study: Y. Pei<sup>12</sup>, H. Xiong<sup>1</sup> (1. University Lands; 2. The University of Texas at Austin)





## **MONDAY/TUESDAY TECHNICAL PROGRAM**

#### **Theme 8: Case Studies**

Room 371

Co-Chairs: D. Benoit, H. Evans and N. Rincones

- **Introductory Remarks** 3:40
- Field Measurement of the Formation Stress Depletion and the Pore 3:45 Pressure Depletion in the Eagle Ford: S. Kuroda, H. Ohtani (INPEX Corporation)
- 4:10 Improvement in the Characterization of Vaca Muerta with DFIT Type Curves Analysis: C. F. Gonzalez<sup>1</sup>, I. Arhancet<sup>2</sup> (1. YPF SA; 2. TotalEnergies SE)
- **Estimating Reservoir Pressure Gradient From Stage-by-Stage Pressure** 4:35 Fall Off Analysis in Shale Horizontal Wells: M. Ibrahim<sup>1</sup>, M. Sinkev<sup>1</sup>. T. Johnston<sup>1</sup>, A. M. Farid Ibrahim<sup>2</sup>, A. McMurray<sup>3</sup> (1. Shear Frac Group LLC; 2. King Fahd University of Petroleum and Minerals; 3. Shear FRAC Limited)
- 5:00 Analysis of Multiple Flow/Buildup Tests Including a 5-Year Buildup: Case Study of an Australian Shale Gas Well: C. Clarkson<sup>1</sup>, A. Cote<sup>2</sup> (1. University of Calgary; 2. Origin Energy Brisbane)

#### Theme 2: High and Low Field NMR Applications and Reservoir Quality Improvement II



Exhibition Hall - Station A Co-Chairs: M. Ashby and B. Sun

- 3:40 **Introductory Remarks**
- 3:45 Multi Field Evaluation of T2 Pore Size Distributions and T1-T2 2-D Maps: D. Veselinovic, M. J. Dick, T. Kenney, D. Green (Green Imaging)
- An Unsupervised Stochastic Machine Learning Approach for Well Log Outlier Identification: R. Akkurt, B. Sankaranarayanan, V. Simoes, H. Maniar (Schlumberger)
- **Comparison of Volatiles Analysis of Cuttings From Woodford and Caney** 4:35 Laterals From the SCOOP Play in Oklahoma: C. M. Smith<sup>1</sup>, R. Brito<sup>2</sup>, M. Smith<sup>1</sup>, J. Sinclair<sup>2</sup>, P. Gordon<sup>1</sup>, T. Smith<sup>1</sup>, A. Leavitt<sup>2</sup> (1. Advanced Hydrocarbon Stratigraphy; 2. Ovintiv)
- 5:00 Time Dependence of Decane Gas Condensation and Evaporation in Kerogen Isolates of an Organic Shale in the Gas Condensate Interval From HF NMR: H. Xie<sup>1</sup>, P. M. Singer<sup>2</sup>, X. Wang<sup>2</sup>, Y. Liu<sup>2</sup>, G. J. Hirasaki<sup>2</sup>, M. T. Rauschhuber<sup>3</sup>, B. Sun<sup>3</sup>, J. E. Burger<sup>3</sup>, L. Zhou<sup>4</sup> (1. Core Laboratories; 2. Rice University; 3. Chevron Technical Center; 4. Zealax, Inc.)

#### Theme 5: Rock and Hydraulic Fracture Modelling II

Exhibition Hall - Station B

Co-Chairs: R. Safari and V. Sesetty

- 3:40 **Introductory Remarks**
- Impacts of Well Spacing, Perforation Cluster Spacing, and Bottomhole 3:45 Pressure on Stress Evolution in Unconventional Reservoirs: Y. Pei, J. He\*, K. Sepehrnoori (The University of Texas at Austin)
- Simulation of Downhole Temperature Distribution in Fractured Shale 4:10 Gas Wells by Incorporating Geomechanics and Apparent Permeability Modeling: C. Zhong, J. Y. Leung (University of Alberta)
- An Accurate and Efficient Fracture Propagation Model Auto-Calibration 4:35 Workflow for Unconventional Reservoirs: C. Liu1, K. Wu2, J. Wu4, C. Chang<sup>4</sup>, X. Yang<sup>4</sup>, Y. Gong<sup>3</sup>, E. Zhao<sup>5</sup>, W. Yu<sup>13</sup>, K. Sepehrnoori<sup>1</sup> (1. The University of Texas at Austin; 2. Texas A&M University; 3. SimTech LLC; 4. PetroChina Southwest Oil & Gas Field Company; 5. College Station
- 5:00 **Integrating Induced Seismicity Observations and Discrete Fracture** Network Modelling to Characterize the Natural Fracture Architecture of the Montney Formation, British Columbia: S. Rogers<sup>1</sup>, S. McKean<sup>2</sup> (1. Golder Associates Ltd; 2. University of Calgary)

#### Theme 7: Subsurface Characterization, **Applied Case Studies, and Business Implementation**

Exhibition Hall - Station C

Co-Chairs: V. Bang and D. Gala

- 3:40 **Introductory Remarks**
- 3:45 Improved UCR Development Decision Through Probabilistic Modeling with Convolutional Neural Network (CNN): H. Park, Y. Tan, B. Liang
- 4:10 Delaware Basin Formational Solid Deposit Trends, A Data Driven Look at Developing Proactive Chemical Treatment Strategies: R. W. Hudson<sup>1</sup>, K. J. Spicka<sup>1</sup>, R. W. Pagel<sup>2</sup>, L. Pocha<sup>1</sup>, K. Mauritsen<sup>1</sup>, S. Potter<sup>1</sup>, T. Hite<sup>1</sup> (1. ChampionX: 2. Cooper Gray Consulting)
- 4:35 Application of Deep Learning Neural Networks to Petrophysical Property Prediction: Case Study From the Powder River Basin: C. A. Snow (Danomics LLC)
- 5:00 **Combining Machine Learning and Reservoir Simulation for Robust Optimization of Completion Design and Well Location of Unconventional** Wells: C. M. Calad Serrano, P. Sarma, Y. Zhao, J. Rafiee (Tachyus Corp.)

#### **Theme 8: Production Systems**

Exhibition Hall - Station D

Co-Chairs: K. Henkel-Holan, P. Okada and M. Valluri

- **Introductory Remarks**
- A New Production and Gathering Technique for Unconventional Oil and 3:45 Gas Fields: Y. Fairuzov (Multiphase Energy Corporation)
- 4:10 **Effective Water Treatment in The Permian and Marcellus Shales to** Mitigate Surface Equipment Failures: S. Kakadjian, K. Korhonen, M. Solomon (NexTier Oilfield Service)
- **Transforming Video Camera-Based Analytics Into a Well Performance** 4:35 Indicator: S. Saha, G. Roberts, C. Strubberg, J. McDonald (EV)
- Virtual Flow Metering for Continuous Real-Time Production Monitoring 5:00 of Unconventional Wells: T. Vanvik, J. Henriksson, Z. Yang, G. Weisz (Turbulent Flux)

### **Tuesday Morning**

Special Session: Refracs, Worth It or Not? Devon and the DOE Demonstrate

Room 351 Chair: M. Rauch

8:25 am-10:10 am (See summary page 12)

- Cameron Thompson, Geologist, Devon Energy
- Sarah Bacho, Reservoir Engineer, Devon Energy
- Jarret Borell, Petrophysicist, Devon Energy
- **Buddy Price**, Geologist, Devon Energy
- Jackson Haffener, Geophysicist, Devon Energy
- Joe Comisky, Petrophysicist, Devon Energy
- Chris Ketter, Completions Engineer, Devon Energy

#### Theme 3: Emerging Geological Evaluations, Tools, and Workflows for Prospectivity Assessment I

Room 360

Co-Chairs: D. Ooi and D. Valleau

- 8:25 **Introductory Remarks**
- Integrated Facies Modeling for Unconventional and Tight Reservoirs: M. Campbell, R. Aisner-Williams, T. Akpulat, J. Estrada, M. Kittridge. M. Pavlovic, M. Pryporov (Occidental Petroleum Corp.)
- Subsurface-Integration a Key Step Towards Understanding an Unconventional Oil Play; A Case Study From Onshore Abu Dhabi, UAE: A. Alharthi, M. Baig, T. Brooks, H. Al Marzoogi, P. Van Laer, A. Al Hashmi, M. Coscia (ADNOC)





- 9:20 Rapid Simulation of Unconventional Reservoirs Using Multi-Domain Multi-Resolution Discretization Based on the Diffusive Time of Flight: H. N. Chen, K. Terada, A. Li, A. Datta-Gupta (Texas A&M University)
- 9:45 Ranking Influence of Microfabrics and Microporosity on Acoustic **Propagation in Unconventional Tight Carbonate Reservoirs:** A. Abdelkarim, M. Makkawi (KFUPM, CPG)

#### Theme 6: Drainage Diagnostics and Applications in Asset Development I Room 361

Co-Chairs: J. Adams, J. Jweda and W. Wang

- 8:25 **Introductory Remarks**
- 8:30 Am I Producing From Where I Landed? The Importance and Challenges of Drainage Definition Via Subsurface Fluid Chemistry: C. D. Barrie. R. Patience (Applied Petroleum Technology)
- 8:55 **Geochemical Fingerprinting of Niobrara Oils Across Four Distinct** Landing Zones Located Within Powder River Basin, USA: O. Woodruff1, N. Dannemiller<sup>1</sup>, M. M. Laughland<sup>2</sup> (1. Kimmeridge; 2. Stratum Reservoir)
- 9:20 **Reservoir Characterization and Monitoring Using Geochemical** Fingerprinting Technology with Case Studies in the Delaware Basin: M. Jin<sup>1</sup>, S. Esmaili<sup>2</sup>, A. Harris<sup>2</sup>, M. Paylovic<sup>2</sup>, A. Serna<sup>2</sup>, T. Ly<sup>1</sup>, J. Wu<sup>1</sup>, F. Liu\*<sup>1</sup> (1. RevoChem LLC; 2. Occidental Petroleum Corporation)
- 9:45 Geochemical Fluid Correlations of the Cretaceous Petroleum Systems, Denver Basin, USA: M. Dolan<sup>1</sup>, L. Arnsberger<sup>1</sup>, G. Zimbrick<sup>1</sup>, B. C. Burke<sup>2</sup>, P. Travers<sup>1</sup> (1. Dolan Integration Group; 2. Casco Consulting LLC)

#### Theme 7: Impact to Drilling and Completion(s)

Co-Chairs: M. Burton, S. Matringe and S. Sankaran

- 8:25 **Introductory Remarks**
- 8:30 Discovering Subsurface "Oceans" with Classification: A Machine **Learning Method to Predict Drilling Challenges From Nearby Saltwater** Disposal Wells: J. Kilb, B. Brame (Ovintiv (formerly Encana))
- 8:55 Completion Optimization in the Bakken Petroleum System Using Data Mining: A. Chakhmakhchev, N. A. Azzolina, B. Kurz, X. Yu, C. Dalkhaa, J. Kovacevich, J. Sorensen (EERC)
- 9:20 Automated Optimization of Composite Well Analysis From Best-in-Class Offset Wells Using Cloud-Based Analytics: S. Yalamarty, B. Harclerode
- **Optimizing Completions Strategies Using Low-Cost Data Learning:** 9:45 A. Jacques<sup>1</sup>, C. Daguet-Schott<sup>1</sup>, A. Billat<sup>1</sup>, B. Brouard<sup>2</sup> (1. TotalEnergies SE; 2. Brouard Consulting)

#### Theme 9: EUR and Performance Prediction: Decline Curve Analysis and Beyond I Room 371

Co-Chairs: C. Clarkson and F. Male

- **Introductory Remarks** 8:25
- New Model Improves Secondary Phase Production Forecasts: H. S. Jha, 8:30 W. Lee (Texas A&M University)
- 8:55 **Integrated EUR and Production Decline Analysis for Unconventional** Production in Stacked Development: L. Lu<sup>1</sup>, Y. Li<sup>1</sup>, A. Sneddon<sup>2</sup>, M. Hale<sup>3</sup>, B. Dombroski\*3, C. Flenthrope3, W. Zhang1, S. Wu1, Y. Tang1 (1. Power Environmental Energy Research Institute; 2. Midcon Well Logging; 3. Novo Oil & Gas LLC)
- Midland Basin Wolfcamp Resource Assessment Using Well Spacing 9:20 Normalized Recovery Per Section: D. Alfred<sup>1</sup>, J. McLaughlin\*<sup>2</sup> (1. Vencer Energy; 2. Vitol Inc.)
- **Embedding Physical Flow Functions Into Deep Learning Predictive** 9:45 Models for Improved Production Forecasting: S. Mohd Razak<sup>1</sup>, J. Cornelio<sup>1</sup>, Y. Cho<sup>1</sup>, B. Jafarpour<sup>1</sup>, H. Liu<sup>2</sup>, R. Vaidya<sup>2</sup> (1. University of Southern California; 2. Aramco Americas)

#### **Panel Session: Cracking the Code of Fracture Driven Interaction** Room 351

Chair: Y. Pradhan

10:45 am-12:05 pm (See summary page 11)

- Ali Daneshy, President, Daneshy Consultants Intl.
- Mike Rainbolt, Senior Consultant, Rainbolt Consulting
- Duc Lam. Founder and CEO. Tech USI

#### Theme 1: Bakken EOR, Well Performance, and Interference

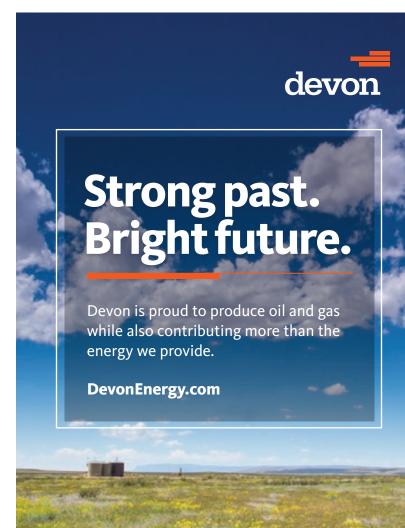
Room 360

Co-Chairs: K. Ahmadi and C. Bailey

- 10:45 **Introductory Remarks**
- 10:50 Analysis of Well Interference Tests in the Bakken Shale, a Fully Communicated System: C. G. Miranda<sup>1</sup>, C. Cipolla<sup>2</sup>, M. Murray<sup>3</sup> (1. Hess Corporation; 3. Sage Rider)
- 11:15 East Nesson Bakken Enhanced Oil Recovery Pilot: Co-Injection of



Produced Gas and a Water/Surfactant Mixture: G. Pospisil<sup>1</sup>, L. Griffin<sup>1</sup>, T. Souther<sup>1</sup>, S. Strickland<sup>1</sup>, J. McChesney<sup>1</sup>, C. Pearson<sup>1</sup>, C. Dalkhaa<sup>3</sup>, J. Sorensen<sup>3</sup>, J. Hamling<sup>3</sup>, B. Kurz<sup>3</sup>, N. Bosshart<sup>3</sup>, M. Warmack<sup>5</sup>, A. Assady<sup>3</sup>, J. Zhao<sup>3</sup>, B. Schwanitz<sup>2</sup>, A. Williams<sup>2</sup>, D. Schechter<sup>2</sup>, A. Sarmah<sup>4</sup> (1. Liberty Resources LLC; 2. EOR ETC; 3. EERC; 4. Texas A&M University; 5. University of North Dakota)



#### Theme 3: Application of Geological Tools to Unlock Added Value

Room 361

Co-Chairs: C. Jolley, D. Ooi and S. Perry

- 10:45 Introductory Remarks
- 10:50 What Can You Learn After 10000 Geosteering Decisions: Y. Cheraghi¹, S. Alyaev², A. Hong¹, I. Kuvaev³, S. Clark³, A. Zhuralvlev³, R. B. Bratvold¹ (1. University of Stavanger; 2. NORCE Norwegian Research Centre; 3. ROGII Inc.)
- 11:15 Understanding the Nartural Fracture System in the Ultra-Deep Sandstone Reservoir Using the High-Definition Oil-Based Microresistivity Image Logs Case Study From Junggar Basin:

  A. Elekwachi<sup>2</sup>, B. Liu<sup>1</sup> (1, Schlumberger China; 2, Schlumberger)
- 11:40 Finding Value-Added Subsurface Strategies in the Transition to a Low Carbon Economy: E. Melchert (Consultant and Former U.S. Department of Energy Director for Upstream Oil & Gas Research)

#### **Theme 4: Downhole Fracture Quantification**

Room 370

Co-Chairs: R. Samaroo and A. Sierra

- 10:45 Introductory Remarks
- 10:50 Hydraulic Fracture Monitoring Using Distributed Acoustic Sensing: A Case Study Using Dip-in Fiber: C. Wang, Y. Ma\*, D. Eaton (University of Calgary)
- 11:15 Seismic Diffraction Imaging of Reservoir Fractures with DAS Seismic Data in a Horizontal Well: B. Fuller (Sterling Seismic & Reservoir Services)
- 11:40 Towards Quantitative Assessment of 4-D DAS Time Shifts for Enhanced Stimulated Rock Volume Characterization: Y. HajNasser (Independent Consultant)

#### **Theme 5: Production Simulation and Forecasting**

Room 371

Co-Chairs: A. Ghassemi, Q. Luo and J. Wang

- 10:45 Introductory Remarks
- 10:50 Using Quantitative Tracer Analysis to Calibrate Hydraulic Fracture and Reservoir Simulation Models: A Permian Basin Case Study: M. Albrecht<sup>1</sup>, S. Borchardt<sup>1</sup>, C. Murphree<sup>1</sup>, M. McClure<sup>2</sup>, J. Rondon<sup>2</sup> (1. SM Energy; 2. ResFrac Corporation)
- 11:15 Deep-Learning-Based Prediction of Post-Fracturing Permeability Field for Development Strategy Optimization in Unconventional Reservoirs:

  J. Wang, Y. Tan\*, B. Liang (Chevron)
- 11:40 An Integrated Reservoir Modeling Case Study in the Permian Basin: Part 2- Model Calibration and Predictions: M. Gaddipati<sup>1</sup>, H. Sarak<sup>1</sup>, B. Musgrove<sup>2</sup>, T. Itibrout<sup>2</sup>, J. Stachowiak<sup>2</sup>, T. Firincioglu\*<sup>1</sup> (1. NITEC LLC;
  - 2. Devon Energy)
- Z. Devon Linergy

## Theme 3: Emerging Geological Evaluations, Tools, and Workflows for Prospectivity Assessment II



Exhibition Hall - Station A

Co-Chairs: N. Nelson, A. Turner and D. Valleau

- 10:45 Introductory Remarks
- 10:50 The Fundamental Role and Effects of Electrostatic Forces Within Pore Systems on Resource Evaluation and Reservoir Performance: Capillary Forces Theory: R. Lee, P. K. Pedersen, T. Moslow, R. Aguilera (University of Calgary)
- Sedimentology, Geochemistry, and Mechanical Stratigraphy of an Early Kimmeridgian Carbonate Mudstone in an Arabian Intrashelf Basin:
   S. A. Chan¹, J. Humphrey¹, B. Albensaad², M. Usman¹³, K. Alramadan¹,
   Y. Alzayer² (1. KFUPM; 2. Saudi Aramco; 3. ANPERC, KAUST)
- 11:40 When the Music Stops: Quantifying Inventory Exhaustion in the Midland Basin with Machine Learning: T. Cross, J. Reed, K. Long (Novi Labs)

## Theme 6: Source Rock Evaluation: Characterization, Saturation, and Producibility

Exhibition Hall - Station B

Co-Chairs: E. Michael, O. Woodruff and C. Zhu

- 10:45 Introductory Remarks
- 10:50 Observations and Explanations of Geochemical Differences Between Rock Samples and Produced Oils From Pilot and Lateral Wells in the Midland Basin: R. Patience, C. D. Barrie (Applied Petroleum Technology)
- 11:15 Source Rock Maturity Assessment Using the Advanced Surface-Enhanced Raman Spectroscopy: Y. Li, L. Lu\*, S. Wu, Y. Tang (Power Environmental Energy Research Institute)
- 11:40 Estimating the Amount of Producible Condensate, Non-Producible Sorbed Petroleum, and Immobile Bitumen in Core Samples Obtained From Source-Rock Reservoirs in the Wet Gas Window: A. Kornacki (Stratum Reservoir)

#### Theme 7: New Approaches, Workflows, and Best Practices; Case Study Examples I

Exhibition Hall - Station C

Co-Chairs: B. Dindoruk and A. Rezaei



- 10:45 Introductory Remarks
- 10:50 An Innovative and Simple Approach to Spatially Evaluate a Proxy for Stress Shadow Effect of Unconventional Reservoir Completion Activity: S. J. Prochnow<sup>2</sup>, A. Grechishnikova<sup>1</sup>, P. Hossaini<sup>1</sup>, S. Saldana<sup>2</sup>, M. Ibrahim<sup>1</sup> (1. Chevron Corp.; 2. Chevron Technology Center)
- 11:15 Driving Mechanisms for Drainage Volume and Cumulative Oil: Case
  Studies for the Midland Basin with Diffusive Time of Flight and Machine
  Learning: Y. Ben, O. Raba, K. Smith, J. Park, R. Gordillo (Occidental
  Petroleum Corp.)
- 11:40 Quantifying Proppant in the SRV Along a Fractured Well at the Hydraulic Fracturing Test Site: A Proppant Log Case Study From Permian-Delaware Basin: D. Maity, J. Ciezobka (Gas Technology Institute)

## Theme 9: Type Well Profiles, Early Data Estimates, and Impacts of Lifecycle Updates



Exhibition Hall - Station D

Co-Chairs: P. Bandyopadhyay, P. Crespo and B. Liang

- 10:45 Introductory Remarks
- 10:50 Scaling Improves Type Well Construction: W. Lee, H. S. Jha\* (Texas A&M University)
- 11:15 Transfer Learning with Multiple Aggregated Source Models in Unconventional Reservoirs: J. Cornelio<sup>1</sup>, S. Mohd Razak<sup>1</sup>, Y. Cho<sup>1</sup>, B. Jafarpour<sup>1</sup>, H. Liu<sup>2</sup>, R. Vaidya<sup>2</sup> (1. University of Southern California; 2. Aramco Americas)
- 11:40 Statistical and Machine Learning Methods Help Us Identify Analogous Wells for Enhanced Type Well Construction: H. S. Jha, W. Lee (Texas A&M University)

## **Tuesday Afternoon**

Panel: Carbon Capture and Energy Storage Today: A Burgeoning Industry or Still a Future Promise?

Room 351

Chair: G. Koperna

1:45 pm-3:05 pm (See summary page 11)

- Hamed Soroush, President, PetroLern
- Jessica Raines, Global CCUS Discipline Lead, Baker Hughes
- Eugene Holubnyak, Director of Hydrogen Energy Research Center, UW
- Dr. Neeraj Gupta, Technical Director, Carbon Management, Battelle
- Gilly Rosen, Vice President, Geoscience, Ryder Scott

#### **Theme 3: Geologic Drivers for Assessing Acreage**

Room 360

Co-Chairs: D. Elizondo, S. Perry and M. Poole

- **Introductory Remarks** 1:45
- An Innovated and Integrated Smart Fracture Calibration Workflow Based 1:50 on Geophysics and Geology for Deep Shale Reservoirs with Complex Natural Fracture Networks: C. Liu<sup>1</sup>, J. Miao<sup>3</sup>, J. Wu<sup>2</sup>, X. Yang<sup>2</sup>, C. Chang<sup>2</sup>, W. Yu<sup>13</sup>, K. Sepehrnoori<sup>1</sup> (1. The University of Texas at Austin; 2. Petrochina Southwest Oil and Gas Field Company; 3. SimTech LLC)
- Delaware Basin Regional 3-D Geo-Cellular Model: Construction and 2:15 Use: B. J. Casey, D. Carr, R. Eastwood, K. Smye, S. Tavassoli (University of Texas, Bureau of Economic Geology)
- 2:40 Fine-Scale Lamination/Bedding, An Important Factor in Unconventional Reservoirs Hydrocarbon Productivity: C. E. Molinares-Blanco<sup>12</sup>, D. Becerra-Rondon<sup>3</sup>, H. Galvis-Portilla<sup>3</sup>, D. Duarte<sup>2</sup> (1. Sierracol Energy; 2. University of Oklahoma; 3. University of Calgary)

#### **Theme 5: Geomechanics in Field Development** (Well Placement, Drawdown, and Optimization)

Room 361

Co-Chairs: E. Araujo and Y. Li

- 1:45 **Introductory Remarks**
- 1:50 Analysis of the Production Casing Deformation Due to Shearing of Offset Hydraulic Fractures: Z. Radakovic-Guzina<sup>1</sup>, B. Damjanac\*<sup>1</sup>, A. A. Savitski<sup>2</sup>, N. Suarez<sup>2</sup>, C. Ledet<sup>2</sup> (1. Itasca Consulting Group, Inc.; 2. Shell Exploration and Production Company)
- Optimizing Well Spacing and Completion Design Using Simulation Models Calibrated to the Hydraulic Fracture Test Site 2 (HFTS-2) Dataset: S. Pudugramam<sup>1</sup>, R. J. Irvin\*<sup>2</sup>, M. McClure<sup>2</sup>, G. Fowler<sup>2</sup>, F. Bessa<sup>1</sup>, Y. Zhao<sup>1</sup>, J. Han<sup>1</sup>, H. Li<sup>1</sup>, A. Kohli<sup>3</sup>, M. D. Zoback<sup>3</sup> (1. Occidental; 2. ResFrac Corporation; 3. Stanford University)
- How Does the Impact of Completions Change Over the Life of a Well? 2:40 A Comparison Across the Major U.S. Unconventional Plays Using Machine Learning: T. Cross, K. Long, D. Niederhut, A. Cui (Novi Labs)

#### Theme 6: Drainage Diagnostics and Applications in Asset Development II Room 370

Co-Chairs: J. Adams, J. Jweda and W. Wang

- **Introductory Remarks** 1:45
- 1:50 **Numerical Simulation of Geochemical Effects on Flowback Analysis and** Enhanced Oil Recovery Strategies: G. Zhang, J. Y. Leung (University of
- **Time Lapse Geochemistry Production Allocation; End Member** 2:15 Definition and Selection; Case Studies; Eagle Ford and Delaware Basin: A. Turner<sup>1</sup>, C. Donohue<sup>1</sup>, A. Zumberge<sup>1</sup>, A. Munoz<sup>2</sup>, P. Bergeron<sup>2</sup> (1. GeoMark Research; 2. Ensign Natural Resources)
- 2:40 **Using Geochemical Production Allocation to Calibrate Hydraulic** Fracture and Reservoir Simulation Models: A Permian Basin Case Study: M. Albrecht<sup>1</sup>, S. Borchardt<sup>1</sup>, M. McClure<sup>2</sup> (1. SM Energy; 2. ResFrac Corporation)

#### Theme 7: Applications in Reserves Estimation and Production Forecasting Room 371

Co-Chairs: H. Klie, Y. Liu and L. Luo

- **Introductory Remarks** 1:45
- 1:50 Sequence-to-Sequence (Seq2Seq) Long Short-Term Memory (LSTM) for Oil Production Forecast of Shale Reservoirs: C. Aranguren, A. Fragoso, R. Aguilera (University of Calgary)
- 2:15 The Diminishing Returns of Lateral Length Across Different Basins: A. Cui, T. Cross (Novi Labs)
- 2:40 Using Data Science to Assess Repeatability in Analogue Mature Fields: A Risk Management Tool to Optimize Your Appraisal Strategy: M. Letourneur (TotalEnergies SE)

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



Exhibition Hall - Station A

Co-Chairs: S. Dyer, B. Liang, V. Montoya and J. Schembre-McCabe

- **Introductory Remarks**
- **Development Saturation Pressure Correlations for Reservoir Fluids** 1:50 From Unconventional Reservoirs: N. D. Mejia, T. Blasingame (Texas A&M
- 2:15 Wettability in Niobrara, Codell, Eagle Ford, Bakken, and Wolfcamp Formations: For EOR and CCUS Applications: O. Uzun, H. Kazemi, S. A. Sonnenberg (Colorado School of Mines)
- 2:40 **Choke Management-The Driver of Liquid Yield Trends in Shale Reservoirs:** Y. Barzin, G. Walker (Repsol)

#### Theme 3: What's in Your Rock: Geological Integration that Impacted Go-Forward Business Decisions



Exhibition Hall - Station B

Co-Chairs: D. Hume and C. Neale

- **Introductory Remarks** 1:45
- 1:50 Mobile or Immobile: Hydrocarbon Characterization From the **Comparison of Various Extraction Techniques to Produced Oils:** A. Zumberge, S. Perry, K. Cheng, C. Donohue (GeoMark Research)
- 2:15 How Much Better Could We Have Done? Using a Time Machine Method to Quantify the Impact of Incremental Geologic data on Machine Learning Forecast Accuracy: J. Reed, C. Macalla\* (Novi Labs)
- **Targeting the Leonardian Bone Spring Limestone in the Southern** 2:40 Delaware Basin: Example From Upper 2nd Limestone, Pecos County, West Texas: L. Ko<sup>1</sup>, T. Larson<sup>1</sup>, D. Martinez<sup>2</sup>, R. Scott<sup>2</sup>, P. Periwal<sup>1</sup>, E. Sivil<sup>1</sup> (1. University of Texas at Austin; 2. Diamondback Energy Inc.)

#### **Theme 8: Reservoir Engineering**



Exhibition Hall - Station C

Co-Chairs: Y. Chen, M. Meyer and M. Valluri

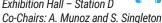
- **Introductory Remarks** 1:45
- Application of the β-derivative to Evaluate Multi-Fractured Horizontal 1:50 Well Performance in Unconventional Shale Reservoirs: A. Jimenez, T. Blasingame (Texas A&M University)
- 2:15 Geological Containment vs. Well Containment for Huff and Puff (H&P) Gas Injection in Shale Oil Reservoirs: X. Bao, A. Fragoso, R. Aguilera\* (University of Calgary)
- Water Imbibition and Oil Recovery in Shale: Dynamics and Mechanisms 2:40 Using Integrated Cm-to-Nm-Scale Imaging: S. Peng<sup>1</sup>, J. LaManna<sup>2</sup>, P. Periwal<sup>1</sup>, P. Shevchenko<sup>3</sup> (1. University of Texas at Austin; 2. NIST; 3. Argonne National Lab)





#### **Theme 4: Rock Mechanics**

Exhibition Hall - Station D



- **Introductory Remarks**
- **Estimating Seismic Anisotropy Parameters From Rock Properties in** 1:50 Wolfcamp Shales, Midland Basin: J. Lee, D. E. Lumley (University of Texas at Dallas)
- 2:15 **Characterizing Hydraulic Fractures Using the Transient Pressure Surge** Effect: Y. Jin1, Y. Zheng1, L. Huang2, C. Ehlig-Economides2 (1. University of Houston; 2. Los Alamos National Laboratory)
- **Quantitative Characterization of Deformation and Damage in Shale** 2:40 Under Compression Utilizing Digital Image Correlation: F. Nath. F. Borias. C. Netro, J. L. Perez (Texas A&M International University)

#### Panel: The Inevitable Intersection of the O&G Industry and Bitcoin Mining

Room 351

Chair: A. Munoz

3:45 pm-5:25 pm (See summary page 11)

- Hayden Griffin Haby III, Business Development Manager, Limpia Creek
- Max Gagliardi, Partner & Co-Founder, Ancova
- Laura Pommer, CEO, Energy Funders
- Vincent Whisker, Technical Business Development Manager, Crusoe **Energy Systems**

#### Theme 1: Understanding Well Spacing and Well Interference in the Delaware and Marcellus

Room 360

Co-Chairs: R. Hull, A. Lerza, A. Sloan and A. Webster

- 3:40 **Introductory Remarks**
- 3:45 **Completions Optimization and Fracture Evaluation of Infill Wells:** A Southern Delaware Basin Case Study: K. D. Brady<sup>1</sup>, B. Atwell<sup>1</sup>, K. Wutherich<sup>3</sup>, B. Katon<sup>3</sup>, M. Braim<sup>2</sup>, S. Bowman-Young<sup>2</sup> (1. Gordy Oil; 2. ESG Solutions: 3. Drill2Frac)
- Multibench-Multiwell Interference in Unconventional Reservoir: Field 4:35 Observations and Numerical Studies in Texas Delaware: H. Behzadi, Y. Shin (Occidental)
- A Multi-Disciplinary Approach to Evaluating Development Strategies in the Marcellus to Address Well Spacing, In-Fill Timing and Operational Sequencing: B. V. Cherian<sup>1</sup>, H. Guerrero<sup>2</sup>, R. Pratt<sup>2</sup>, T. Lombardi<sup>2</sup>, Z. Swanson<sup>2</sup>, Y. Faulkner<sup>1</sup>, S. Narasimhan<sup>1</sup>, O. Olaoye<sup>1</sup> (1. Premier Oilfield Group; 2. Inflection Energy)

#### Theme 5: Rock and Hydraulic Fracture Modelling III

Room 361

Co-Chairs: D. Gokaraju and S. Singleton

- **Introductory Remarks** 3:40
- A New Fracture Parameters Inversion Model Based on the Pressure of 3:45 Shut-In Under Pressure-Dependent Leak-Off Conditions: X. Hu<sup>1</sup>, Z. Tu<sup>1</sup>, S. Ma<sup>2</sup>, M. Liu<sup>2</sup>, F. Zhou<sup>1</sup>, S. Jing<sup>1</sup> (1. China University of Petroleum-Beijing; 2. China Mobiltech Oil & Gas Production Enhancement Technology Services Co.)
- Numerical Modeling of Hydraulic Fracture Propagation and Fault 4:10 Activation in the Presence of a Sealing Fault and Highly Permeable Damage Zone – A Case Study of the Montney Formation in British Columbia: Z. Esmaeilzadeh, D. Eaton, C. Wang (University of Calgary)
- 4:35 On Poroelastic Mechanisms in Hydraulic Fracturing, From Refrac to Fracture Swarms: D. Kumar, A. Ghassemi\* (University of Oklahoma)
- Impact of Horizontal Weak Interfaces on the Hydraulic Fracturing: 5:00 From Height Growth to Lateral Propagation: J. Li, K. Wu (Texas A&M) University)

#### Theme 7: New Approaches, Workflows, and Best Practices; Case Study Examples II

Room 370

Co-Chairs: D. Maity and S. Matringe

- 3:40 **Introductory Remarks**
- 3:45 **Prediction and Analysis of Geomechanical Properties Using Deep** Learning: A Permian Basin Case Study: F. Nath, K. Murillo, J. L. Perez, C. Netro, F. Borjas (Texas A&M University System)
- 4:10 **Simultaneous Auto-Calibrations of Complex Fracture Configurations** in Multi-Well Development Scenario in Uinta Basin with Embedded Discrete Fracture Model and Multivariate Gaussian Distributions: Y. Xiao<sup>1</sup>, C. Liu<sup>1</sup>, W. Yu<sup>2</sup>, K. Sepehrnoori<sup>1</sup>, C. Zigler<sup>1</sup> (1. University of Texas at Austin: 2. SimTech)
- 4:35 Statistical Analysis of the Petrophysical Properties of the Bakken Petroleum System: A. Laalam<sup>1</sup>, H. Ouadi<sup>1</sup>, A. Merzoug<sup>1</sup>, A. Chemmakh<sup>1</sup>, A. Boualam<sup>1</sup>, S. Djezzar<sup>1</sup>, I. Mellal<sup>1</sup>, M. Djoudi<sup>2</sup> (1. University of North Dakota; 2. University of Boumerdes)
- **Value Creation Through Application of Hybrid Models for** 5:00 **Unconventional Production Optimization-Field Case Studies:** H. Zalavadia, T. Stoddard, S. Sankaran (Xecta Digital Labs)

#### **Theme 8: Completion Technologies**

Room 371

Co-Chairs: A. Imgam and A. Singh

- 3:40 **Introductory Remarks**
- 3:45 Applications of Distributed Strain Sensing via Rayleigh Frequency Shift: Illuminating Near-Well and Far-Field Fracture Characteristics: K. Dhuldhoya, K. Friehauf (ConocoPhillips)
- A Comparison of Latest Generation Frac New Well and Refrac Results 4:10 with Evidence of Refrac Reorientation: R. E. Barba<sup>1</sup>, J. Allison<sup>3</sup>, M. Villarreal<sup>2</sup> (1. Integrated Energy Services Inc; 2. Enventure Global Technology; 3. Armor Energy LLC)
- 4:35 Mitigating Lost Circulation Risks in Depleted Delaware Basin Formations: H. Conces, P. Osborne, K. Agapiou\* (Halliburton)
- 5:00 Flow Profile Estimation in Horizontal, Hydraulically Fractured Wells Using a Péclet Number Approach: J. App (Chevron)

#### Theme 2: Pore-Network Imaging and Fluid Flow Modeling Exhibition Hall - Station A



Co-Chairs: S. Khade, S. Khan, V. Montoya and J. Schembre-McCabe

- 3:40 **Introductory Remarks**
- 3:45 **Deriving Elastic and Petrophysical Properties From Small Sample** Volumes Using Digital Rock Analysis: V. Ravlo<sup>1</sup>, P. Øren<sup>2</sup>, C. Ringstad<sup>3</sup> (1. Petricore USA; 2. Petricore Norway; 3. Sintef Petroleumsforskning AS)
- Visualizing Fracture-Matrix Fluid Exchange in Unconventional Tight 4:10 Mudstone: J. J. Valenza<sup>1</sup>, D. Crandall<sup>2</sup>, J. Moore<sup>2</sup>, S. Sanguinito<sup>2</sup> (1. ExxonMobil Research and Engineering; 2. NETL)
- 4:35 High-Resolution HFTS2 Slant Core Imaging Through X-Ray Computed Micro Tomography: J. O. Guerrero, D. Espinoza (The University of Texas
- 5:00 Effects of Soxhlet Extraction on Shale Microstructure: M. Curtis, C. Rai, C. Sondergeld (University of Oklahoma)

#### Theme 9: Well Spacing and Well Interference Impact

Exhibition Hall - Station B

Co-Chairs: M. Ba Geri and T. Oluokun



3:45 Multiwell Decline Curve Analysis Using a Type Curve Approach: T. Blasingame (Texas A&M)





## TUESDAY/WEDNESDAY TECHNICAL PROGRAM

- 4:10 Investigation of Staggered/Stacked Parent-Child Well Spacing with **Multiwell Geomechanics Simulation in Multilayer Unconventional** Reservoirs: Y. Pei<sup>1</sup>, K. Wu<sup>2</sup>, C. Chang<sup>3</sup>, J. Wu<sup>3</sup>, X. Yang<sup>3</sup>, C. Liu<sup>1</sup>, J. Wang<sup>1</sup>, W. Yu4, K. Sepehrnoori1 (1. The University of Texas at Austin; 2. Texas A&M University; 3. PetroChina Southwest Oil & Gas Field Company; 4. Sim Tech LLC)
- 4:35 Integration of Production Communication and Hydraulic Fracture Connection in Unconventional Reservoirs: Y. Ning, G. Jin, X. Zhu, A. Tura (Colorado School of Mines)
- 5:00 Closing the Gap in Quantifying the Extension of Depletion: A Practical Workflow to Convert Analytical Fracture Half-Length to Actual Non-Uniform SRV: V. Muralidharan, S. Esmaili (Occidental)

#### Theme 5: Infill Drilling and Refracturing: **Applications and Lessons Learned**



Exhibition Hall - Station C Co-Chairs: Y. Chen and B. Madara

- 3:40 **Introductory Remarks**
- 3:45 Refracturing in the Bakken - An Analysis of Data From Across North Dakota: C. Dalkhaa, N. A. Azzolina, A. Chakhmakhchev, B. Kurz, J. Sorensen, C. Gorecki, J. Harju (University of North Dakota Energy & Environmental Research Center)
- 4:10 **Investigation of Subsurface Mechanism Impacting Parent Well Pressure Response During Fracture Driven Interactions Using Coupled** Geomechanics, Fluid Flow, and Fracture Propagation Modeling: R. Wu, X. Liu, A. Singh, B. Wang, A. Vissotski, Y. Li (Chevron)
- 4:35 A Novel Casing in Casing Refracturing Treatment for a Bullheading Re-Fractured Well in Fuling Shale Gas Field-Case Study: Z. Lu<sup>2</sup>, J. Shen<sup>2</sup>, C. Zhang<sup>3</sup>, Y. Ming<sup>3</sup>, R. Han\*<sup>1</sup>, B. Wang<sup>1</sup>, Neil Modeland<sup>1</sup> (1. Halliburton; 2. Sinopec Jianghan Oilfield Company; 3. Sinopec Chongqing Fuling Shale Gas Exploration and Development Co. Ltd)
- 5:00 Advanced Reservoir Geomechanics Modeling of Depletion Impact on Wellbore Stability for Infill Well Drilling in Unconventional Reservoirs: W. Zheng, L. Xu (Schlumberger)

#### Theme 6: Impacts and Lessons Learned of **Rock-Fluid and Fluid-Fluid Interactions**



Exhibition Hall - Station D

Co-Chairs: O. Terry, W. Wang and L. Xu

- **Introductory Remarks** 3:40
- Impact of Subsurface Fluid Chemistry on Microbial Growth, Corrosion, and Reservoir Souring in Unconventional Assets: D. G. Leach, W. Wang, C. Yan, R. MacLeod, D. Mattis, W. Wei (Chevron Corp.)
- 4:10 Influence of Mineralogy and Rock Fabric on Geochemical Alteration of **Pores in North American Unconventional Reservoir Materials:** A. Hakala<sup>1</sup>, S. Sanguinito<sup>1</sup>, B. McAdams<sup>1</sup>, L. Burrows<sup>1</sup>, M. Stuckman<sup>1</sup>, W. Xiong<sup>1</sup>, G. Bhandari<sup>1</sup>, J. Moore<sup>1</sup>, G. Hunter<sup>2</sup> (1. National Energy Technology Laboratory; 2. ExxonMobil Technology and Engineering Company)
- 4:35 The Impact of Hydraulic Fracturing Fluid on the Near-Wellbore Shale Region Involving Interactions with Steel, Cement and Shale: W. Xiong<sup>12</sup>, B. McAdams<sup>12</sup>, M. Stuckman<sup>12</sup>, B. Kutchko<sup>1</sup>, C. Lopano<sup>1</sup>, A. Hakala<sup>1</sup> (1. National Energy Technology Laboratory; 2. NETL Support Contractor Leidos)
- 5:00 TBD

### **Wednesday Morning**

Panel Session: Risk and Mitigation of Induced Seismicity

Room 351

Chair: A. Lewis

8:25 am-10:10 am (See summary page 13)

- Alexandro Savvaidis, Manager of the Texas Seismological Network,
- Shawn Maxwell, Geophysical and Geomechanical Advisor, Ovintiv
- Jens-Erik Lund Snee. Research Geoscientist. USGS
- Stefan Hussenoeder, Geoscience Technology Advisor, ExxonMobil/XTO

#### Theme 1: Understanding Parent-Child Relationships to Define Well Spacing for Field Development

Room 360

Co-Chairs: R. Hurt, J. Kessler and A. Sloan

- 8:25 **Introductory Remarks**
- 8:30 **Operator Case Study of Novel Integration of Machine Learning Techniques and Numerical Simulation to Estimate Child Depletion in the** Delaware Basin: E. J. Wolfram, J. Cassanelli, S. Esmaili, H. Deng, V. Muralidharan, I. Harmawan<sup>1</sup> (Occidental Petroleum Corp.)
- 8:55 **Using Machine Learning to Customize Development Unit Spacing for** Maximum Acreage Value: M. Maquire<sup>2</sup>, A. Cui<sup>1</sup>, T. E. Witham<sup>2</sup>, T. Cross<sup>1</sup> (1. Novi Labs; 2. Diamondback Energy)
- 9:20 **Case Study of Optimizing Oil Recoveries and Parent-Child Relationships** in the Gallup Sandstone, San Juan Basin, New Mexico: M. Slowinski, D. Koenig, J. Rosenthal, D. Hunter, N. Tretheway, N. Li (DJR Energy, LLC)

#### Theme 2: Emerging Petrophysical Evaluations

Room 361

Co-Chairs: S. Gurses and H. Wang

- **Introductory Remarks** 8:25
- 8:30 **Core-Calibrated Multi-Mineral Interpretation in Reservoirs with Complex** Mineralogy: M. Luycx, H. Kadir, E. O. Oyewole, B. Wheelock, O. Ljasan, D. McLendon (ExxonMobil Corp.)
- Petrophysical Modeling to Improve the Understanding of Geothermal 8:55 **Exploration in a Sedimentary Field on Texas Gulf Coast Basin:** L. Ortiz Sanguino<sup>1</sup>, C. Vivas<sup>1</sup>, D. Rehg<sup>2</sup>, D. Knight<sup>2</sup>, S. Perry<sup>3</sup>, A. Bradley<sup>2</sup>, H. Bedle<sup>1</sup>, S. Salehi<sup>1</sup>, S. Marshall<sup>2</sup> (1. University of Oklahoma; 2. Criterion Energy Partners; 3. Geomark Research)
- 9:20 Comprehensive Model for the DFIT-Flowback Test Pumping, Shut-In, Shoked Flowback, and Rebound Behavior: G. Liu<sup>1</sup>, C. Clarkson<sup>2</sup>, C. Ehlig-Economides<sup>1</sup> (1. University of Houston; 2. University of Calgary)
- 9:45 **Development of a Universal Physics-Based Resistivity Model for Estimation of Fluid Content in Unconventional and Conventional** Reservoirs: S. Dash, Z. Heidari (The University of Texas at Austin)





## WEDNESDAY TECHNICAL PROGRAM

#### Theme 6: Geochemical Technologies and Methods

Room 370

Co-Chairs: C. Barrie, H. Carvajal and C. Donohue

- **Introductory Remarks**
- Compositional Fractionation of Petroleum Fluids During Migration and 8:30 Production: A Bakken Case Study with Fourier Transform Ion Cyclotron Resonance (FT-ICR) Mass Spectrometry: Y. Song (ConocoPhillips)
- 8:55 **Integrated Formation Evaluation Using Multiple Geochemical Solutions** to Optimize Reservoir Description and Evaluate Production Potential From Multiple Targets in the Northern Delaware Basin: B. Cecconi<sup>1</sup>, P. Franco<sup>1</sup>, R. Galimberti<sup>1</sup>, I. Easow<sup>2</sup>, C. Ly<sup>2</sup>, J. Speight<sup>3</sup>, T. Passmore<sup>3</sup> (1. Geolog Technologies; 2. Geolog Americas; 3. Marshall & Winston, Inc.)
- Reliable EUR Prediction Using Geochemistry-Derived Drainage Profiles 9:20 of 200+ Wells in the Anadarko Basin: J. Bachleda<sup>1</sup>, G. Norton<sup>2</sup>, W. Kennedy<sup>2</sup>, T. Lv<sup>1</sup>, J. Wu<sup>1</sup>, F. Liu<sup>1</sup> (1. RevoChem; 2. Red Bluff Resources)

#### **Theme 9: Future of Production Forecasting: Data-Driven Models and Physics-Based Solutions II**

Room 371

Co-Chairs: Y. Chen and B. Dindoruk

- **Introductory Remarks** 8:25
- 8:30 **Multiphase Flowing Material Balance Without Relative Permeability** Curves: L. G. Thompson<sup>1</sup>, B. Ruddick<sup>2</sup> (1. Cimarex Energy Co)
- 8:55 **Robust Uncertainty Quantifications of Fracture Geometries Through** Automatic History Matching with Application in Real Shale Gas Fields: Y. Xiao<sup>1</sup>, C. Liu<sup>1</sup>, W. Yu<sup>21</sup>, K. Sepehrnoori<sup>1</sup>, C. Zigler<sup>1</sup> (1. University of Texas at Austin: 2. SimTech)
- Forecasting Well-to-Well Interference in the Permian Basin by Applying 9:20 Neural Networks on Pre-Run Simulations: Y. Pradhan<sup>1</sup>, W. Lee<sup>2</sup>, D. Lam<sup>3</sup>, K. Hanna<sup>3</sup>, T. Nguyen<sup>3</sup>, A. Tran<sup>3</sup> (1. Endeavor Energy Resources; 2. Texas A&M University; 3. Tech USI)
- **Three-Dimensional Fractal Model of Hydraulically Fractured Horizontal** 9:45 Wells in Anisotropic Naturally Fractured Reservoirs: R. M. Mariscal Romero, R. Camacho-Velázguez (UNAM)

#### **Panel Session: Leveraging Technology to Maximize Reservoir Recovery in Maturing Unconventional Plays**

Room 351

Chair: J. Alvarez

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

- Salem Thyme, CEO, Engineered Salinity
- Faye Liu, President and Founder, RevoChem
- Kaveh Ahmadi, EOR RE Advisor/Bakken Technology, HESS Corporation
- Birol Dindoruk, Professor, Department of Petroleum Engineering, University of Houston

#### Theme 1: Improving Our Understanding on **Well Completion Performance and Flow Analysis**

Room 360

Co-Chairs: O. Beltran, D. Molinari and M. Poole

10:45 **Introductory Remarks** 

10:50 "Not Measured, Not Improved" AGILE 3 Phase Well Flow Measurement and Well Testing Unit: B. Singh<sup>1</sup>, B. Gerrard<sup>1</sup>, D. Reasoner\*<sup>2</sup>, E. Vosburgh<sup>1</sup> (1. Apache Corp.; 2. NeoTeK Energy, Inc)

11:40 **Well Completion Performance Analysis in the Vaca Muerta Formation by** Leveraging Fractional Dimension RTA Method - Case of Study: A. Lerza<sup>1</sup>, M. Mamani<sup>2</sup>, J. Acuna<sup>1</sup>, M. Puigdengolas<sup>2</sup> (1. Chevron; 2. YPF)

#### Theme 4: Leveraging New Trends in Microseismic

Room 361

Co-Chairs: A. Lewis and O. Teran

- 10:45 Introductory Remarks
- Pore Pressure Mapping Using Microseismicity and Borehole Data: D. Alexander<sup>1</sup>, L. Eisner\*<sup>1</sup>, U. Waheed<sup>2</sup> (1. Seismik S.R.O.; 2. King Fahd University of Petroleum & Minerals College of Petroleum Engineering & Geosciences)
- 11:15 **Do Moment Tensors Flip During Hydraulic Completions?:** A. M. Baig, S. Karimi, B. Witten, A. Booterbaugh\* (Nanometrics Inc)
- A Numerical Simulation of Microseismic Depletion Delineation (MDD) 11:40 for Duverney Oilfield in Canada Using a Fast Approach for a Fully Coupled 3-D Quasi-Static Poroelastic Modeling: A. H. Shabelansky<sup>1</sup>, K. Nihei<sup>1</sup>, G. Fradelizio<sup>2</sup>, S. Tracey<sup>2</sup>, D. Bevc<sup>1</sup> (1. Chevron Inc.; 2. Chevron Canada Resources)

#### Theme 7: New Approaches, Workflows, and Best Practices; Case Study Examples III

Room 370

Co-Chairs: X. Lyu, B. Yuan, W. Zhang and M. Zhou

- 10:45 Introductory Remarks
- 10:50 **Natural Fracture Presence Prediction in Unconventional Reservoirs** Using Machine Learning and Geostatistical Methods - Workflow and HFTS1 Case: P. C. Eze, L. Y. Hu (Berg-Hughes Center, Texas A&M University)
- **Reduced-Order Models for Wellbore Leakage From Depleted Reservoirs:** M. Mehana, B. Chen, R. Pawar (Los Alamos National Lab)
- Machine-Learning-Based Completion Optimization Workflow for Multi-Bench Development in the Midland Basin: J. Park, T. Wien, K. Smith, C. Nwabuoku, R. Gordillo (Occidental Petroleum)

#### Theme 9: EUR and Performance Prediction: **Decline Curve Analysis and Beyond II**

Room 371

Co-Chairs: J. Daal, A. Ellafi and A. Ramkhelawan

- 10:45 **Introductory Remarks**
- 10:50 A Deep Learning Framework for Multi-Horizon Probabilistic Production Forecasting in Unconventional Reservoirs: R. Thavarajah, H. Darabi\*, N. Ruta, A. Salehi, A. Kianinejad (QRI)
- 11:15 Understanding the Spacing, Completions, and Geological Influences on Decline Rates and B Values: D. Niederhut, A. Cui, C. Macalla, J. Reed (Novi Labs)
- Repeat DAS and DTS Production Logs on a Permanent Fiber Optic Cable for Evaluating Production Changes and Interference with Offset Wells: V. Mahue<sup>1</sup>, E. Jimenez<sup>1</sup>, P. Dawson<sup>1</sup>, K. Trujillo\*<sup>2</sup>, R. Hull<sup>2</sup> (1. Silixa House Silixa; 2. Silixa USA)

## **WEDNESDAY TECHNICAL PROGRAM**

### **Wednesday Afternoon**

**Special Session: Best of ARMA** 

Room 351

Co-Chairs: A. Ghassemi and J. McLennan

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

- Yunhui Tan, Research Scientist, Chevron
- Chris Sherman, Staff Scientist, Lawrence Livermore National Laboratory
- Laurent Louis, Principal Scientist, New England Research
- Ghazal Izadi, Vice President, Reservoir Management and Market Strategy, Geothermal Solutions, LLC

## Theme 1: Well Spacing to Field Development and Stacked Pay Development Strategies – Bakken

Room 360

Co-Chairs: C. Cipolla, T. Jiang and A. Shannon

1:45 Introductory Remarks

1:50 Accelerating Development Optimization in the Bakken Using an



Integrated Fracture Diagnostic Pilot: Y. Liang<sup>2</sup>, H. Meier<sup>2</sup>, K. Śrinivasan<sup>3</sup>, H. Tahir<sup>3</sup>, A. Ortega<sup>1</sup>, K. Amalokwu<sup>2</sup>, J. Friedrich<sup>3</sup>, J. Okpala<sup>3</sup>, K. Decker<sup>2</sup>, M. Brown<sup>3</sup>, T. Benish<sup>2</sup>, H. Settles<sup>3</sup>, P. Bhargava<sup>2</sup>, P. Sumant<sup>3</sup>, J. Reavis<sup>1</sup> (1. ExxonMobil Upstream Integrated Solutions Company; 2. ExxonMobil Upstream Research Company; 3. XTO Energy Inc.)

2:40 Bakken Well Production Interference Test Analysis: M. Kasumov, Y. Liu\*,



A. Farthing, M. Miranda, A. El Attar (ConocoPhillips)

### Theme 3: International and Emerging

**Challenges of Unconventional Resources** 

Room 361

Co-Chairs: D. Hume and D. Valleau

- 1:45 Introductory Remarks
- 1:50 Regional Characterization of Caprock Seals Associated with Flowback Disposal Injection and Hydraulic Fracturing Barriers: F. A. Lozano, N. P. Rubio, M. F. Segovia, M. Marentes, G. Suarez, N. K. Marfisi, A. M. López (Ecopetrol)
- 2:15 Neogene Aquifers of the Middle Magdalena Valley: A New Frontier for the Use of Undrinkable Water in the Development of Unconventional Resources: J. A. Sáchica¹, F. Cardona¹, M. F. Segovia², J. M. Martinez¹ (1. Ecopetrol)
- 2:40 Uncovering the Gas Potential of the Paraná Basin, Brazil: P. P. De Lugao¹², B. Kriegshäuser¹², E. Corrêa²¹, A. Menezes², K. Gomes², I. Santos², L. Carvalho², U. Travaglia² (1. Strataimage Energy Services; 2. Strataimage Consultoria Ltda)
- 3:05 A Complete Play Analysis of the Gulf Coast Basin Onshore (TX, LA, AR, MS, AL, FL, USA): P. Chungkham, J. Roberts (S&P Global Commodity Insights)

#### **Theme 8: Enhanced Recovery**

Room 370

Co-Chairs: H. Kalaei, D. Ooi and A. Recio

- 1:45 Introductory Remarks
- 1:50 Experimental Evaluation of Huff and Puff EOR Mechanisms in Unconventional Rock: S. Alzobaidi, P. Kortunov, S. S. Chhatre, A. Chen, K. Guice, K. Baier, M. Messner, J. Leiphart, L. Laverick, R. Longoria, J. Valenza. S. Meier. J. Rainev (ExxonMobil)
- 2:15 Experimental Investigation of Gas Injection Performance with Different Fluid Types: J. Soliz, K. Enab, I. A. Lopez, Y. O. Elmasry\* (Texas A&M International University)
- 2:40 Investigation of Produced Gas Injection in the Bakken for Enhanced Oil Recovery Considering Well Interference: L. Jin¹, B. Kurz¹, X. Wan¹, M. Ardali², J. Zhao¹, J. He¹, S. Hawthorne¹, A. Boualam¹, Y. Yu¹, D. Morris² (1. Energy & Environmental Research Center; 2. ExxonMobil Corporation)
- 3:05 Dual Lateral Well Gas Injection Techniques to Improve CO<sub>2</sub> Storage and Oil Recovery in Shale Oil Reservoirs: I. A. Lopez, K. Enab, Y. O. Elmasry\* (Texas A&M International University)

## Theme 9: Production Diagnostics — Understanding the Big Picture on Production Forecasting

Room 371

Co-Chairs: D. Jones, P. Sainani and P. Sharma

- 1:45 Introductory Remarks
- 1:50 Impact of Flow Regimes, Well Operating Conditions, and Completion Heterogeneity on Producing Gas-Oil Ratio Implications for Well Performance in Unconventional Reservoirs: D. S. Fulford<sup>3</sup>, H. Behmanesh<sup>1</sup>, C. Clarkson\*<sup>1</sup>, T. Blasingame<sup>2</sup> (1. University of Calgary; 2. Texas A&M University; 3. ARM Energy)
- 2:15 Quantifying the EUR Impact Associated to Drawdown Management Strategies: A. Terminiello, P. Crespo (Pan American Energy)
- 2:40 Improving Analytical Flowing Material Balance Workflow Considering Formation Water Production: S. Lim, V. Muralidharan, S. Esmaili (Occidental Petroleum Corp.)
- 3:05 Numerical RTA Extended to Complex Fracture Systems: M. Carlsen, C. H. Whitson (Whitson AS)

\* Denotes presenter other than first author. denotes a team presentation. denotes LiveVoice sessions. Headphones required.

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## **TECHNICAL PROGRAM ALTERNATES**

Please see the Digital Conference Proceedings to view all the Technical Program Alternates full manuscripts.

Theme 1: Case Studies Highlighting the Multidisciplinary Approach to Exploration, Appraisal, Pilot Tests, and Development

- Application of Flowing Material Balance to Estimate Fillup in Saltwater Disposal Reservoirs: G. Jimenez (Chevron)
- Accelerating Field Optimization for Shell in the Neuqun Basin Using Novi Labs Machine Learning Models and Data Analytics: S. McEntyre<sup>1</sup>, P. Zannitto<sup>2</sup>, C. Kosa<sup>1</sup>, T. Cross<sup>1</sup> (1. Novi Labs; 2. Shell Compania Argentina De Petroleo S.A.)

#### **Theme 2: Advanced Formation Evaluation**

- Characterizing "Bubble Point Death (BPD)" Through Geochemical and PVT Analysis - Northwestern Delaware Laterals with High Gas to Oil Ratio (GOR) as Examples: M. Hale², C. Flenthrope², B. Dombroski², S. Wu\*¹, L. Lu¹, A. Sneddon³ (1. Power Energy and Environmental Research Institute; 2. NOVO Oil and Gas; 3. MidCon Well Logging, Paladin Geological Services)
- The Significance of Accessory Minerals in Source Rocks: A Provenance Study of the Origin of Anatase and Pyrite and Their Relationship to the Chemistry of Organic Matter: D. Jacobi, J. M. Longo, J. Rodriguez (Aramco Houston Research Center)
- Reservoir Characterization and Fluid Typing Identification of Tight Carbonate Reservoir by Using High-Resolution Electrical Image Logs:
   A Case Study of Central Sichuan Basin, China: Y. Wu¹, Q. Lai¹, K. Li\*²,
   Z. Wang¹, J. Mo², Y. Wang², F. Pan², J. Wu², X. Zhao², H. Su³
   (1. PetroChina Southwest Oil and Gas Company; 2. Schlumberger;
   3. China National Logging Corporation)
- Comprehensive Laboratory Evaluation of Reservoir Rock Properties on Drill Cuttings Using High Frequency NMR Spectroscopy: A. Mathur, S. Ali, W. VonGonten, M. Ali, C. Belanger, R. Kumar, I. Andrade, S. Lopez (WDVG Labs)
- Experimental Evaluation of Enhanced Tight Oil Recovery Performance by Microbubble CO<sub>2</sub> and Microbubble Rich Gas in North Dakota Plays: Y. Yu<sup>1</sup>, C. Beddoe<sup>1</sup>, Z. Xue<sup>2</sup>, A. Chakhmakhchev<sup>1</sup>, J. Hamling<sup>1</sup>, S. Smith<sup>1</sup>, B. Kurz<sup>1</sup> (1. Energy and Environmental Research Center; 2. The Research Institute of Innovative Technology for the Earth)
- Multi-Level of Fracture Network Imaging: A HFTS Use Case and Knowledge Transferring: G. Liu (National Energy Technology Laboratory)

## Theme 3: Geological Characterization and Evaluation Spanning the E&P Lifecycle

- The Role of Geomodelling to Optimize Unconventionals Development in the AI Era Examples From an Operator Perspective: R. M. Aguilar (Repsol SA)
- Prospectivity Assessment of Bazhenov Formation Using Cutting-Edge Integrated Static Model: A. Ugryumov¹, D. Petrova¹, I. Sannikova¹, A. Kasyanenko¹, M. Khachaturyan², A. Kolomytsev¹, T. Yuschenko¹, B. Plotnikov¹, I. Karimov¹ (1. Gazpromneft - Technological Partnerships LLC; 2. Gazpromneft - Palyan LLC)

#### **Theme 4: Geophysical Reservoir Analysis**

- Machine Learning Applications for Reservoir Pressure Trend Prediction in Potash Area of Delaware Basin: 0. T. Ajibola¹, J. Sheng¹, P. McElroy¹, E. Ulna² (1. Texas Tech University; 2. Bureau of Land Management)
- Earthquake Detection and Focal Mechanism Calculation Using Artificial Intelligence: S. Quimby, Y. Zhao, J. Zhang (GeoTomo)
- Fracture Diagnostics in Naturally Fractured Formations: An Efficient Geomechanical Microseismic Inversion Model: M. Cao, M. Sharma (The University of Texas at Austin)
- Looking Fractures Around the Wellbore First Successful Azimuthal Dipole Sonic Imaging in Carbonate Horizonal Well in China: B. Liu (Schlumberger China)
- Unconventional Reservoir Flow Assessment Using Spectral Acoustics and Numerical Temperature Modelling: M. Volkov (TGT Oilfield Services)

#### Theme 5: Geomechanics - The Intersection of Geoscience and Engineering

- Impact of Well Placement in Enhanced Geothermal Systems:
   M. Cao, M. Sharma (The University of Texas at Austin)
- New Discrete Fracture Networks (DFN) Model with Coupled Geomechanics and Fluid Flow: P. Panja, R. Velasco, P. Asai, M. Deo (University of Utah)

## Theme 6: Subsurface Geochemistry including Rock-Fluid and Fluid-Fluid Interactions

- Effect of Hydrogen Exposure on Shale Reservoir Properties and Evaluation of Hydrogen Storage Possibility in Depleted Unconventional Formations: E. Bechara, T. Gamadi, A. Hussain, H. Emadibaladehi (Texas Tech University)
- Quantifying the Impact of Geochemistry on the Interfacial Interactions of Kerogen and Water and its Impact on Fluid Mobility:
   A. Jagadisan, Z. Heidari (University of Texas at Austin)
- Water Fingerprinting: Rescuing an Old Methodology to Evaluate Brine Compatibility and Production Allocation: Y. C. Araujo, J. Swearingen (SGS North America Inc.)

#### **Theme 7: Applications of Data Science**

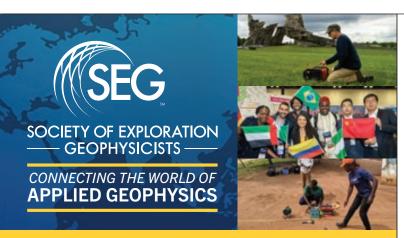
- From WHP to BHP Using Machine Learning in Multi-Fractured Horizontal Wells of the Vaca Muerta Formation: A. Terminiello, P. Crespo, M. Nasca, J. Filipich, D. McIntyre (Pan American Energy)
- Comparison of Machine Learning and Statistical Predictive Models for Production Time Series Forecasting in Tight Oil Reservoirs:
   H. Rahmanifard, I. D. Gates, A. Shabib-Asl (University of Calgary)
- Application of Unsupervised-Manifold-Learning for Productivity Driver Evaluation and Production Forecasting in Unconventional Oil Reservoirs: Y. Gao<sup>5</sup>, Y. Pan<sup>1</sup>, J. Qin<sup>4</sup>, E. Qiu<sup>4</sup>, W. Ma\*<sup>2</sup>, R. Bi<sup>3</sup> (1. PetroChina Exploration & Production Company; 2. Texas A&M University; 3. PetroChina Research Institute of Petroleum Exploration & Development; 4. Xinjiang Oilfield Company; 5. China University of Petroleum)
- Real Time Torque and Drag Analysis by Combining of Physical Model and Machine Learning Method: K. K. Bai, H. Fan, H. Zhang, F. Zhou, X. Tao (China University of Petroleum)
- Using Artificial Intelligence and Machine Learning to Assist in Completion Design of Unconventional Reservoirs: C. Palmer, M. Gu\* (West Virginia University)
- Automated Well Top Picking and Reservoir Property Analysis of the Belly River Formation of the Western Canada Sedimentary Basin:
   B. Zhang¹, T. Ye¹, Y. Xiao¹, D. Li², G. Wang², C. Su², T. Yao³
   (1. SINOPEC Exploration and Production Research Institute;
   2. SINOPEC International Petroleum Exploration and Production Corporation;
   3. Energy Science Service & Consulting Associates)

#### Theme 8: Unlocking the Production and Recovery Potential

- Numerical Simulation of the Impact of Coal Anisotropy on CO<sub>2</sub>
   Sequestration in Deep Mannville Coal Seams: Y. Yang<sup>1</sup>, C. Clarkson<sup>1</sup>,
   H. Hamdi<sup>1</sup>, A. Ghanizadeh<sup>1</sup>, M. S. Blinderman<sup>2</sup>, C. Evans<sup>2</sup> (1. University of Calgary; 2. Cvictus Inc.)
- Completions Fluid Testing Workflow to Optimize Chemical Selection for Better Productivity or Reduce Completions Costs: R. Kumar, S. Ali, A. Mathur, W. Von Gonten, C. Belanger, B. Burke, S. Lopez (WD Von Gonten LLC)
- Feasibility of Application of Thermal Shocking by In-Situ Generation of Hot N<sub>2</sub>/CO<sub>2</sub> for Development of Unconventional Reservoirs: M.
   Rezaei Koochi (Kazan Federal University)
- Impact of Soaking Time on the Efficacy of Miscible Gas Injection Into Hydraulically Fractured Shale Wells: R. Sahai, R. G. Moghanloo (University of Oklahoma)
- Proppant Transport in Main-Secondary-Tertiary Fracture System in Shale Reservoirs: B. Zeng², Y. Bai¹, Y. Song², X. Guo², X. Zhou², H. Huang², C. Shen², X. Hu\*¹, F. Zhou¹ (1. China University of Petroleum-Beijing; 2. Petro China Southwest Oil & Gasfield Company)

#### Theme 9: Reserves Estimation and Production Forecasting

- The Pandemic Shut-In: Reactivating Wells Shut-In in Spring 2020
   The Impact on 10-Year Forecast and EUR Outlook: A Duvernay Oil Case Study: A. M. Renaud (geoLOGIC Systems Ltd.)
- Viable Solutions to Overcome Weaknesses of Deep Learning Applications in Production Forecasting: A Comprehensive Review: Y. Kocoglu, S. Gorell (Texas Tech University)
- Modeling Unconventional Reservoirs Using a Graph Network Model:
   Z. Guo, S. Sankaran (Xecta Digital Labs.)

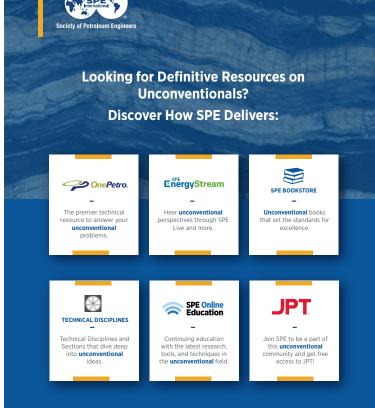


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# SPEAKER CROSS REFERENCE

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Name	Day	Time	Location	Session Title
Abdelkarim, Abdallah	Tue	9:45 am	Room 360	Theme 3: Emerging Geological Evaluations, Tools, and Workflows for Prospectivity Assessment I
Adejare, Oladapo	Mon	2:40 pm	Exhibition Hall - Station C	Theme 8: Production Evaluation
Agapiou, Kyriacos	Tue	4:35 pm	Room 371	Theme 8: Completion Technologies
Aguilera, Roberto	Tue	2:15 pm	Exhibition Hall - Station C	Theme 8: Reservoir Engineering
Ahmadi, Kaveh	Wed	10:45 am	Room 351	Panel Session: Leveraging Technology to Maximize Reservoir Recovery in Maturing Unconventional Plays
Akkurt, Ridvan	Mon	4:10 pm	Exhibition Hall - Station A	Theme 2: High and Low Field NMR Applications and Reservoir Quality Improvement II
Albrecht, Magdalene	Tue	10:50 am	Room 371	Theme 5: Production Simulation and Forecasting
Albrecht, Magdalene	Tue	2:40 pm	Room 370	Theme 6: Drainage Diagnostics and Applications in Asset Development II
Alharthi, Amena	Tue	8:55 am	Room 360	Theme 3: Emerging Geological Evaluations, Tools, and Workflows for Prospectivity Assessment I
Althaus, Stacey	Mon	1:50 pm	Room 361	Theme 2: High and Low Field NMR Applications and Reservoir Quality Improvement I
Alzobaidi, Shehab	Wed	1:50 pm	Room 370	Theme 8: Enhanced Recovery
Amadi, Samuel	Mon	2:15 pm	Exhibition Hall - Station C	Theme 8: Production Evaluation
Aniemena, Chigozie	Mon	1:50 pm	Room 360	Theme 1: Applying New Operational Techniques to Improve Well Performance
App, Jeff	Tue	5:00 pm	Room 371	Theme 8: Completion Technologies
Aranguren, Cristhian	Tue	1:50 pm	Room 371	Theme 7: Applications in Reserves Estimation and Production Forecasting
Bachleda, Jana	Wed	9:20 am	Room 370	Theme 6: Geochemical Technologies and Methods
Bacho, Sarah	Tue	8:25 am	Room 351	Special Session: Refracs, Worth It or Not? Devon and the DOE Demonstrate
Barba, Robert	Tue	4:10 pm	Room 371	Theme 8: Completion Technologies
Barrie, Craig	Tue	8:30 am	Room 361	Theme 6: Drainage Diagnostics and Applications in Asset Development I
Barzin, Yalda	Tue	2:40 pm	Exhibition Hall - Station A	Theme 2: Rock-Fluid and Fluid-Fluid Interactions PVT Data Acquisition/Analysis
Battula, Arvind	Mon	3:40 pm	Room 351	Panel Session: Data Science in Oil and Gas: How Far Have We Come and Where are We Headed?
Behzadi, Hamid	Tue	4:35 pm	Room 360	Theme 1: Understanding Well Spacing and Well Interference in the Delaware and Marcellus
Ben, Yuxing	Tue	11:15 am	Exhibition Hall - Station C	Theme 7: New Approaches, Workflows, and Best Practices; Case Study Examples I
Berg, Mark	Mon	10:00 am	General Assembly	Plenary Session: Executive Perspectives
Blasingame, Thomas	Tue	3:45 pm	Exhibition Hall - Station B	Theme 9: Well Spacing and Well Interference Impact
Bohn, Robert	Mon	2:40 pm	Exhibition Hall - Station A	Theme 4: Measuring Downhole Stress and Strain
Booterbaugh, Aaron	Wed	11:15 am	Room 361	Theme 4: Leveraging New Trends in Microseismic
Booth, T. Ryder	Mon	10:00 am	General Assembly	Plenary Session: Executive Perspectives
Borell, Jarret	Tue	8:25 am	Room 351	Special Session: Refracs, Worth It or Not? Devon and the DOE Demonstrate
Brady, Katura	Tue	3:45 pm	Room 360	Theme 1: Understanding Well Spacing and Well Interference in the Delaware and Marcellus
Burton, Mac	Mon	3:40 pm	Room 351	Panel Session: Data Science in Oil and Gas: How Far Have We Come and Where are We Headed?
Byers, Deborah	Mon	8:15 am	General Assembly	Plenary Session: Unconventionals: A Bridge to the Future
Calad Serrano, Carlos	Mon	5:00 pm	Exhibition Hall - Station C	Theme 7: Subsurface Characterization, Applied Case Studies, and Business Implementation
Campbell, Matt	Tue	8:30 am	Room 360	Theme 3: Emerging Geological Evaluations, Tools, and Workflows for Prospectivity Assessment I
Carlsen, Mathias	Wed	3:05 pm	Room 371	Theme 9: Production Diagnostics — Understanding the Big Picture on Production Forecasting
Casey, Brian	Tue	2:15 pm	Room 360	Theme 3: Geologic Drivers for Assessing Acreage
Cecconi, Bianca	Wed	8:55 am	Room 370	Theme 6: Geochemical Technologies and Methods
Chakhmakhchev, Alexander	Tue	8:55 am	Room 370	Theme 7: Impact to Drilling and Completion(s)
Chan, Septriandi	Tue	11:15 am	Exhibition Hall - Station A	Theme 3: Emerging Geological Evaluations, Tools, and Workflows for
•				Prospectivity Assessment II Theme 4: Measuring Downhole Stress and Strain
Chan Hangquan	Mon	2:15 pm	Exhibition Hall - Station A	
Chen, Hongquan	Tue	9:20 am	Room 360	Theme 3: Emerging Geological Evaluations, Tools, and Workflows for Prospectivity Assessment I

Damjanac, Branko

Daneshy, Ali Darabi, Hamed





Cheraghi, Yasaman	Tue	10:50 am	Room 361	Theme 3: Application of Geological Tools to Unlock Added Value
Cherian, Bilu	Tue	5:00 pm	Room 360	Theme 1: Understanding Well Spacing and Well Interference in the Delaware and Marcellus
Chungkham, Prithiraj	Wed	3:05 pm	Room 361	Theme 3: International and Emerging Challenges of Unconventional Resources
Clarkson, Christopher	Mon	5:00 pm	Room 371	Theme 8: Case Studies
Clarkson, Christopher	Wed	1:50 pm	Room 371	Theme 9: Production Diagnostics — Understanding the Big Picture on Production Forecasting
Comisky, Joe	Tue	8:25 am	Room 351	Special Session: Refracs, Worth It or Not? Devon and the DOE Demonstrate
Compton, Sarah	Mon	4:35 pm	Room 360	Theme 1: Recognizing and Adapting to the Dynamics of Field Development
Cornelio, Jodel	Tue	11:15 am	Exhibition Hall - Station D	Theme 9: Type Well Profiles, Early Data Estimates, and Impacts of Lifecycle Updates
Cross, Ted	Tue	11:40 am	Exhibition Hall - Station A	Theme 3: Emerging Geological Evaluations, Tools, and Workflows for Prospectivity Assessment II
Cross, Ted	Tue	2:40 pm	Room 361	Theme 5: Geomechanics in Field Development (Well Placement, Drawdown, and Optimization)
Cui, Alexander	Tue	2:15 pm	Room 371	Theme 7: Applications in Reserves Estimation and Production Forecasting
Curtis, Mark	Tue	5:00 pm	Exhibition Hall - Station A	Theme 2: Pore-Network Imaging and Fluid Flow Modeling
Dalkhaa, Chantsalmaa	Tue	3:45 pm	Exhibition Hall - Station C	Theme 5: Infill Drilling and Refracturing; Applications and Lessons Learned

and Optimization)

Beyond II

Dash, Sabyasachi Wed 9:45 am Room 361

Tue

Tue

Wed

1:50 pm

10:45 am

10:50 am

Room 361

Room 351

**Room 371** 

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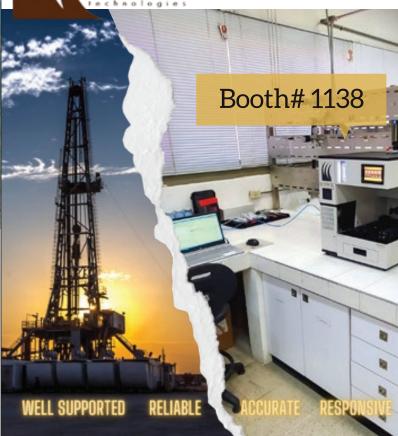
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Theme 5: Geomechanics in Field Development (Well Placement, Drawdown,

Theme 9: EUR and Performance Prediction: Decline Curve Analysis and

Panel Session: Cracking the Code of Fracture Driven Interaction

Theme 2: Emerging Petrophysical Evaluations



of innovation



De Lugao, Patricia	Wed	2:40 pm	Room 361	Theme 3: International and Emerging Challenges of Unconventional Resources
Dhuldhoya, Karan	Tue	3:45 pm	Room 371	Theme 8: Completion Technologies
Dindoruk, Birol	Wed	10:45 am	Room 351	Panel Session: Leveraging Technology to Maximize Reservoir Recovery in Maturing Unconventional Plays
Dolan, Michael	Tue	9:45 am	Room 361	Theme 6: Drainage Diagnostics and Applications in Asset Development I
Dombroski, Brian	Tue	8:55 am	Room 371	Theme 9: EUR and Performance Prediction: Decline Curve Analysis and Beyond I
Dommisse, Robin	Mon	1:45 pm	Room 351	Special Session: Geomodelling Unconventionals: Bringing Geomodeling Into 2022 Using Data Analytics
Eisner, Leo	Wed	10:50 am	Room 361	Theme 4: Leveraging New Trends in Microseismic
Elekwachi, Adaobi	Tue	11:15 am	Room 361	Theme 3: Application of Geological Tools to Unlock Added Value
Elmasry, Youssef	Wed	2:15 pm	Room 370	Theme 8: Enhanced Recovery
Elmasry, Youssef	Wed	3:05 pm	Room 370	Theme 8: Enhanced Recovery
Esmaeilzadeh, Zahra	Tue	4:10 pm	Room 361	Theme 5: Rock and Hydraulic Fracture Modelling III
Eze, Peace	Wed	10:50 am	Room 370	Theme 7: New Approaches, Workflows, and Best Practices; Case Study Examples III
Fairuzov, Yuri	Mon	3:45 pm	Exhibition Hall - Station D	Theme 8: Production Systems
Fensky, Charles	Mon	1:50 pm	Room 371	Theme 8: Novel Production Technologies
Finley, Mark	Mon	8:15 am	General Assembly	Plenary Session: Unconventionals: A Bridge to the Future
Firincioglu, Tuba	Tue	11:40 am	Room 371	Theme 5: Production Simulation and Forecasting
Fuller, Brian	Tue	11:15 am	Room 370	Theme 4: Downhole Fracture Quantification
Gagliardi, Max	Tue	3:40 pm	Room 351	Panel: The Inevitable Intersection of the O&G Industry and Bitcoin Mining
Ghassemi, Ahmad	Tue	4:35 pm	Room 361	Theme 5: Rock and Hydraulic Fracture Modelling III
Gonzalez, Cristian	Mon	4:10 pm	Room 371	Theme 8: Case Studies
Greene, James	Mon	4:10 pm	Room 361	Theme 2: Advances in Special Core Analysis and Core-Flood Testing
Guerrero, Javier	Tue	4:35 pm	Exhibition Hall - Station A	Theme 2: Pore-Network Imaging and Fluid Flow Modeling
Gupta, Neeraj	Tue	1:45 pm	Room 351	Panel: Carbon Capture and Energy Storage Today: A Burgeoning Industry or Still a Future Promise?
Haby III, Hayden Griffin	Tue	3:40 pm	Room 351	Panel: The Inevitable Intersection of the O&G Industry and Bitcoin Mining
Haffener, Jackson	Tue	8:25 am	Room 351	Special Session: Refracs, Worth It or Not? Devon and the DOE Demonstrate
HajNasser, Yesser	Tue	11:40 am	Room 370	Theme 4: Downhole Fracture Quantification
Hakala, Alexandra	Tue	4:10 pm	Exhibition Hall - Station D	Theme 6: Impacts and Lessons Learned of Rock-Fluid and Fluid-Fluid Interactions
He, Jia	Mon	3:45 pm	Exhibition Hall - Station B	Theme 5: Rock and Hydraulic Fracture Modelling II
Henry, Amy	Mon	8:15 am	General Assembly	Plenary Session: Unconventionals: A Bridge to the Future
Holubnyak, Eugene	Tue	1:45 pm	Room 351	Panel: Carbon Capture and Energy Storage Today: A Burgeoning Industry or Still a Future Promise?
Hu, Xiaodong	Tue	3:45 pm	Room 361	Theme 5: Rock and Hydraulic Fracture Modelling III
Hudson, Rachel	Mon	4:10 pm	Exhibition Hall - Station C	Theme 7: Subsurface Characterization, Applied Case Studies, and Business Implementation
Hussenoeder, Stefan	Wed	8:25 am	Room 351	Panel Session: Risk and Mitigation of Induced Seismicity
Ibrahim, Mazher	Mon	4:35 pm	Room 371	Theme 8: Case Studies
Irvin, Rohan	Tue	2:15 pm	Room 361	Theme 5: Geomechanics in Field Development (Well Placement, Drawdown, and Optimization)
Izadi, Ghazal	Wed	1:45 pm	Room 351	Special Session: Best of ARMA
Jacques, Antoine	Tue	9:45 am	Room 370	Theme 7: Impact to Drilling and Completion(s)
Jha, Himanshu	Tue	8:30 am	Room 371	Theme 9: EUR and Performance Prediction: Decline Curve Analysis and Beyond I
Jha, Himanshu	Tue	10:50 am	Exhibition Hall - Station D	Theme 9: Type Well Profiles, Early Data Estimates, and Impacts of Lifecycle Updates
Jha, Himanshu	Tue	11:40 am	Exhibition Hall - Station D	Theme 9: Type Well Profiles, Early Data Estimates, and Impacts of Lifecycle Updates
Jimenez, Anthony	Tue	1:50 pm	Exhibition Hall - Station C	Theme 8: Reservoir Engineering
Jin, Lu	Wed	2:40 pm	Room 370	Theme 8: Enhanced Recovery
Jin, Yuesu	Tue	2:15 pm	Exhibition Hall - Station D	Theme 4: Rock Mechanics
Johnson, Kirk	Mon	10:00 am	General Assembly	Plenary Session: Executive Perspectives







Kakadjian, Sarkis	Mon	4:10 pm	Exhibition Hall - Station D	Theme 8: Production Systems
Ketter, Chris	Tue	8:25 am	Room 351	Special Session: Refracs, Worth It or Not? Devon and the DOE Demonstrate
Kilb, Justin	Tue	8:30 am	Room 370	Theme 7: Impact to Drilling and Completion(s)
Ko, Lucy Tingwei	Tue	2:40 pm	Exhibition Hall - Station B	Theme 3: What's in Your Rock: Geological Integration that Impacted Go-Forward Business Decisions
Kornacki, Alan	Tue	11:40 am	Exhibition Hall - Station B	Theme 6: Source Rock Evaluation: Characterization, Saturation, and Producibility
Kryvenko, Serhii	Mon	2:40 pm	Exhibition Hall - Station B	Theme 5: Rock and Hydraulic Fracture Modelling I
Kuroda, Shintaro	Mon	3:45 pm	Room 371	Theme 8: Case Studies
Laalam, Aimen	Tue	4:35 pm	Room 370	Theme 7: New Approaches, Workflows, and Best Practices; Case Study Examples II
Lam, Duc	Tue	10:45 am	Room 351	Panel Session: Cracking the Code of Fracture Driven Interaction
Laudon, Carolan	Mon	2:40 pm	Room 370	Theme 4: Value-Driven Seismic Attributes
Lazar, Raffik	Mon	1:45 pm	Room 351	Special Session: Geomodelling Unconventionals: Bringing Geomodeling Into 2022 Using Data Analytics
Leach, David	Tue	3:45 pm	Exhibition Hall - Station D	Theme 6: Impacts and Lessons Learned of Rock-Fluid and Fluid-Fluid Interactions
Lee, Jaewook	Tue	1:50 pm	Exhibition Hall - Station D	Theme 4: Rock Mechanics
Lee, Robert	Tue	10:50 am	Exhibition Hall - Station A	Theme 3: Emerging Geological Evaluations, Tools, and Workflows for Prospectivity Assessment II
Leggett, Smith	Mon	1:50 pm	Exhibition Hall - Station A	Theme 4: Measuring Downhole Stress and Strain
Lerza, Alejandro	Wed	11:40 am	Room 360	Theme 1: Improving Our Understanding on Well Completion Performance and Flow Analysis
Letourneur, Martin	Tue	2:40 pm	Room 371	Theme 7: Applications in Reserves Estimation and Production Forecasting
Leveille, Greg	Mon	8:15 am	General Assembly	Plenary Session: Unconventionals: A Bridge to the Future



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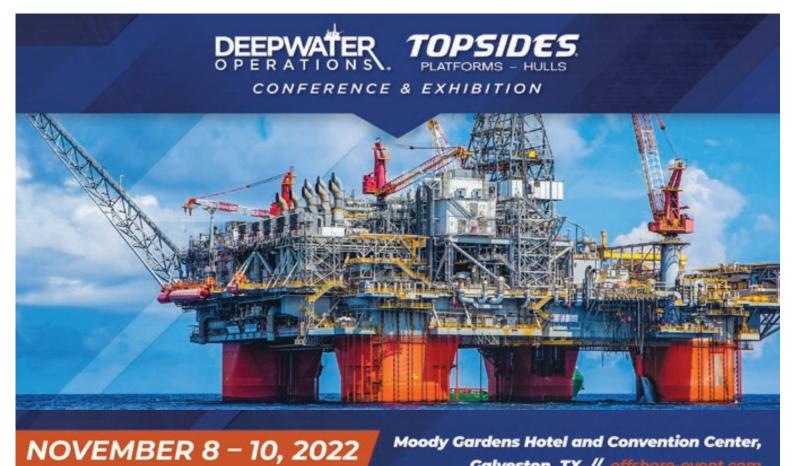
Li, Jiawei	Tue	5:00 pm	Room 361	Theme 5: Rock and Hydraulic Fracture Modelling III
Liang, Yueming	Wed	1:50 pm	Room 360	Theme 1: Well Spacing to Field Development and Stacked Pay Development Strategies - Bakken
Lim, ShiowHuoy	Wed	2:40 pm	Room 371	Theme 9: Production Diagnostics — Understanding the Big Picture on Production Forecasting
Liu, Chuxi	Mon	4:35 pm	Exhibition Hall - Station B	Theme 5: Rock and Hydraulic Fracture Modelling II
Liu, Chuxi	Tue	1:50 pm	Room 360	Theme 3: Geologic Drivers for Assessing Acreage
Liu, Faye	Tue	9:20 am	Room 361	Theme 6: Drainage Diagnostics and Applications in Asset Development I
Liu, Faye	Wed	10:45 am	Room 351	Panel Session: Leveraging Technology to Maximize Reservoir Recovery in Maturing Unconventional Plays
Liu, Guoqing	Wed	9:20 am	Room 361	Theme 2: Emerging Petrophysical Evaluations
Liu, Ying	Mon	4:10 pm	Room 360	Theme 1: Recognizing and Adapting to the Dynamics of Field Development
Liu, Yongshe	Wed	2:40 pm	Room 360	Theme 1: Well Spacing to Field Development and Stacked Pay Development Strategies - Bakken
Lo, Justin	Mon	3:40 pm	Room 351	Panel Session: Data Science in Oil and Gas: How Far Have We Come and Where are We Headed?
Louis, Laurent	Wed	1:45 pm	Room 351	Special Session: Best of ARMA
Lozano, Felipe	Wed	1:50 pm	Room 361	Theme 3: International and Emerging Challenges of Unconventional Resources
Lu, Le (Chris)	Tue	11:15 am	Exhibition Hall - Station B	Theme 6: Source Rock Evaluation: Characterization, Saturation, and Producibility
Lund Snee, Jens-Erik	Wed	8:25 am	Room 351	Panel Session: Risk and Mitigation of Induced Seismicity
Luycx, Mathilde	Wed	8:30 am	Room 361	Theme 2: Emerging Petrophysical Evaluations
Lynch, Richard	Mon	10:00 am	General Assembly	Plenary Session: Executive Perspectives
Ma, Wei	Mon	4:10 pm	Room 370	Theme 5: Diagnostics and Monitoring with Geomechanical Models
Ma, Yuanyuan	Tue	10:50 am	Room 370	Theme 4: Downhole Fracture Quantification
Macalla, Connor	Tue	2:15 pm	Exhibition Hall - Station B	Theme 3: What's in Your Rock: Geological Integration that Impacted Go-Forward Business Decisions
Maguire, Matt	Wed	8:55 am	Room 360	Theme 1: Understanding Parent-Child Relationships to Define Well Spacing for Field Development
Mahmoud, Salah El Din	Mon	1:50 pm	Room 370	Theme 4: Value-Driven Seismic Attributes
Maity, Debotyam	Tue	11:40 am	Exhibition Hall - Station C	Theme 7: New Approaches, Workflows, and Best Practices; Case Study Examples I
Mariscal Romero, Rosa	Wed	9:45 am	Room 371	Theme 9: Future of Production Forecasting: Data-Driven Models and Physics- Based Solutions II
Maxwell, Shawn	Wed	8:25 am	Room 351	Panel Session: Risk and Mitigation of Induced Seismicity
McLaughlin, John	Tue	9:20 am	Room 371	Theme 9: EUR and Performance Prediction: Decline Curve Analysis and Beyond I
Mehana, Mohamed	Wed	11:15 am	Room 370	Theme 7: New Approaches, Workflows, and Best Practices; Case Study Examples III
Mejia, Nelson	Tue	1:50 pm	Exhibition Hall - Station A	Theme 2: Rock-Fluid and Fluid-Fluid Interactions PVT Data Acquisition/Analysis
Melchert, Elena	Tue	11:40 am	Room 361	Theme 3: Application of Geological Tools to Unlock Added Value
Miranda, Carlos	Tue	10:50 am	Room 360	Theme 1: Bakken EOR, Well Performance, and Interference
Modeland, Neil	Tue	4:35 pm	Exhibition Hall - Station C	Theme 5: Infill Drilling and Refracturing; Applications and Lessons Learned
Mohd Razak, Syamil	Tue	9:45 am	Room 371	Theme 9: EUR and Performance Prediction: Decline Curve Analysis and Beyond I
Molinares-Blanco, Carlos	Tue	2:40 pm	Room 360	Theme 3: Geologic Drivers for Assessing Acreage
Muralidharan, Vivek	Tue	5:00 pm	Exhibition Hall - Station B	Theme 9: Well Spacing and Well Interference Impact
Nath, Fatick	Tue	2:40 pm	Exhibition Hall - Station D	Theme 4: Rock Mechanics
Nath, Fatick	Tue	3:45 pm	Room 370	Theme 7: New Approaches, Workflows, and Best Practices; Case Study Examples II
Niederhut, Dillon	Wed	11:15 am	Room 371	Theme 9: EUR and Performance Prediction: Decline Curve Analysis and Beyond II
Ning, Yanrui	Tue	4:35 pm	Exhibition Hall - Station B	Theme 9: Well Spacing and Well Interference Impact
Norton, George	Mon	5:00 pm	Room 360	Theme 1: Recognizing and Adapting to the Dynamics of Field Development
Omodolor, Hope	Mon	1:45 pm	Room 351	Special Session: Geomodelling Unconventionals: Bringing Geomodeling Into 2022 Using Data Analytics
Ortiz Sanguino, Laura	Wed	8:55 am	Room 361	Theme 2: Emerging Petrophysical Evaluations

## **URTeC.org**





Park, Han Young	Mon	3:45 pm	Exhibition Hall - Station C	Theme 7: Subsurface Characterization, Applied Case Studies, and Business Implementation
Park, Jaeyoung	Wed	11:40 am	Room 370	Theme 7: New Approaches, Workflows, and Best Practices; Case Study Examples III
Patience, Richard	Tue	10:50 am	Exhibition Hall - Station B	Theme 6: Source Rock Evaluation: Characterization, Saturation, and Producibility
Pei, Yanli	Mon	5:00 pm	Room 370	Theme 5: Diagnostics and Monitoring with Geomechanical Models
Pei, Yanli	Tue	4:10 pm	Exhibition Hall - Station B	Theme 9: Well Spacing and Well Interference Impact
Peng, Jing	Mon	3:45 pm	Room 360	Theme 1: Recognizing and Adapting to the Dynamics of Field Development
Peng, Sheng	Tue	2:40 pm	Exhibition Hall - Station C	Theme 8: Reservoir Engineering
Pommer, Laura	Tue	3:40 pm	Room 351	Panel: The Inevitable Intersection of the O&G Industry and Bitcoin Mining
Pospisil, Gordon	Tue	11:15 am	Room 360	Theme 1: Bakken EOR, Well Performance, and Interference
Pradhan, Yogashri	Wed	9:20 am	Room 371	Theme 9: Future of Production Forecasting: Data-Driven Models and Physics- Based Solutions II
Price, Buddy	Tue	8:25 am	Room 351	Special Session: Refracs, Worth It or Not? Devon and the DOE Demonstrate
Prochnow, Shane	Tue	10:50 am	Exhibition Hall - Station C	Theme 7: New Approaches, Workflows, and Best Practices; Case Study Examples I
Radwan, Amr	Mon	2:15 pm	Room 371	Theme 8: Novel Production Technologies
Rainbolt, Mike	Tue	10:45 am	Room 351	Panel Session: Cracking the Code of Fracture Driven Interaction
Raines, Jessica	Tue	1:45 pm	Room 351	Panel: Carbon Capture and Energy Storage Today: A Burgeoning Industry or Still a Future Promise?
Ramurthy, Muthukumarappan	Mon	1:50 pm	Exhibition Hall - Station C	Theme 8: Production Evaluation
Ravlo, Vegar	Tue	3:45 pm	Exhibition Hall - Station A	Theme 2: Pore-Network Imaging and Fluid Flow Modeling
Reasoner, David	Wed	10:50 am	Room 360	Theme 1: Improving Our Understanding on Well Completion Performance and Flow Analysis





Rogers, Steve	Mon	5:00 pm	Exhibition Hall - Station B	Theme 5: Rock and Hydraulic Fracture Modelling II
Rosen, Gilly	Tue	1:45 pm	Room 351	Panel: Carbon Capture and Energy Storage Today: A Burgeoning Industry or Still a Future Promise?
Rueda, Luis	Mon	5:00 pm	Room 361	Theme 2: Advances in Special Core Analysis and Core-Flood Testing
Sáchica, Jorge	Wed	2:15 pm	Room 361	Theme 3: International and Emerging Challenges of Unconventional Resources
Saha, Souvick	Mon	4:35 pm	Exhibition Hall - Station D	Theme 8: Production Systems
Savvaidis, Alexandro	Wed	8:25 am	Room 351	Panel Session: Risk and Mitigation of Induced Seismicity
Segovia, María	Mon	2:15 pm	Room 361	Theme 2: High and Low Field NMR Applications and Reservoir Quality Improvement I
Shabelansky, Andrey	Wed	11:40 am	Room 361	Theme 4: Leveraging New Trends in Microseismic
Sherman, Chris	Wed	1:45 pm	Room 351	Special Session: Best of ARMA
Slowinski, Matt	Wed	9:20 am	Room 360	Theme 1: Understanding Parent-Child Relationships to Define Well Spacing for Field Development
Small, Anthony	Mon	2:40 pm	Exhibition Hall - Station D	Theme 9: Future of Production Forecasting: Data-Driven Models and Physics- Based Solutions I
Smith, Christopher	Mon	4:35 pm	Exhibition Hall - Station A	Theme 2: High and Low Field NMR Applications and Reservoir Quality Improvement II
Snow, Cameron	Mon	4:35 pm	Exhibition Hall - Station C	Theme 7: Subsurface Characterization, Applied Case Studies, and Business Implementation
Song, Yishu	Wed	8:30 am	Room 370	Theme 6: Geochemical Technologies and Methods
Soroush, Hamed	Tue	1:45 pm	Room 351	Panel: Carbon Capture and Energy Storage Today: A Burgeoning Industry or Still a Future Promise?
Srinivasan, Aishwarya	Mon	3:45 pm	Room 370	Theme 5: Diagnostics and Monitoring with Geomechanical Models
Tan, Yunhui	Tue	11:15 am	Room 371	Theme 5: Production Simulation and Forecasting
Tan, Yunhui	Wed	1:45 pm	Room 351	Special Session: Best of ARMA
Terminiello, Agustín	Wed	2:15 pm	Room 371	Theme 9: Production Diagnostics — Understanding the Big Picture on Production Forecasting
Thompson, Cameron	Tue	8:25 am	Room 351	Special Session: Refracs, Worth It or Not? Devon and the DOE Demonstrate
Thompson, Leslie	Wed	8:30 am	Room 371	Theme 9: Future of Production Forecasting: Data-Driven Models and Physics- Based Solutions II
Thyme, Salem	Wed	10:45 am	Room 351	Panel Session: Leveraging Technology to Maximize Reservoir Recovery in Maturing Unconventional Plays
Trujillo, Kirk	Wed	11:40 am	Room 371	Theme 9: EUR and Performance Prediction: Decline Curve Analysis and Beyond II
Turner, Adam	Tue	2:15 pm	Room 370	Theme 6: Drainage Diagnostics and Applications in Asset Development II
Uzun, Ozan	Tue	2:15 pm	Exhibition Hall - Station A	Theme 2: Rock-Fluid and Fluid-Fluid Interactions PVT Data Acquisition/Analysis
Valenciano, Alejandro	Mon	3:40 pm	Room 351	Panel Session: Data Science in Oil and Gas: How Far Have We Come and Where are We Headed?
Valenza, John	Tue	4:10 pm	Exhibition Hall - Station A	Theme 2: Pore-Network Imaging and Fluid Flow Modeling
Vanvik, Torgeir	Mon	5:00 pm	Exhibition Hall - Station D	Theme 8: Production Systems
Velez Arteaga, Edgar Ignacio	Mon	4:35 pm	Room 370	Theme 5: Diagnostics and Monitoring with Geomechanical Models
Vera, Zahary	Mon	2:15 pm	Room 370	Theme 4: Value-Driven Seismic Attributes
Veselinovic, Dragan	Mon	3:45 pm	Exhibition Hall - Station A	Theme 2: High and Low Field NMR Applications and Reservoir Quality Improvement II
Wang, Wei	Mon	2:15 pm	Room 360	Theme 1: Applying New Operational Techniques to Improve Well Performance
Welch, Nathan	Mon	4:35 pm	Room 361	Theme 2: Advances in Special Core Analysis and Core-Flood Testing
Whisker, Vincent	Tue	3:40 pm	Room 351	Panel: The Inevitable Intersection of the O&G Industry and Bitcoin Mining
Wolfram, Edward	Wed	8:30 am	Room 360	Theme 1: Understanding Parent-Child Relationships to Define Well Spacing for Field Development
Woodruff, Olivia	Tue	8:55 am	Room 361	Theme 6: Drainage Diagnostics and Applications in Asset Development I
Wu, Ruiting	Tue	4:10 pm	Exhibition Hall - Station C	Theme 5: Infill Drilling and Refracturing; Applications and Lessons Learned
Xiao, Yuchen	Tue	4:10 pm	Room 370	Theme 7: New Approaches, Workflows, and Best Practices; Case Study Examples II
Xiao, Yuchen	Wed	8:55 am	Room 371	Theme 9: Future of Production Forecasting: Data-Driven Models and Physics- Based Solutions II
Xie, Harry	Mon	2:40 pm	Room 361	Theme 2: High and Low Field NMR Applications and Reservoir Quality Improvement I
Xie, Harry	Mon	3:45 pm	Room 361	Theme 2: Advances in Special Core Analysis and Core-Flood Testing

Xie, Harry	Mon	5:00 pm	Exhibition Hall - Station A	Theme 2: High and Low Field NMR Applications and Reservoir Quality Improvement II
Xiong, Wei	Tue	4:35 pm	Exhibition Hall - Station D	Theme 6: Impacts and Lessons Learned of Rock-Fluid and Fluid-Fluid Interactions
Yalamarty, Sai Sharan	Tue	9:20 am	Room 370	Theme 7: Impact to Drilling and Completion(s)
Yan, Chao	Mon	2:40 pm	Room 371	Theme 8: Novel Production Technologies
Yarus, Jeffrey	Mon	1:45 pm	Room 351	Special Session: Geomodelling Unconventionals: Bringing Geomodeling Into 2022 Using Data Analytics
Zalavadia, Hardikkumar	Mon	2:15 pm	Exhibition Hall - Station D	Theme 9: Future of Production Forecasting: Data-Driven Models and Physics- Based Solutions I
Zalavadia, Hardikkumar	Tue	5:00 pm	Room 370	Theme 7: New Approaches, Workflows, and Best Practices; Case Study Examples II
Zanganeh, Behnam	Mon	1:50 pm	Exhibition Hall - Station D	Theme 9: Future of Production Forecasting: Data-Driven Models and Physics- Based Solutions I
Zhang, Ganxing	Tue	1:50 pm	Room 370	Theme 6: Drainage Diagnostics and Applications in Asset Development II
Zhang, Yanbin	Mon	2:15 pm	Exhibition Hall - Station B	Theme 5: Rock and Hydraulic Fracture Modelling I
Zheng, Wei	Tue	5:00 pm	Exhibition Hall - Station C	Theme 5: Infill Drilling and Refracturing; Applications and Lessons Learned
Zhong, Chuanyao	Mon	4:10 pm	Exhibition Hall - Station B	Theme 5: Rock and Hydraulic Fracture Modelling II
Zoback, Mark	Mon	1:50 pm	Exhibition Hall - Station B	Theme 5: Rock and Hydraulic Fracture Modelling I
Zumberge, Alex	Tue	1:50 pm	Exhibition Hall - Station B	Theme 3: What's in Your Rock: Geological Integration that Impacted Go-Forward Business Decisions

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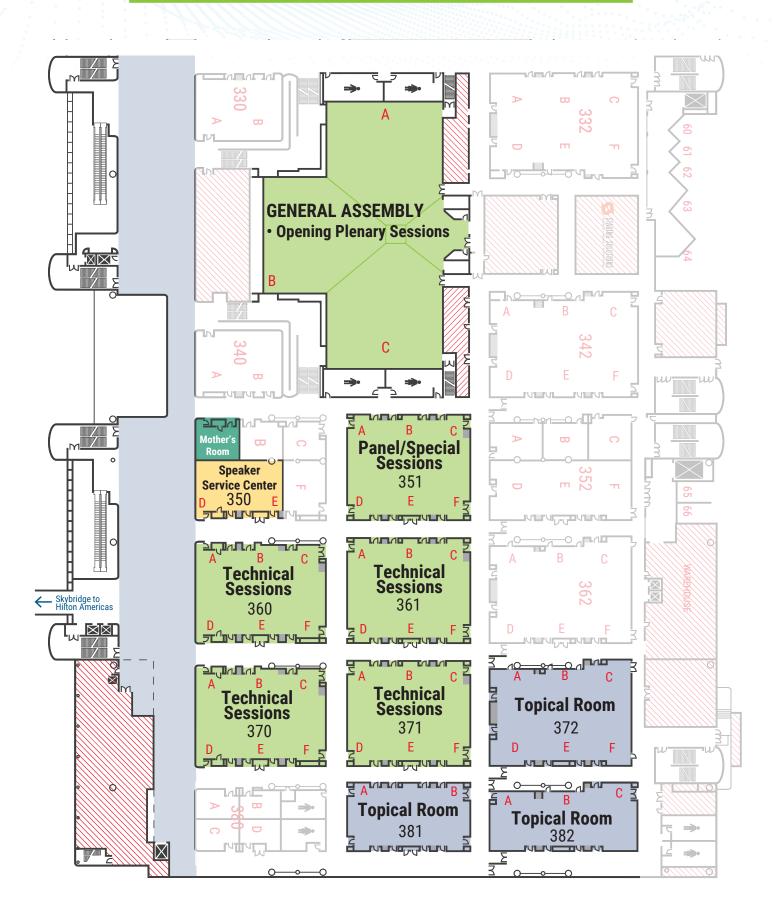
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# **TECHICAL SESSIONS FLOOR PLAN**



# U-PITCH NEW TECHNOLOGY SHOWCASE



Days: Monday-Tuesday

Times: 11:00 am-5:15 pm (15-minute presentation blocks)

(Investor/New Technology Adoption/Commercialization Panel)

**Location:** Exhibition Hall A/B, Booth 1108

Facilitators: Alan Cohen, University of Louisiana at Lafayette

Pradeep Anand, Xrathus

Mark Hamzat Erogbogbo, BD Services

# **Monday**

Monday	
PANEL OF	TECHNOLOGY SCOUTS, INVESTORS, ACCELERATORS, MORE
11:00 am	John Thurmond, Hess; Denis Potapov, DGP Capital; Bilu Cherian, Premier Oil Field Group; Hani Elshahawi, NoviDigiTech; Taha Syed Hussain, Delek
12:00 pm	Q&A and individual meetings
INDIVIDU	AL PRESENTATIONS OF NEW TECHNOLOGIES AND SERVICES
1:00 pm	Flowback: Frac Fluid Optimization Stuart Kinnear, Interface Fluidics
1:15 pm	Xrathus: Powerful Bichronous Digital Workplace Rekha Patel, Xrathus
1:30 pm	First Step Analytics Pre-Pad Sean Hervo, First Step Analytics
1:45 pm	Jointed Pipe Injector Andrew Richard, Automated Rig Technologies
2:00 pm	DataMoksha Hyper-Converged Data & Analytics Platform Sunil Garg, DataVedik
2:15 pm	ESal Reservoir Wettability Alteration Salem Thyne, Engineered Salinity
2:30 pm	Optical Swell Meter Noah Bergeron, Univ of Louisiana at Lafayette
2:45 pm	Insight Tool: Direct, Real-Time Geomx Measurements Cory Fehr, Integrity Insitu
3:00 pm	RockProp Integration of Cuttings Measurements David Hume, The Cuttings Alliance
3:15 pm	Juniper Unmanned Remote Sensing and Analytics Solutions Nathan Campbell, Juniper Unmanned
3:30 pm	Dual Comb Laser Methane Monitoring Philip Richard, LongPath
3:45 pm	Wells Recycled Demo Saeed Salehi, OU Project "Wells Recycled to Geothermal"
4:00 pm	Geodeck Visualization Platform Hamed Soroush, PetroLern
4:15 pm	EmPact Al-Enabled Pipeline Integrity Souvik Mukherjee, EmPact Al
4:30 pm	Solid/Liquid High Film Strength Fluid Lubricant Noah Bergeron, Univ of Louisiana at Lafayette
4:45 pm	Energy, Pipelines, Geospatial Analytics Platforms Sashi Gunturu, Petrabytes
5:00 pm	Reza Khastoo, Scientific Drilling

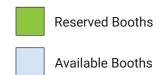
# **Tuesday**

PANEL OF T	ECHNOLOGY SCOUTS, INVESTORS, ACCELERATORS, MORE
11:00 am	Sean Kimiagar, Enverus; Amy Henry, Eunike; Arvind Sharma, Schlumberger; Alejandro Valenciano, TGS; David Tonner, Diversified Well Logging; Isaac Aviles, Schlumberger
12:00 pm	Q&A and individual meetings
INDIVIDUAL	PRESENTATIONS OF NEW TECHNOLOGIES AND SERVICES
1:00 pm	Sabata Energy Consultants Free Well Logs Bryan McDowell, Sabata
1:15 pm	<b>Geolumina Apps for Automated Classification and More</b> <i>David Thul, Geolumina Al</i>
1:30 pm	Consultants and E&P Software On-Demand.  Vitaly Kuchinskiy, Petrocubic
1:45 pm	Machine Learing Apps for Drilling Optimization Vlad Karen Payrazyan, Exebenus
2:00 pm	Effective Open Hole Logging for All Well Types Don Herman, Cordax Evaluation Technologies
2:15 pm	Energcat Technology Brian Clemishire, Enercat Technology
2:30 pm	Radio Frequency-based Detection and Quantification Technology (RF-DQT) Donald R. Redman, AMSI
2:45 pm	<b>ZoneVu</b> Peter Flanagan, UbiTerra Corporation
3:00 pm	Energia Consulting Elena Melchert, Energia Consulting
3:15 pm	Increased Flow for Shales Dale Janik, Interfluidics
3:30 pm	EOR ETC to Repressurize Reservoirs Stuart Scott, EOR ETC LLC
3:45 pm	OU Project "Wells Recycled to Geothermal" Cesar Vivas Munar, University of Oklahoma Geothermal Consortium
4:00 pm	Oceanit Breakthrough Science Products for Energy Vinod Veedu, Oceanit
4:15 pm	Geothermal Project in Baytown, Texas Bridget Silva, Criterion Energy Partners
4:30 pm	BluBird Sensors Michael Minyard, Earthview
4:45 pm	Making Dirty Oil Usable Raymond Gerard, CentriCrude Services
5:00 pm	ProFlex Technologies Revolutionary Leak Detection Kamy Tehranchi, Proflex Technologies

# **EXHIBITION HALL A/B FLOOR PLAN**

# **Exhibition Highlights**

Plan 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.

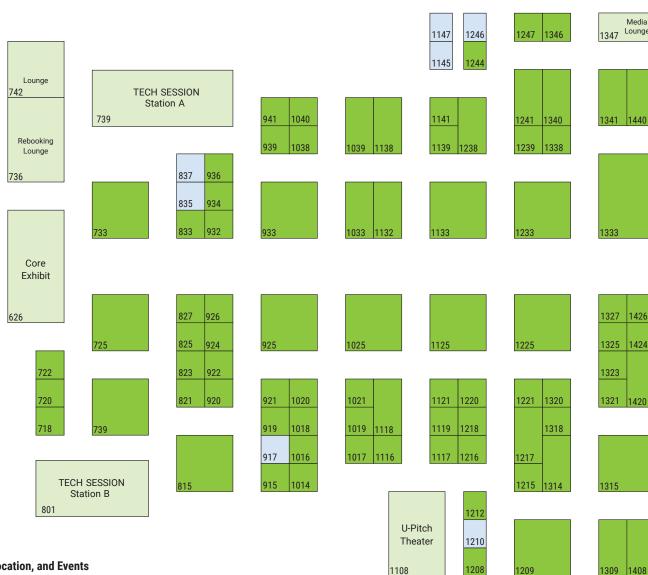


Media Lounge

1440

1426

1424



# **Exhibition Hours, Location, and Events** Location: Exhibit Halls A/B

Monday (11:00 am-6:00 pm)

- Refreshment Break at 3:00 pm
- Exhibit Hall Presentations
- Media Lounge all-day (#1347)
- U-Pitch Theater (#1108)
- Core Exhibits all-day (#626)
- Opening Reception at 5:00 pm

# Tuesday (9:00 am-6:00 pm)

- Refreshment Breaks at 10:00 am and 3:00 pm
- Exhibit Hall Presentations
- Media Lounge all-day (#1347)
- U-Pitch Theater (#1108)
- Core Exhibits all-day (#626)
- Networking Reception at 5:00 pm

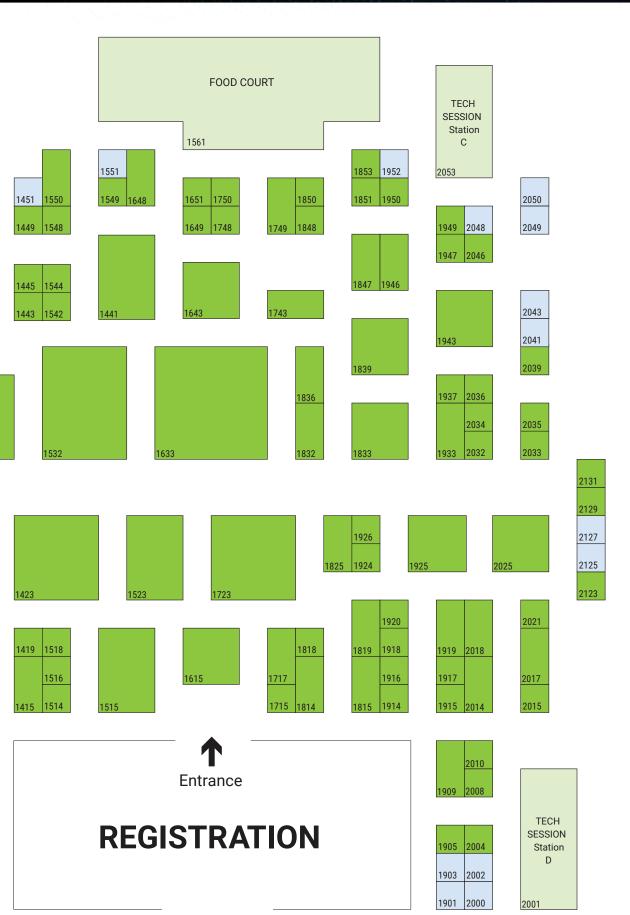
# Wednesday (9:00 am-1:00 pm)

1108

- Refreshment Break at 10:00 am
- Exhibit Hall Presentations
- Media Lounge all-day (#1347)
- U-Pitch Theater (#1108)
- Core Exhibits (#626)







# **EXHIBITORS**

(as of 8 June)

AAPG	
Actenum	2015
Advanced Upstream	1848
APEX Petroleum Engineering	1426
Applied Petroleum Technology	921
Aramco	1532
AspenTech Subsurface Science	
& Engineering	1025
Baker Hughes	1723
BHL Consulting, Inc	1514
Bluetick, Inc.	1040
Calsep	2035
Canamera Coring	936
Chemostrat	1239
Citadel Casing Solutions	2032
ClampOn, Inc	1338
Clean Chemistry	1914
Columbine Corporation	1950
ComboCurve	1033
Computer Modelling Group Inc	1909
Cordax Evaluation Technologies	1320
Core Exhibits	626
Core Laboratories	1615

Coretrax	
Corva	1839
Danomics	1020
DarkVision Technologies	1315
DataLog & GeoVision	1440
Deeprop®	1917
Diversified Well Logging	926
DiverterPlus LLC	2014
Downing USA	1119
Drill2Frac	1836
D-Tech Rotary Steerable	1851
DynaEnergetics US, Inc	1946
Dynamic Graphics, Inc	1825
Dynamic Green Solutions, LLC	2129
Earth Signal Processing Ltd	920
EcoVapor Recovery Systems LLC	1039
EDGE	1717
Enventure Global Technology	1217
Enverus	1333
ESG Solutions	1943
EV Downhole Camera	2004
Excellence Logging	1832
Exhibitor Lounge	742

Fairfield Geotechnologies	92
Field Geo Services, Inc	93
Flotek Industries	1743
Food Court	156
Frac Science Group	2040
GEODynamics	151
Geolog Americas, Inc	1949
geoLOGIC systems ltd	733
GeoMark Research	113
Geophysical Society of Houston	1010
Getech	151
Green Imaging Technologies /	
H2 Laboratories	1018
Ground Control Inc	124
GVERSE GeoGraphix	154
Haas Engineering	114
Haimo America, Inc	919
Halliburton	739
HSI Geosciences	1748
Hunting Energy Services	1750
Hydrocarbon Data Systems	
Ikon Science	192
Impac Exploration Services	201

**Exhibit** 

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Interface Fluidics		PfP Industries, LLC		Stratagraph, Inc.	
ITF Software, LLC (Interfaces)		Premier Oilfield Group		STRYDE	
J-W Power Company		Proserv		Subsurface Consultants &	
K&M Technology Group		Pyramid Oil Tools		Associates, LLC (SCA)	2121
Kansas University, Dept. of Geology/	1910	QuantumPro, Inc		Tech Session Station A	
Kansas Interdisciplinary Carbonates		Quorum Software		Tech Session Station B	
Consortium	102/	Raptor Consulting Inc.,		Tech Session Station C	
KAPPA - REVEAL		Rebooking Lounge		Tech Session Station D	
Katalyst Data Management		Registration		Tenex Technologies	
Kureha Energy Solutions		Renegade Services		Teradata	
Luxfer MEL Technologies		Revo Testing Technologies, LLC		Terves Incorporated	
Media Lounge		RevoChem, LLC		TGS	
MetaRock Laboratories, Inc		RevSolz Corporation		TGT Diagnostics	
MorphPackers		Ridgeway KIte		Thru Tubing Solutions	
Nanometrics		Rivitt		TIBCO Software, Inc	
NAPE Expo LP		Rock Flow Dynamics		Tracerco	
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NatureWorks		ROGII Inc		TRICON Geophysics	
NCS Multistage / Repeat Precision		Ryder Scott Company, L.P		Tubel Energy	
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New England Research		SAGA Wisdom		U-Pitch Theater	
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NOV Inc		Seismos, Inc		WellDatabase	
Novi Labs		Selman and Associates		WellDrive, LLC	
NUTECH		SensorEra Inc		Welltec	
Oil & Gas Journal		Shale IOR LLC		Western Falcon	
Oilfield Marketplace (OFMP)		Shale Oil Tools		Whitson USA LLC	
Omnira Software	1853	Sharp Reflections Inc	1220	Wildcat Technologies, LLC	1138
One Geo	2123	Silixa	1643	WSP Golder	924
OptaSense, a LUNA company	1309	SimTech LLC	827	Xecta	1423
Osperity	1117	SmartSolo	1019	XStim Consulting Inc	934
Petricore	1424	Society of Exploration Geophysicists	720	Ziebel an Archer Company	1819
Petro.ai	1919	Society of Petroleum Engineers (SPE) .	722	ZL Chemicals Ltd	1241
PetroCubic	833	Sound QI Solutions Ltd			
Petrolern, LLC	2008	Sparx Engineering	1749		

# **CORE EXHIBITS**

Visit the Core Exhibits, sponsored by Core Laboratories in the Exhibit Hall (#626) to see core samples from around North America and discover the true variability of these tight reservoirs.

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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

# **EXHIBITOR DIRECTORY**

(as of 8 June)

Tulsa, OK 74101, USA www.aapg.org

The American Association of Petroleum Geologists (AAPG) is one of the world's largest professional geological societies. AAPG works to advance the science of geology, especially as it relates to petroleum, natural gas, other subsurface fluids, and mineral resources; to promote the technology of exploring for, finding, and producing these materials in an economically and environmentally sound manner; and to advance the professional well-being of its members. AAPG was founded in 1917 and is headquartered in Tulsa, Oklahoma; currently almost one-third of members live outside the United States.

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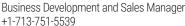
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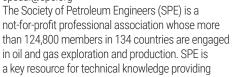
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25907 Oak Ridge Drive The Woodlands, TX 77380, USA Paul Tubel, CEO

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