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- Multi-Source Data Integration: Eagle Ford Shale Sweet Spot Mapping B. Tinnin, H. Bello, M. McChesney
- Using Pad ISIP, DFIT, and ESP Data to Generate a Pore Pressure Model for the Midland Basin D. Loughry, D. Epps, J. Forrest
- An Integrated Approach to Stimulated Reservoir Interpretations of the Permian Wolfcamp Shale D. R. Collins, G. Monson, W. Chu, A. Quinn
- A Case for Microseismic Surface Arrays in Texas? H. Meighan, R. A. Hull, E. Roberts
- Improving Wolfcamp B3 Drilling and Production by Integrating Core, Mud Logs, Electrical Logs, Seismic Inversion, Microseismic and Drilling Data H. Ye, L. Waite, R. Meek, R. Bodziak, E. Kelly
- Application of Real-Time Bottom-Hole Pressure to Improve Field Development Strategies in the Midland Basin Wolfcamp Shale
   K. Scott, W. Chu, R. W. Flumerfelt
- Using Geochemical Fingerprinting as a Direct Indicator of Zones Accessed by Induced Fractures in Horizontal Wells in the Wolfcamp and Spraberry Formations of the Midland Basin M. M. Laughland, D. K. Baskin
- Eagle Ford Well Spacing: A Methodology to Integrate, Analyze and Visualize Multisource Data in Solving a Complex Value-Focused Problem

P. Lindner, H. Bello

- High Fidelity Microseismic Data Acquisition in the Midland Basin Wolfcamp Shale Play West Texas, USA R. A. Hull, R. Meek, B. Wright, H. Meighan, A. Von der Hoya, J. Lempges
- Well Space Modeling, SRV Prediction Using Microseismic, Seismic Rock Properties and Structural Attributes in the Eagle Ford Shale of South Texas

R. Meek, B. Suliman, H. Bello, R. A. Hull

- 3-D Finite Difference Modeling of Microseismic Source Mechanisms in the Wolfcamp Shale of the Permian Basin R. Meek, R. A. Hull, A. Von der Hoya, D. Eaton
- Preliminary Geologic and Chemostratigraphic Analysis of the Wolfcamp D Shale, Midland Basin, West Texas M. McGlue, P. Baldwin, L. Waite, O. Woodruff, P. Ryan
- Long-Term Evaluation of Carbon Isotopes of C1-C5 Hydrocarbons in Headspace Gas Desorbed From Drill Cuttings Collected in Sealed Jars

J. Strauss, P. Travers, M. Dolan, N. Rosenau

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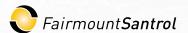
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URTeC attracts the industry's most respected professionals, speakers and thought leaders for an unparalleled attendee experience. URTeC's unique collective learning platform focuses exclusively on the intersection point between engineers, geoscientists and all asset team members.

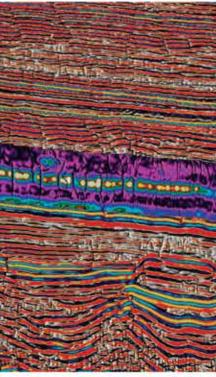
URTeC leverages expertise from all technical backgrounds and sets these technologies, emerging trends and best practices within the larger business context to optimize the development of North American resource plays.

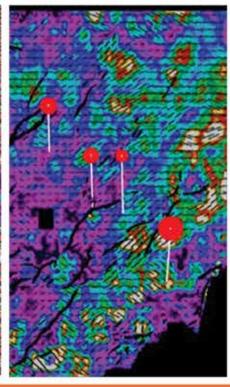
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Dear Colleague,

On behalf of the Unconventional Resources Technology Conference (URTeC), its sponsoring organizations and Technical Program Committee, we welcome you to the third edition of this collaborative event, which focuses on the science and technology required to address the economic and technical challenges of unconventional resources.

The three largest and most preeminent upstream oil and gas societies – the Society of Petroleum Engineers (SPE), the American Association of Petroleum Geologists (AAPG) and the Society of Exploration Geophysicists (SEG), with help from our friends at the American Society of Mechanical Engineers, Petroleum Division (ASME-PD) – have joined forces again to bring together industry professionals to discuss the most relevant and timely topics for geoscientists, engineers and business professionals in the oil and gas industry.

The Opening Plenary Session frames the business and public policy environment, reviews opportunities and strategies for continued growth in supply and sets the stage for a URTeC technical program that explores in detail how multidisciplinary integration can lead to state-of-the-art breakthroughs, pragmatic prospecting and assessment tools, and optimized development and value creation. Moderated by Mariano Gurfinkel (Hess Corporation), Session panelists include:

- Adam Sieminski, Administrator, U.S. Energy Information Administration
- Luis Giusti, Senior Advisor, Center for Strategic and International Studies
- Tony Vaughn, Executive Vice President, Exploration and Production, Devon Energy Corporation

In the face of uncertain commodity prices and a continuing oversupply of oil on the world market, we asked the upstream operating companies, in collaboration with their service provider partners, to stretch like never before. We specifically asked asset managers to encourage their teams to submit contributions that share knowledge and recommended practices that will allow better management of our unconventional resources in today's market. Our industry colleagues responded with team presentations that have been scattered throughout the program. In addition, we hope you plan to attend the Post-Conference Operators' Forum, which addresses Appraisal and Development of Unconventional Reservoirs by presentation and discussion of specific unconventional plays in North America.

Beyond our challenge to the upstream operators, we also listened to last year's participants in planning URTeC 2015. We have attempted to dismantle the chimneys and fences among disciplines, therefore, wherever possible, sessions are organized by play and/or by petroleum system(s), alternatively by geography and only incidentally by technical specifics. As such, we look forward to guidance and participation regarding the structure of URTeC 2016.

The media has observed that the unconventional genie is out of the bottle and, now with that reality in hand, the challenge may be to bring unconventional development costs at parity with conventional resources whenever and wherever possible. That path forward may be forged at integrated exchanges such as URTeC where the industry shows that "cross-discipline teamwork rules."

On behalf of the organizing societies and the Technical Program Committee, we are pleased you are here, and we thank you for attending URTeC 2015.



Sincerely,

**Technical Program Co-Chairs** 

Tom Blasingame, Texas A&M University Skip Rhodes, Pioneer Natural Resources Gene Sparkman, Lumina Technologies Inc.







## **Technical Program Committee**

#### **Technical Program Co-Chairs**

Tom Blasingame
Texas A&M University

Skip Rhodes
Pioneer Natural Resources

**Gene Sparkman** Lumina Technologies Inc.

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## **URTeC** at a Glance

SATURDAY	
8:00 a.m5:00 p.m.	Pre-Conference Short Course 1: Geomechanics for Completion Optimization in Unconventionals: From Characterization to Monitoring
8:00 a.m5:00 p.m.	Pre-Conference Short Course 3 (Day One): Discovery and Recovery Thinking in Shales
8:00 a.m5:00 p.m.	Pre-Conference Short Course 4 (Day One): Modern Production Data Analysis for Unconventional Reservoirs
8:00 a.m5:00 p.m.	Pre-Conference Short Course 5 (Day One): Hydraulic Fracturing – Design and Treatment
8:00 a.m5:00 p.m.	Pre-Conference Short Course 6 (Day One): Assessment, Forecasting and Decision-Making in Unconventional Resource Plays
12:00 p.m5:00 p.m.	Registration
2:00 p.m.	Pre-Conference Field Trip 2: Eagle Ford — An Unconventional Mudstone Reservoir (Saturday–Sunday)
UNDAY	
7:30 a.m5:00 p.m.	Registration
8:00 a.m5:00 p.m.	Pre-Conference Short Course 3 (Day Two): Discovery and Recovery Thinking in Shales
8:00 a.m5:00 p.m.	Pre-Conference Short Course 4 (Day Two): Modern Production Data Analysis for Unconventional Reservoirs
8:00 a.m5:00 p.m.	Pre-Conference Short Course 5 (Day Two): Hydraulic Fracturing – Design and Treatment
8:00 a.m5:00 p.m.	Pre-Conference Short Course 6 (Day Two): Assessment, Forecasting and Decision-Making in Unconventional Resource Plays
8:00 a.m5:00 p.m.	Pre-Conference Short Course 7: Introductory Geochemistry for Condensate-Rich Shales and Tight Oil
8:00 a.m.–5:00 p.m.	Pre-Conference Short Course 8: Microseismic Imaging of Hydraulic Fracturing: Improved Engineering of Unconventional Shale Reservoirs
1:00 p.m.–5:00 p.m.	Speakers Service Center
IONDAY	
7:00 a.m6:00 p.m.	Registration
7:30 a.m5:30 p.m.	Speakers Service Center
3:30 a.m10:00 a.m.	Opening Plenary Session
10:00 a.m7:00 p.m.	Exhibition
10:00 a.m10:40 a.m.	Breakfast Bites with Exhibitors
10:20 a.m11:35 a.m.	ePaper Presentations
10:00 a.m5:10 p.m	ePapers On Demand
10:45 a.m12:05 p.m.	Oral Presentations
12:05 р.m.–1:15 р.m. 🦰	Topical Luncheon: How to Make Money in a Low Oil Price Environment — Identifying Optimization Candidates From Producing Assets ( <b>David Anderson</b> )
12:05 p.m.–1:15 p.m. 🛚 🔤	Topical Luncheon: Technology Innovation for Unconventionals — What Now? (Claudia J. Hackbarth)
12:05 p.m.–1:15 p.m. 🛚 🚾	Topical Luncheon: Extracting Value From Multiscale Imaging of Unconventional Reservoirs (Terri Olson)
1:45 p.m.–5:25 p.m.	Oral Presentations
1:50 p.m.–4:45 p.m.	ePaper Presentations
3:05 p.m.–3:45 p.m.	Refreshment Break in the Exhibition Hall
3:45 p.m.–5:10 p.m.	Interactive Panel: Opportunities and Challenges of Liquid Recovery From Tight Rock
5:00 p.m.–7:00 p.m.	Opening Reception in the Exhibition Hall
UESDAY	
7:00 a.m.–8:15 a.m.	Topical Breakfast: Energy for the Human Family — A View of Issues ( <b>Rev. Séamus P. Finn</b> )
7:00 a.m.–8:15 a.m.	Topical Breakfast: Unconventional Resources and Unconventional People (Valerie Jochen)
7:00 a.m.–5:30 p.m.	Registration
7:30 a.m.–5:30 p.m	Speakers Service Center
3:00 a.m.–6:00 p.m.	Exhibition  Eventive Planery Consider
3:30 a.m.–10:00 a.m.	Executive Plenary Session  Petrophysist Brook in the Exhibition Hell
10:00 a.m10:40 a.m. 10:00 a.m5:10 p.m.	Refreshment Break in the Exhibition Hall
10:20 a.m.–12:00 p.m.	ePapers On Demand ePaper Presentations
10:45 a.m.–12:05 p.m.	Oral Presentations
12:05 p.m.–1:15 p.m.	Topical Luncheon: Cause for Pause: Scientific Research on Hydraulic Fracturing Health Risks (Ann Alexander)
12:05 p.m.–1:15 p.m.	Topical Luncheon: Diagnostic Fracture Injection Tests (DFITs): Benefits to Reservoir Characterization and Overall Fie Development (Jennifer Miskimins)
12:05 р.m.–1:15 р.m. 💹	Topical Luncheon: Risks to Globalization of Unconventional Plays ( <b>D. Nathan Meehan</b> )
1:45 p.m.–5:25 p.m.	Oral Presentations
1:50 p.m.–4:45 p.m.	ePaper Presentations
3:05 p.m.–3:45 p.m.	Refreshment Break in the Exhibition Hall

## **URTeC** at a Glance

3:45 p.m5:10 p.m.	Interactive Panel: Sweet Spotting — Isn't This Our Goal?
5:00 p.m.–6:00 p.m.	Networking Reception in the Exhibition Hall
WEDNESDAY	
6:00 a.m4:30 p.m.	Luggage Check
7:00 a.m.–8:15 a.m.	Topical Breakfast: Shale Plays: How Technology, Governments, Regulators, Academia and the Public Have Changed the World's Energy Supply and Demand Equation ( <b>Joseph H. Frantz, Jr.</b> )
7:00 a.m.–8:15 a.m.	Topical Breakfast: Learnings and Lessons From Shale Exploration in a Tectonized Foreland Basin: Controls on Sweet Spot Development in the Duvernay Shale ( <b>Matthew Davis</b> )
7:00 a.m1:00 p.m.	Registration
7:30 a.m4:30 p.m.	Speakers Service Center
8:00 a.m1:00 p.m.	Exhibition
8:25 a.m12:05 p.m.	Oral Presentations
9:00 a.m12:00 p.m.	ePapers On Demand
9:30 a.m11:35 p.m.	ePaper Presentations
10:10 a.m10:50 a.m.	Refreshment Break in the Exhibition Hall
1:45 p.m3:10 p.m.	Interactive Panel: Operations and Production Challenges — Planning for Long-Term Production
1:45 p.m.–3:55 p.m.	Oral Presentations
THURSDAY	
7:30 a.m.	Post-Conference Field Trip 4: Paleozoic Stratigraphy and Reservoirs, Permian Basin – Guadalupe, Hueco, and Franklin Mountains, West Texas and New Mexico (Thursday–Sunday)
8:00 a.m5:00 p.m.	Post-Conference Operators' Forum: Appraisal and Development of Unconventional Reservoirs (Grand Hyatt)

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## **Technical Program at a Glance**

PAY	SESSION	TIME	TYPE	LOCATION
	Opening Plenary Session	8:30 a.m10:00 a.m.	Oral	Lila Cockrell Theatre
	Applied Analytics and Case History of Modeling	10:20 a.m10:45 a.m.	ePaper	Exhibition Hall, Station A
	Architectural Analysis of Unconventionals: A Material Science Approach	10:45 a.m.–11:10 a.m.	ePaper	Exhibition Hall, Station B
	Microseismic and Reservoir Volumes	10:45 a.m12:05 p.m.	Oral	Room 103
	Optimized Well Placement	10:45 a.m12:05 p.m.	Oral	Room 006
Monday	Scaling the Midstream for Unconventionals	10:45 a.m12:05 p.m.	Oral	Room 008
Morning	Stakeholder Engagement and Social Responsibility	10:45 a.m12:05 p.m.	Oral	Room 001
	Studies in Storage and Transport at the Nano-Pore Level	10:45 a.m.–12:05 p.m.	Oral	Room 007
	The Montney in Development Mode	10:45 a.m12:05 p.m.	Oral	Ballroom B
	The Niobrara in Development Mode	10:45 a.m12:05 p.m.	Oral	Ballroom A
	Measure Twice and Stimulate Once: The Mantra of Optimized Completions	11:10 a.m.–11:35 a.m.	ePaper	Exhibition Hall, Station C
AY	SESSION	TIME	TYPE	LOCATION
	Geomechanics of Hydraulic Fracturing: A Place Where Geology Meets Engineering	1:45 p.m.–3:05 p.m.	Oral	Room 008
	Eagle Ford: The Journey Continues I	1:45 p.m.–5:25 p.m.	Oral	Ballroom B
	Emerging Plays I: Which Ones Will Make the Cut?	1:45 p.m.–5:25 p.m.	Oral	Room 007
	Fracture Detection and Evaluation: A Cross-Discipline Challenge	1:45 p.m.–5:25 p.m.	Oral	Room 006
	Microseismic: The Quest for Added Value	1:45 p.m.–5:25 p.m.	Oral	Room 103
	New Developments in the Permian Basin	1:45 p.m.–5:25 p.m.	Oral	Ballroom A
Monday Afternoon	Progress Update for the Vaca Muerta	1:45 p.m.–5:25 p.m.	Oral	Room 001
7 (1101110011	Forecasting Production in Unconventional Reservoirs	1:50 p.m2:40 p.m.	ePaper	Exhibition Hall, Station B
	Enabling and Applied Technologies	1:50 p.m.–3:55 p.m.	ePaper	Exhibition Hall, Station A
	Production and Recovery Mechanisms	2:40 p.m3:05 p.m.	ePaper	Exhibition Hall, Station C
	Surface and Midstream	3:05 p.m.–3:55 p.m.	ePaper	Exhibition Hall, Station B
	Interactive Panel: Opportunities and Challenges of Liquid Recovery From Tight Rock	3:45 p.m.–5:10 p.m.	Oral	Room 008
	Social Responsibility, Water Management and Groundwater Protection	3:55 p.m.–4:45 p.m.	ePaper	Exhibition Hall, Station A
AY	SESSION	TIME	TYPE	LOCATION
	Executive Plenary Session	8:30 a.m10:00 a.m.	Oral	Lila Cockrell Theatre
	Evaluating and Modeling Kerogen and Petroleum Fluids I	10:20 a.m11:35 a.m.	ePaper	Exhibition Hall, Station A
	Imaging Dynamic Processes at the Pore Scale	10:45 a.m12:05 p.m.	Oral	Ballroom A
	Integrated Completion Design: Challenging the Status Quo	10:45 a.m.–12:05 p.m.	Oral	Room 006
Tuesday	Management of Groundwater Protection and Legacy Wells	10:45 a.m12:05 p.m.	Oral	Room 001
Morning	Modeling Well Spacing and Multiscale Transport	10:45 a.m12:05 p.m.	Oral	Ballroom B
	Multidisciplinary Integration: Some Surprising Outcomes	10:45 a.m.–12:05 p.m.	Oral	Room 008
	Natural Fractures and Your Completion Design	10:45 a.m12:05 p.m.	Oral	Room 007
	Western U.S. Case Studies: More Upside in the Rockies!	10:45 a.m.–12:05 p.m.	Oral	Room 103
	Phase Behavior and Reservoir Production Modeling	11:10 a.m11:35 a.m.	ePaper	Exhibition Hall, Station B
	Well Testing and Production Optimization	11:35 a.m12:00 p.m.	ePaper	Exhibition Hall, Station C



## **Technical Program at a Glance**

DAY	SESSION	TIME	TYPE	LOCATION
	Characterization of Facies Through Rock Physics: Petrophysics and Seismic Data	1:45 p.m.–3:05 p.m.	Oral	Room 008
	Completion and Stimulation Practices: What To Do With All That Horsepower	1:45 p.m.–5:25 p.m.	Oral	Ballroom A
	Forecasting Production in Unconventional Reservoirs: Getting the Real EUR to the Podium	1:45 p.m.–5:25 p.m.	Oral	Room 007
	Reservoir Characterization and Mapping the Ethereal Sweetspot	1:45 p.m.–5:25 p.m.	Oral	Ballroom B
	Reservoir Production Modeling: The Enigmas From Nano-Flow Behavior to EUR	1:45 p.m.–5:25 p.m.	Oral	Room 001
Tuesday Afternoon	Techniques for Imaging Unconventionals at Multiple Scales	1:45 p.m.–5:25 p.m.	Oral	Room 103
7 (1101110011	The Bakken Reloaded	1:45 p.m.–5:25 p.m.	Oral	Room 006
	China Case Studies	1:50 p.m3:30 p.m.	ePaper	Exhibition Hall, Station B
	Characterization of Shales: Chemostratigraphy and Geochemistry	1:50 p.m.–3:55 p.m.	ePaper	Exhibition Hall, Station A
	Microseismic I: Does It Really Add Value?	1:50 p.m.–4:45 p.m.	ePaper	Exhibition Hall, Station C
	Eagle Ford: The Journey Continues	3:30 p.m4:20 p.m.	ePaper	Exhibition Hall, Station B
	Interactive Panel: Sweet Spotting – Isn't This Our Goal?	3:45 p.m.–5:10 p.m.	Oral	Room 008
	Evaluating and Modeling Kerogen and Petroleum Fluids II	3:55 p.m.–4:20 p.m.	ePaper	Exhibition Hall, Station A
DAY	SESSION	TIME	TYPE	LOCATION
	Advances in Well Testing and Flow Analysis	8:25 a.m12:05 p.m.	Oral	Room 006
	Applied Analytics: Life With Too Many Variables	8:25 a.m12:05 p.m.	Oral	Room 008
	Eagle Ford: The Journey Continues II	8:25 a.m12:05 p.m.	Oral	Ballroom A
	Evaluating and Modeling Kerogen and Petroleum Fluids	8:25 a.m.–12:05 p.m.	Oral	Ballroom B
	Rock Physics and Multiphase Flow	8:25 a.m12:00 p.m.	Oral	Room 103
Wednesday	Stimulation Case Studies: What Works and What Doesn't?	8:25 a.m10:10 a.m.	Oral	Room 007
Morning	Production and Recovery Mechanisms: Can These Be Optimized?	8:25 a.m.–12:05 p.m.	Oral	Room 001
	Microseismic II: Does It Really Add Value?	9:30 a.m9:55 a.m.	ePaper	Exhibition Hall, Station A
	Modeling Flow in Complex Systems	9:30 a.m11:35 a.m.	ePaper	Exhibition Hall, Station B
	Techniques for Imaging Unconventionals at Multiple Scales	10:20 a.m.–10:45 a.m.	ePaper	Exhibition Hall, Station C
	The Bakken Reloaded	10:45 a.m11:10 a.m.	ePaper	Exhibition Hall, Station C
	Restimulation Practices and Results	10:45 a.m12:05 p.m.	Oral	Room 007
DAY	SESSION	TIME	TYPE	LOCATION
	Alchemy or Science? Chemostratigraphy for Depositional Environments and Facies	1:45 p.m.–3:30 p.m.	Oral	Room 006
	Calling Home From the Subsurface: Applications of Fiber Optics	1:45 p.m.–3:30 p.m.	Oral	Room 001
Modpeeder	Emerging Plays II: Which Ones Will Make The Cut?	1:45 p.m.–3:55 p.m.	Oral	Room 103
Wednesday Afternoon	Interactive Panel: Operations and Production Challenges – Planning for Long-Term Production	1:45 p.m.–3:10 p.m.	Oral	Room 008
	Production Optimization From Stimulation to Soaking: What Works?	1:45 p.m.–3:55 p.m.	Oral	Ballroom A
	Using Performance to Define Completion and Stimulation Strategies	1:45 p.m.–3:55 p.m.	Oral	Room 007

\*Denotes presenter other than first author

#### **Opening Plenary Session**

Lila Cockrell Theatre
Time:

Lila Cockrell Theatre
8:30 a.m.-10:00 a.m.

Moderator: Mariano Gurfinkel, Hess Corporation

What is the future of continued development of unconventional resources in the current price and competitive environment? Our panel of experts will reveal their short and long term views of unconventional resource appraisal and development and their impact on domestic and global supply. Speakers will share how the actors are strategically positioned for success in this unsettled environment.







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- 8:30 Introductory Remarks
- 8:35 Adam Sieminski, Administrator, U.S. Energy Information Administration
- 8:50 Luis Giusti, Senior Advisor, Center for Strategic and International Studies
- 9:05 Tony Vaughn, Executive Vice President, Exploration and Production, Devon Energy Corporation
- 9:20 Moderated Panel
- 9:40 Audience Q & A

#### **Monday Morning Oral Sessions**

#### The Niobrara in Development Mode

Ballroom A

Co-Chairs: H. LaReau, S. Sonnenberg and D. Yaw

- 10:45 Introductory Remarks
- 10:50 The Impact of Multiple, Thin Bentonites on Proppant Placement and Effective Fracture Continuity Within the Niobrara Formation, Weld County, Colorado: M. D. Sonnenfeld¹, C. Ohlson¹, C. Zahm², M. Odegard¹ (1. Whiting Petroleum Corp.; 2. Bureau of Economic Geology)
- 11:15 Enhancing Production in High Angle and Horizontal Wells Through an Integrated Workflow: Examples From The Western United States: I. Pirie, R. Koepsell, A. Yunuskhojayev, M. Zhou, B. Dupuis, G. A. Martinez (Schlumberger)
- 11:40 Statistical Methods of Predicting Source Rock Organic Richness From Open-Hole Logs, Niobrara Formation, Denver Basin, Colorado: R. S. El Ghonimy, S. Sonnenberg (Colorado School of Mines)

#### The Montney in Development Mode

Ballroom B

Co-Chairs: D. Hume and J. Thompson

- 10:45 Introductory Remarks
- 10:50 The Super Pad A Multi-Year Integrated Approach to Resource Development in the Montney: M. Dembicki, G. Nevokshonoff, M. Spence, J. Johnsen (7 Generations)
- 11:15 Fracture Characterization of the Montney Formation Using Amplitude Inversion of Converted Wave Seismic: T. L. MacFarlane<sup>1</sup>, T. Davis<sup>2</sup> (1. Anadarko; 2. Colorado School of Mines)
- 11:40 Optimizing Completions Within the Montney Resource Play: M. Seifert, M. Lenko, J. Lee (Canadian Discovery Ltd.)

#### Microseismic and Reservoir Volumes

Room 103

Co-Chairs: C. Cipolla and R. Hull

- 10:45 Introductory Remarks
- 10:50 Connecting the Dots: Microseismic-Derived Connectivity for Estimating Reservoir Volumes in Low-Permeability Reservoirs:
  A. Hugot, J. Dulac, E. Gringarten, A. Haouesse (Paradigm)
- 11:15 Integrating 3-D Seismic and Geomechanical Properties With Microseismic Acquisition and Fracturing Parameters to Optimize Completion Practices Within the Wolfcamp Shale Play of the Midland Basin: M. L. Shoemaker, N. Zakhour, J. Peacock (Callon Petroleum Company)
- 11:40 Predicting Frac Performance and Active Producing Volumes Using Microseismic Data: C. J. Sicking, J. Vermilye, A. Lacazette (Global Geophysical Services)

#### Stakeholder Engagement and Social Responsibility

Room 001

Co-Chairs: T. Juranek and K. Nygaard

- 10:45 Introductory Remarks
- 10:50 **GOT The Global Oil and Gas Technology Initiative:** P. Doucette<sup>1</sup>, D. Nummedal<sup>2</sup>, J. Dahl Karlsen<sup>3</sup> (1. GE O&G; 2. Colorado School of Mines; 3. Norwegian Ministry of Petroleum and Energy)
- 11:15 Development of the First Internationally Accepted Standard for Geologic Storage of Carbon Dioxide Utilizing Enhanced Oil Recovery (EOR) Under the International Standards Organization (ISO) Technical Committee TC-265: S. M. Carpenter, G. J. Koperna (Advanced Resources International)
- 11:40 A Critical Evaluation of Simple Predictive Models Relating Fluid Injection to Induced Seismicity From Shale Hydraulic Fracturing and Wastewater Injection: S. Raziperchikolaee, S. Mishra\* (Battelle Memorial Institute)



\*Denotes presenter other than first author

#### **Optimized Well Placement**

Room 006

Co-Chairs: N. Brown, A. Nall and K. Stephenson

10:45 Introductory Remarks

- 10:50 A Regional Review of Geomechanical Drilling Experience and Problems in the Duvernay Formation in Alberta: M. Soltanzadeh<sup>1</sup>, A. Fox<sup>1</sup>, S. R. Hawkes<sup>1</sup>, D. Hume<sup>2</sup> (1. Canadian Discovery Ltd.; 2. Core Laboratories LP)
- 11:15 Enhanced Wellbore Placement Accuracy Using Geomagnetic In-Field Referencing and Multi-Station Correction: S. Maus<sup>1</sup>, M. Herzl<sup>1</sup>, S. DeVerse<sup>2</sup> (1. Magnetic Variation Services; 2. Surcon)
- 11:40 Elemental Analysis as a Tool in Determining Wellbore Stability Issues: C. C. Moyer<sup>1</sup>, M. Wright<sup>2</sup>, N. Martinez<sup>2</sup> (1. Range Resources Corporation; 2. Chemostrat)

#### Studies in Storage and Transport at the Nano-Pore Level

Room 007

Co-Chairs: S. Rhodes and D. Valleau

10:45 Introductory Remarks

- 10:50 Complex Electrical Conductivity of Mudrocks and Source-Rock Formations Containing Disseminated Pyrite: S. Misra¹, C. Torres-Verdin¹, J. Rasmus², D. Homan² (1. The University of Texas at Austin; 2. Schlumberger)
- 11:15 Molecular Dynamics Simulation on Modeling Shale Gas Transport and Storage Mechanisms in Complex Nano-Pore Structure in Organic Matters: G. Qin, S. He (University of Houston)
- 11:40 Slip-Flow in Shale as Determined by Pore-Scale Lattice Boltzmann Modeling: C. J. Landry, M. Prodanovic, P. Eichhubl (University of Texas at Austin)

#### **Scaling the Midstream for Unconventionals**

Room 008

Co-Chairs: W. Doop and E. Storsteen

10:45 Introductory Remarks

- 10:50 What Does U.S. LNG Export Mean for Future Shale Gas Development: How Many Shale Gas Wells are Needed to Fuel a LNG Train?:

  J. Baihly, R. Clayton, G. Lindsay (Schlumberger)
- 11:15 Well Pad Production Storage Management: D. Smart (Emerson Process Management)
- 11:40 Accelerated Dynamic Modeling for Complex Networks: C. Chidiac, B. Sauve, K. Pitts, V. Halabe (Schlumberger)

#### **Monday Morning ePapers**

#### **Applied Analytics and Case History of Modeling**

Exhibition Hall, Station A

Co-Chairs: M. Gurfinkel and R. Johnson

10:20 History Matching and Predicting Gas/Water Production From CBM: A. M. Farid Ibrahim, H. Nasr-El-Din (Texas A&M University)

#### Architectural Analysis of Unconventionals:

#### **A Material Science Approach**

Exhibition Hall, Station B

Co-Chairs: M. Almasoodi, M. Kendrick and H. Xiong

10:45 Pyrolysis, Porosity and Productivity in Unconventional Mudstone Reservoirs: 'Free' and 'Adsorbed' Oil: M. Raji', D. R. Gröcke¹, C. Greenwell¹, C. Cornford² (1. Durham University; 2. IGI Ltd.)

## **Measure Twice and Stimulate Once: The Mantra of Optimized Completions**

Exhibition Hall, Station C

Co-Chairs: A. Lamb, R. Pharis and J. Rich

11:10 Using Multi-Modal, Acid-Soluble Cement to Maximize Reservoir Contact in Cemented Laterals: M. Hudson, H. Lee (Schlumberger





Please watch for team presentations which are given additional time to display integrated approaches to unconventional plays. Each team consists of no more than three members with different technical backgrounds (geosciences, petrophysics, engineering, operations, etc.).

\*Denotes presenter other than first author

#### **Monday Topical Luncheons**

**Time:** 12:05 p.m.–1:15 p.m. **Fee:** \$50 per person

A ticket is required for Topical Luncheons admission. Tickets are limited. Check Registration for availability.



#### How to Make Money in a Low Oil Price Environment — Identifying Optimization Candidates From Producing Assets

Location: Room 214 A/E

David Anderson, Director of Reservoir Solutions, NCS Multistage

You visit the doctor for one of two reasons: If you have an ailment, you seek treatment to feel better. Alternatively, you may request a physical to determine your general state of health. Oil and gas production systems (well + completion + reservoir) can also be thought of this way. They are complex systems that are designed to function at a certain capacity, but can easily develop a variety of problems that diminish their performance. The "health" of a total production system should be managed in very much the same way as that of a human being. However, this is rarely practiced. Often, treatments (workovers) are prescribed when the source problem has not even been diagnosed, or conversely, performance issues go completely unnoticed. This is similar to walking into a doctor's office and saying "Just skip the diagnosis and cure me!"



Andersor

This presentation discusses best practices for managing oil and gas producing assets, particularly in low price, low profit margin environments, where maximizing productivity is critical. Questions addressed in this talk:

- How can you diagnose the general "health" of your production system?
- How can you effectively triage performance issues in a large producing asset?
- · What measurements are we NOT making and what data are we NOT collecting as an industry that we should be?
- · How can we prescribe more targeted and effective treatments to optimize production at the well and field level?
- How can we plan better completions in the future?

#### Technology Innovation for Unconventionals — What Now?

Location: Room 214 C/D

Claudia J. Hackbarth, Manager, Unconventional Gas & Tight Oil R&D Shell International E&P Inc.

The ever-changing landscape of the energy world presents numerous challenges but fortunately also opportunities to address them. To be viable and sustainable in the future, these challenges will have to be met in the near term — in many cases by new and improved science and technology. However, in a cyclical industry, technological innovations that cost more may not be practical during the lower parts of the cycle.



Hackbarth

Unconventional gas and tight oil present their own significant cost challenges. The opportunities for industry may lie where high grading of producible areas can be combined with cost reductions including using fewer wells, with reduced footprints, and improved or more efficient well engineering and completion techniques. Better understanding of the fundamentals of the reservoirs is needed. Effective learning from field experience will be helped by new workflows to guide the geosciences and engineering technology path forward.

#### **Extracting Value From Multiscale Imaging of Unconventional Reservoirs**

Location: Room 204

Terri Olson, Technical Lead, Unconventional, FEI-Lithicon

Imaging technologies have developed rapidly and now allow acquisition of very detailed rock structure information at scales ranging from nanometers to millimeters. Key techniques include scanning electron microscopy, x-ray tomography (CT) and mineralogy mapping. Integration of information acquired at several scales requires exact registration of 3-D to 3-D images and 2-D to 3-D images. This information coupled with wettability imaging at the pore scale and the ability to re-image pore spaces after exposure to various fluids and during flooding experiments adds to our understanding of recovery processes and controls. This talk will present an overview of such techniques, with examples of applications to unconventional reservoirs. Approaches for upscaling nanopore information to core plug scale will be addressed.



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#### **Monday Afternoon Oral Sessions**

#### **New Developments in the Permian Basin**

Ballroom A

Co-Chairs: M. Kendrick, K. Kirkham and R. Roadifer

- 1:45 Introductory Remarks
- 1:50 Pay Distribution and Basin Architecture of the Wolfcamp Shale in the Delaware Basin: K. Schwartz, G. Hennenfent, C. Harris, M. Hoffnagle, D. Bain (Chevron)
- 2:15 Exploration Through Early Appraisal of the Horizontal Wolfcamp Play in the Ozona Area, Southern Midland Basin: E. Staples, J. Sandarusi, P. Perfetta, J. Adams\* (ConocoPhillips)
- 2:40 Using Pad ISIP, DFIT and ESP Data to Generate a Pore Pressure Model for the Midland Basin: D. Loughry, D. Epps, J. Forrest (Pioneer Natural Resources)
- 3:05 Refreshment Break
- 3:45 An Integrated Approach to Stimulated Reservoir Interpretations of the Permian Wolfcamp Shale: D. R. Collins, G. Monson, W. Chu, A. Quinn (Pioneer Natural Resources)
- 4:10 Cemented-Back Monobore Reduces Well Cost and Fracturing Time in the Wolfcamp: D. Snyder<sup>1</sup>, O. Elizondo<sup>2</sup>, A. Ibara<sup>2</sup>, M. Anderson<sup>3</sup> (1. Packers Plus Energy Services; 2. HighMount E&P/EnerVest; 3. NSI Technologies)
- 4:35 Three Years of Water Treatment in the Permian Basin: ConocoPhillips's Case History: A. Shields, R. Sharma, K. Mclin, L. Sloan (ConocoPhillips)





\*Denotes presenter other than first author

#### **Eagle Ford: The Journey Continues I**

Ballroom B

Co-Chairs: D. Devegowda, H. Meier and R. Walker

- 1:45 Introductory Remarks
- 1:50 Regional Eagle Ford Modeling: Integrating Facies, Rock Properties and Stratigraphy to Understand Geologic and Reservoir Characteristics: D. Hull, P. Chapman, D. Miller, D. Ingraham, N. Fritz, N. Kernan (Devon Energy)
- 2:15 Making Outcrops Relevant to the Subsurface: Learnings From the Eagle Ford Outcrops of West Texas: A. D. Donovan<sup>1</sup>, S. Staerker<sup>1</sup>, R. Gardner<sup>1</sup>, M. C. Pope<sup>2</sup>, M. Wehner<sup>2</sup> (1. BP; 2. TAMU)
- 2:40 Old Geology/New Technology in the Upper Cretaceous Olmos Formation AWP Field McMullen County, Texas: S. Scholz<sup>1</sup>, B. Moriarty\*<sup>2</sup> (1. Swift Energy; 2. Lumina Geophysical)
- 3:05 Refreshment Break
- 3:45 Multidisciplinary Data Integration Enhances Cement Job Design for Effective Hydraulic Zonal Isolation: C. Leong, A. Bhatia, G. DeBruijin (Schlumberger)
- 4:10 Geoscience Applications to Economic Development of a Relatively Shallow, Low Gravity, Structurally Complex Eagle Ford Oil Development, Atascosa County, Texas: L. Billingsley, B. Layton, L. Finger (Abraxas Petroleum Corporation)
- 4:35 Eagle Ford Horizontal Drilling Optimization in Karnes and DeWitt Counties: K. Patton<sup>1</sup>, L. Walker<sup>2</sup> (1. Halliburton; 2. BHP Billiton)
- 5:00 New Findings in Expected Ultimate Field Recoveries: Implications of Staggered Lateral Downspacing in the Eagle Ford Shale: P. Grossi, D. Neumann, F. Lalehrokh (Talisman Energy USA)

#### Microseismic: The Quest for Added Value

Room 103

Co-Chairs: S. Maxwell, J. O'Brien and G. Sparkman

- 1:45 Introductory Remarks
- 1:50 **High Fidelity Microseismic Data Acquisition in the Midland Basin Wolfcamp Shale Play West Texas, USA:** R. A. Hull, R. Meek, B. Wright, H. Meighan, A. Von der Hoya, J. Lempges (Pioneer Natural Resources)
- 2:15 Characterizing the Dynamic Growth of a Fracture Network: T. Urbancic<sup>1</sup>, J. W. Crowley<sup>1</sup>, A. M. Baig<sup>1</sup>, E. Von Lunen<sup>2</sup> (1. The Engineering Seismology Group; 2. Nexen Inc.)
- 2:40 Differentiating Wet and Dry Microseismic Events Induced During Hydraulic Fracturing: S. Maxwell, D. Chorney, M. Grob (IMaGE)
- 3:05 Refreshment Break
- 3:45 A Case for Microseismic Surface Arrays in Texas?: H. Meighan, R. A. Hull, E. Roberts (Pioneer Natural Resources)
- 4:10 Estimating Stimulation-Zone Anisotropy Effects During Microseismic Monitoring: M. Karrenbach, S. Cole, V. Yartsev (SR2020)
- 4:35 **Virginia City Cole Surface/Bore-Hole Microseismic Monitor Program:** J. Teff, D. Langton, T. Womack, B. Greenlees, J. Borell, E. Menendez, P. Dial, B. Elliott (Devon Energy)

#### **Progress Update for the Vaca Muerta**

Room 001

Co-Chairs: B. Barkhouse and M. Gurfinkel

- 1:45 Introductory Remarks
- 1:50 The Vaca Muerta Formation (Late Jurassic-Early Cretaceous) Neuquén Basin, Argentina: Sequences, Facies and Source Rock Characteristics: L. Legarreta¹, H. J. Villar² (1. Patagonia Exploración S.A.; 2. GeoLab Sur S.A.)
- 2:15 Unconventional Shale Pore System Characterization in El Trapial Area, Vaca Muerta, Argentina: L. C. Crousse<sup>1</sup>, S. A. Cuervo<sup>1</sup>, D. Vallejo<sup>1</sup>, L. E. Mosse<sup>2</sup>, T. Fischer<sup>3</sup>, D. McCarty<sup>3</sup> (1. Chevron Argentina; 2. Schlumberger; 3. Chevron Energy Technology Company)
- 2:40 Integrated Reservoir Characterization of Deep Kerogen-Rich Unconventional Resource Play in North Kuwait: J. D. Rao¹, S. Al-Ashwak¹, A. M. Al-Anzi¹, M. Y. Al-Dousiri¹, N. S. Rao¹, Q. Dashti¹, S. Chakravorty² (1. Kuwait Oil Company; 2. Schlumberger Oilfield Eastern Limted)
- 3:05 Refreshment Break
- 3:45 Quantitative and Comparative Mineralogy Analysis From Cores, Cuttings and Logs in Vaca Muerta Shale Play: L. E. Mosse², L. Rodriguez\*¹, E. R. Chiapello¹, M. J. Sanchez², L. Lambert³, J. Leduc³ (1. Total Austral; 2. Schlumberger; 3. Total)
- 4:10 Shorten the Learning Curve Through Technological Innovation: A Case Study of the Fuling Shale Gas Discovery in Sichuan Basin, Southwest China: Z. Jin¹, M. Li¹, Z. Hu¹, B. Gao¹, H. Nie¹, J. Zhao² (1. Petroleum Exploration and Production Research Institute of SINOPEC; 2. China University of Petroleum)
- 4:35 Sweet Spots in Vaca Muerta: Integration of Subsurface and Production Data in Loma Campana Shale Development, Argentina: E. Lovrincevich², F. Vittore¹, D. Licitra\*¹, J. Quiroga¹, P. Oviedo², V. Montoya², L. Monti¹, C. Shannon² (1. YPF SA; 2. Chevron Overseas Services Company)

#### Fracture Detection and Evaluation: A Cross-Discipline Challenge

Room 006

Co-Chairs: U. Ahmed and M. Sharma

- 1:45 Introductory Remarks
- 1:50 Analyzing "Beef" Fractures: Genesis and Relationship With Organic-Rich Shale Facies: M. Al Duhailan¹, S. Sonnenberg¹, M. Longman² (1. Colorado School of Mines; 2. QEP Energy Company)
- 2:15 Multidisciplinary Data Integration for Inverse Hydraulic Fracturing Analysis: A Case Study: A. Dahi Taleghani<sup>1</sup>, P. Puyang<sup>1</sup>, J. LeCalvez<sup>2</sup> (1. Louisiana State University; 2. Schlumberger)
- 2:40 **High Resolution Diffraction Imaging of Small Scale Fractures in Shale and Carbonate Reservoirs:** A. M. Popovici¹, I. Sturzu¹, T. J. Moser² (1. Z-Terra Inc.; 2. Moser Geophysical Services)
- 3:05 Refreshment Break
- 3:45 Characterization of Fracture Length and Conductivity from Tracer Test and Production Data with Ensemble Kalman Filter: S. Hakim Elahi, B. Jafarpour (University of Southern California)

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## **Monday Technical Program**

\*Denotes presenter other than first author

- 4:10 Fracture Characterization Based on Attenuation Estimation From Seismic Reflection Data Using Well-Log-Based Localized Spectral Correction: F. Li, T. Zhao, T. Lin, K. J. Marfurt (University of Oklahoma)
- 4:35 Underbalanced, Horizontal Coal Seam Gas Development in Australia A Case History: J. S. Toralde, C. H. Wuest (Weatherford)
- 5:00 Natural Fracture Detection, Characterization and Modeling in a Tight Oil Carbonate Resource Enables, Through Multidisciplinary Integration, Targeted Development and Enhanced Overall Resource Performance: E. A. Elrafie<sup>1</sup>, S. Russell<sup>1</sup>, G. Vassilellis<sup>1</sup>, R. McCarty<sup>2</sup>, J. W. Austin<sup>2</sup>, F. Medellin<sup>3</sup> (1. Repsol USA; 2. SandRidge; 3. IFP)

#### **Emerging Plays I: Which Ones Will Make the Cut?**

**Room 007** 

Co-Chairs: D. Bassett, R. Fritz and S. Sonnenberg

- 1:45 Introductory Remarks
- 1:50 Unconventional Reservoir Model Predictions Using Massively-Parallel GPU Flow-Simulation: Part-1 Bakken Reservoir Characterization Choices and Parameter Testing: M. Uland¹, J. Gilman¹, O. Angola¹, R. Michelena¹, H. Meng¹, K. Esler², K. Mukundakrishnan², V. Natoli² (1. iReservoir.com Inc; 2. Stone Ridge Technology)
- 2:15 Shale Oil Play Exploration Delineation Using Rock Mechanics Template and Seismic Inversion Data, Vaca Muerta Formation, Neuquén Basin, Argentina: J. Soldo (YPF)
- 2:40 Innovation is Key to Finding New Oil in an Old Sandbox East Texas Stacked Play: T. L. Albrecht, S. Kerchner, S. Brooks, E. Kolstad, T. Willms, D. B. Spear, J. Klein, D. Stemler (Hawkwood Energy)
- 3:05 Refreshment Break
- 3:45 The Newly Emerging Lower Smackover (Brown Dense) Formation: Its Geologic Characteristics and Exploration Potential: B. Yang<sup>1</sup>, R. G. Gerdes<sup>2</sup>, J. Choi<sup>3</sup> (1. Korea National Oil Corporation; 2. Ankor Energy)
- 4:10 The Marble Falls Fractured Resource Play: Unconventional Technology Turns an Old Trend Into the Next Big Play: U. Hargrove<sup>1</sup>, C. Adams<sup>1</sup>, B. D. Berend<sup>1</sup>, M. Grace<sup>2</sup>, M. Mullen<sup>3</sup> (1. Newark E&P Operating, LLC; 2. Independent Consultant; 3. Stimulation Petrophysics Consulting)
- 4:35 Importance of Core and Outcrop Investigations for Evaluating TOC Distribution in Unconventional Systems: An Example From the Mowry Shale: A. L. Socianu<sup>1</sup>, E. R. Gustason<sup>2</sup>, J. P. Kaszuba<sup>1</sup> (1. University of Wyoming; 2. Enerplus Resources)
- 5:00 Character of the Avalon Shale (Bone Spring Formation) of the Delaware Basin, West Texas and Southeast New Mexico: Effect of Carbonate-Rich Sediment Gravity Flows: D. J. Stolz, E. K. Franseen\*, R. H. Goldstein (University of Kansas)

#### Geomechanics of Hydraulic Fracturing: A Place Where Geology Meets Engineering

Room 008

Co-Chairs: G. Han and B. Poe

- 1:45 Introductory Remarks
- 1:50 Uses and Abuses of the Brittleness Index With Application to Hydraulic Stimulation: J. V. Herwanger, S. D. Mildren (Ikon Science)
- 2:15 Numerical Investigation of Coupling Multiphase Flow and Geomechanical Effects on Water Loss During Hydraulic Fracturing Flow Back Operation: M. Wang, J. Leung\* (University of Alberta)
- 2:40 Modeling-Based Recommendations for Drawdown Management in Liquids-Rich Shale Wells: J. A. Quintero Martin, D. Devegowda\* (University of Oklahoma)

#### **Monday Afternoon Interactive Panel**

#### **Opportunities and Challenges of Liquid Recovery From Tight Rock**

**Time:** 3:45 p.m.–5:10 p.m.

Location: Room 008

Fee: Included with registration

Moderator: Chris Clarkson, Professor and Encana-AITF Chair in Unconventional Gas and Light, University of Calgary

As the industry has transitioned from exploitation of shale gas to liquids-rich tight rock systems, new challenges have arisen. For example, production success in the Bakken and Eagle Ford plays has been impressive, but recovery efficiency from liquid-rich tight rock is commonly less than 10 percent. Production enhancement has been evolutionary, but recovery enhancement has lagged and there are few obvious game changers. Current efforts in recovery enhancement emphasize the fundamental reservoir characterization along with rockfluid and fluid-fluid interactions, critical condensate and gas saturation and wettability. This panel of industry experts and practitioners will discuss current challenges and explore opportunities for the rapid evolution of recovery enhancement.

- 3:45 Introductory Remarks
- 3:50 Erdal Ozkan, Professor, Petroleum Engineering Department, Colorado School of Mines
- 4:00 Mohammad Piri, Distinguished Associate Professor of Petroleum Engineering, University of Wyoming
- 4:10 Matt Honarpour, Global Reservoir Engineering Advisor, BHP Billiton
- 4:20 Eric Michael, Director of Petroleum Systems, ConocoPhillips
- 4:30 Moderated Panel
- 4:50 Audience Q & A



\*Denotes presenter other than first author

#### **Monday Afternoon ePapers**

#### **Enabling and Applied Technologies**

Exhibition Hall, Station A

Co-Chairs: J. Bell and T. Juranek

- 1:50 New Perforating Switch Technology Advances Safety and Reliability for Horizontal Completions: L. Albert, J. Dennis, H. Prapoo\* (Allied-Horizontal Wireline Services)
- 2:15 American National Standards Institute's (ANSI) Creation of the U.S. Technical Advisory Group (TAG) to ISO TC-82 Mining With a Focus on Reserve Estimation, Safety, Engineering, Underground Coal Gasification (UGC) and Coal Mine Methane (CMM) and Ventilation Mine Methane (VAM): S. M. Carpenter, G. J. Koperna (Advanced Resources International)
- 2:40 Insights Into Mobilization of Shale Oil Using Microemulsion: K. Bui¹, Y. Akkutlu¹, A. Zelenev², H. Saboowala², J. R. Gillis², J. A. Silas² (1. Texas A&M University; 2. CESI Chemical Flotek)
- 3:05 Applying the Concept of Systematic Reliability Management and Analysis to Achieve Better Well Equipment Performance Through Less Failures and Reduced Downtime Due to Work-Overs: C. McPherson, H. Jenssen\* (ExproSoft)
- 3:30 An Experimental Study on Huff-n-Puff Gas Injection to Enhance Condensate Recovery in Shale Gas Reservoirs: X. Meng, Y. Yu, J. J. Sheng (Texas Tech University)

#### **Forecasting Production in Unconventional Reservoirs**

Exhibition Hall, Station B

Co-Chairs: D. Ilk and J. Thompson

- 1:50 Comparison of Shale Permeability to Gas Determined by Pressure-Pulse Transmission Testing of Core Plugs and Crushed Samples: F. Civan. D. Devegowda (University of Oklahoma)
- 2:15 Stimulated Rock Volume and Estimated Ultimate Recovery: A. Gaurav<sup>1</sup>, S. Kashikar<sup>2</sup> (1. Texas Standard Oil LLC; 2. Microseismic Inc.)

#### **Production and Recovery Mechanisms**

Exhibition Hall, Station C

Co-Chairs: S. Enayatpour, V. Jochen and H. Kalaei

2:40 The Consideration of Pore Size Distribution in Organic-Rich Unconventional Formations May Increase Oil Production and Reserve by 30 Percent, Eagle Ford Case Study: L. Jin, Y. Li\*, Y. Wang (InPetro Technologies, Inc.)

#### Social Responsibility, Water Management and Groundwater Protection

Exhibition Hall, Station A

Co-Chairs: J. Bell, R. Hawkins and T. Juranek

- 3:55 Water-Flexible Fracturing Systems: J. Farrell, T. Baudendistel, M. Kidder (Schlumberger)
- 4:20 Treating Acid Mine Drainage for Use as Source Water: A Pilot Study: M. Heinrichs, A. Lane, R. Peterson (Battelle)

#### **Surface and Midstream**

Exhibition Hall, Station B

Co-Chairs: W. Doop, K. Richter and E. Storsteen

- 3:05 Best Practices of a Joint Integrity Program: N. Patterson, N. Ferguson\* (Hydratight)
- 3:30 Creating a Competitive Advantage Through Integrated
  Upstream Asset Management: L. Wiley (SimSci (SchneiderElectric))



## while staying committed to our values.

ConocoPhillips is proud to be an industry leader in liquids-rich unconventional reservoir plays, with proven assets in the Eagle Ford, Bakken and Permian Basin, as well as several emerging opportunities. We develop these assets in line with our SPIRIT Values—Safety, People, Integrity, Responsibility, Innovation and Teamwork.



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#### Tuesday Topical Breakfasts

**Time:** 7:00 a.m.–8:15 a.m. Fee: \$35 per person

A ticket is required for Topical Breakfasts admission. Tickets are limited. Check Registration for availability.



#### **Energy for the Human Family — A View of Issues**

Location: Room 214 A/B
Rev. Séamus P. Finn OMI, Director Faith Consistent Investing, OIP Trust

As the demand for energy to serve the numerous needs of the human family continues to expand across the world many important questions and issues are raised. These are legal, social, financial, ethical and moral and are being addressed at numerous levels. This presentation will address how some of these questions and issues are being addressed by religious leaders and by faith based and socially responsible investors.



#### **Unconventional Resources and Unconventional People**

Valerie Jochen, Technical Director in Production for Unconventional Resources, Schlumberger

The word "unconventional" has had resurgence in the past 20 years, evolving to mean more than the Webster definition of 'eccentric and atypical." The common use in our industry seems to be "not conforming to accepted rules or standards," and based on that definition, I challenge those working in our industry also be "unconventional."



#### **Executive Plenary Session**

8:30 a.m.-10:00 a.m. Time: Location: Lila Cockrell Theatre

Included with registration
Mariano Gurfinkel, Hess Corporation

tactically reacted to the current price and competitive environment. Lean manufacturing and the development, appraisal and use of new technologies will be presented and discussed.





**Introductory Remarks** 

Manuj Nikhanj, Managing Director, Head of Energy Research, ITG Peter Richter, Vice President of Strategic Development, BHP Billiton

Barry Biggs, Vice President Onshore, Hess Corporation

**Moderated Panel** Audience Q & A

#### **Tuesday Morning Oral Sessions**

#### Imaging Dynamic Processes at the Pore Scale

Ballroom A

Co-Chairs: M. Honarpour, T. Olson and A. Rostami

10:45 **Introductory Remarks** 

- 10:50 Making Movies of Petroleum Generation: J. E. Dahl<sup>1</sup>, M. Castagna<sup>2</sup>, K. Skinner<sup>2</sup>, E. T. Goergen<sup>2</sup>, H. Lemmens<sup>2</sup> (1. Stanford University; 2. FEI Corporation)
- 11:15 Dynamic Micro-CT Imaging of Diffusion in Unconventionals: A. Fogden<sup>1</sup>, T. Olson<sup>2</sup>, M. Turner<sup>1</sup>, J. Middleton<sup>1</sup> (1. Australian National University; 2. FEI-Lithicon)
- Spontaneous Imbibition of Fracturing Fluid and Oil in Shale: M. Akbarabadi, S. Saraji, M. Piri (University of Wyoming) 11:40

#### Modeling Well Spacing and Multiscale Transport

Ballroom B

Co-Chairs: D. Valleau and J. Wallace 10:45 **Introductory Remarks** 

- A Workflow for Multi-Scale Modeling and Simulation of Transport Phenomena in Woodford Shale Rock Matrix: J. Goral, I. Miskovic 10:50 (University of Utah)
- 11:15 Well Space Modeling, SRV Prediction Using Microseismic, Seismic Rock Properties and Structural Attributes in the Eagle Ford Shale of South Texas: R. Meek<sup>1</sup>, B. Suliman<sup>2</sup>, H. Bello<sup>1</sup>, R. A. Hull<sup>1</sup> (1. Pioneer Natural Resources; 2. ConocoPhillips)
- 11:40 A New Physics-Based Modeling of Multiple Non-Planar Hydraulic Fractures Propagation: J. Zhou1, H. Huang2, M. Deo1 (1. University of Utah; 2. Idaho National Laboratory)

#### Western U.S. Case Studies: More Upside in the Rockies!

Room 103

Co-Chairs: R. Roden and J. Stratton 10:45 **Introductory Remarks** 

- 10:50 Geologic Factors Controlling Production in the Codell Sandstone, Wattenberg Field, Colorado: S. Sonnenberg (Colorado School of
- 11:15 Predicting Reservoir Heterogeneity in the Upper Cretaceous Frontier Formation in the Western Powder River Basin — An Integrated Stratigraphic, Sedimentologic, Petrophysical and Geophysical Study: M. Hofmann<sup>2</sup>, S. Fluckiger<sup>1</sup>, A. Hennes<sup>1</sup>, J. Zawila<sup>1</sup>, H. Wang<sup>3</sup> (1. SM Energy; 2. AIM Geoanalytics; 3. CGG)



\*Denotes presenter other than first author

#### **Management of Groundwater Protection and Legacy Wells**

Room 001

Co-Chairs: J. Bell, R. Hawkins and T. Juranek

10:45 Introductory Remarks

- 10:50 **"To Treat or Not to Treat?": Optimized Water Decisions Throughout the Produced Water Management Cycle:** T. Baudendistel, J. Farrell (Schlumberger)
- 11:15 Rapid Methods for Locating Existing Well Penetrations in Unconventional Well Development Areas of Pennsylvania: G. A. Veloski, J. Sams, R. W. Hammack\* (U.S. Department of Energy)
- 11:40 Leaching Characteristics of Drill Cuttings From Unconventional Gas Reservoirs: M. Y. Stuckman<sup>1</sup>, C. Lopano<sup>2</sup>, C. Thomas<sup>1</sup>, J. A. Hakala<sup>2</sup> (1. Oak Ridge Institute for Science and Education; 2. DOE-National Energy Technology Lab)

#### Integrated Completion Design: Challenging the Status Quo

Room 006

Co-Chairs: G. Dozier, R. Malpani and K. Stephenson

10:45 Introductory Remarks

- 10:50 Application of an Engineered Completion Methodology in the Eagle Ford to Improve Economics: J. Dahl<sup>1</sup>, J. Samaripa<sup>1</sup>, J. S. Spaid\*<sup>1</sup>, E. Hutto<sup>2</sup>, B. Johnson<sup>2</sup>, D. Buller<sup>2</sup>, R. Dusterhoft<sup>2</sup> (1. Devon Energy; 2. Halliburton)
- Innovation in Well Design and Lifting Coupled with Subsurface Understanding Provides New Development Concepts in a Tight Oil Carbonate Resource: J. W. Austin², E. A. Elrafie¹, G. Vassilellis¹, S. Russell¹, A. Rodriguez¹, R. J. de Grood¹, T. Howle², J. Gil¹ (1. Repsol USA; 2. SandRidge)

#### **Natural Fractures and Your Completion Design**

Room 007

Co-Chairs: C. Cipolla and J. Olson

10:45 Introductory Remarks

- Application of Mechanical and Mineralogical Rock Properties to Identify Fracture Fabrics in the Devonian Duvernay Formation in Alberta: M. Soltanzadeh¹, G. Davis², A. Fox¹, D. Hume³, N. Rahim¹ (1. Canadian Discovery; 2. Graham Davies Geological Consultants Ltd.; 3. Core Laboratories LP)
- 11:15 Constraining Geomechanical Model Development by Utilizing Microseismic Derived Fracture Characteristics: A. M. Baig¹,
  T. Urbancic¹, J. Gallagher³, E. Von Lunen², J. W. Crowley¹ (1. The Engineering Seismology Group; 2. Nexen Inc.; 3. University of Calgary)
- 11:40 Using Geomechanical Modeling to Quantify the Impact of Natural Fractures on Well Performance and Microseismicity Application to the Wolfcamp, Permian Basin: A. Ouenes¹, Y. Aimene², N. Umholtz¹ (1. FracGeo; 2. Oregon State University)

#### **Multidisciplinary Integration: Some Surprising Outcomes**

Room 008

Co-Chairs: M. Almasoodi, M. Kendrick and H. Xiong

10:45 Introductory Remarks

- 10:50 Unlocking Performance Understanding in Complex Naturally Fractured Tight Oil Using a Unique Integrated Process, "The Event Solution Process," Enables Improved Development Plans and Higher Recovery: E. A. Elrafie¹, G. Vassilellis¹, S. Russell¹, R. J. de Grood¹, J. W. Austin² (1. Repsol USA; 2. SandRidge)
- 11:15 Relationship Between Bioturbation, Microfacies and Chemostratigraphy and Its Implication to the Sequence Stratigraphic Framework of the Woodford Shale in Anadarko Basin, Oklahoma, USA: F. Zou<sup>1</sup>, R. M. Slatt<sup>2</sup>, K. Hlava<sup>1</sup> (1. Marathon Oil Corporation; 2. University of Oklahoma)
- 11:40 A New Play in an Old Basin: Integrated Evaluation of Cretaceous Gallup Sandstone Reservoirs in San Juan Basin, New Mexico:
  S. Sturm¹, A. Richardson², S. Berglund³, Y. Faulkner¹, T. Maxwell¹, B. Pickup⁴ (1. PetroTechnical Services; 2. San Juan Region; 3. Exploration;
  4. San Juan/Piceance)

#### **Tuesday Morning ePapers**

#### **Evaluating and Modeling Kerogen and Petroleum Fluids I**

Exhibition Hall, Station A

Co-Chairs: B. Driskill, T. Nace and O. Woodruff

- 10:20 Long Term Evaluation of Carbon Isotopes of C1-C5 Hydrocarbons in Headspace Gas Desorbed From Drill Cuttings Collected in Sealed Jars: J. Strauss<sup>1</sup>, P. Travers<sup>1</sup>, M. Dolan<sup>1</sup>, N. Rosenau<sup>2</sup> (1. Dolan Integration Group; 2. Pioneer Natural Resources)
- 10:45 **4-D Petroleum Systems Modeling of the Haynesville Shale Play Understanding Gas in Place:** A. Amer¹, R. di Primio³, R. Ondrak³, V. Unnithan² (1. Schlumberger; 2. GFZ-Potsdam; 3. Jacob University Bremen)
- 11:10 Analysis of Trapped Fluids in the Mancos Shale, Uinta Basin, Utah: C. Welker¹, D. Hall¹, R. Philp³, L. Birgenheier², C. Johnson², D. Hobbs² (1. Fluid Inclusion Technologies; 2. University of Utah; 3. University of Oklahoma)

#### **Phase Behavior and Reservoir Production Modeling**

Exhibition Hall, Station B

Co-Chairs: H. Kalaei, K. Moncada and K. Perry

11:10 Fabrication and Transport of Double Emulsion Microcapsules for Applications in Unconventional Resources: P. Roy, S. Walsh, W. Du Frane, J. J. Vericella, J. K. Stolaroff, M. M. Smith, E. B. Duoss, C. M. Spadaccini, W. L. Bourcier, S. Carroll, J. J. Roberts, R. D. Aines (Lawrence Livermore National Laboratory)



Please watch for team presentations which are given additional time to display integrated approaches to unconventional plays. Each team consists of no more than three members with different technical backgrounds (geosciences, petrophysics, engineering, operations, etc.).

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#### **Well Testing and Production Optimization**

Exhibition Hall, Station C Co-Chairs: D. Ilk and B. Poe

11:35 The Role of Drive Mechanisms in Redesigning Development Practices in a Fractured Tight Oil Carbonate Resource: G. Vassilellis<sup>1</sup>, E. A. Elrafie<sup>1</sup>, J. W. Austin<sup>2</sup>, D. Mezo<sup>2</sup>, S. Russell<sup>1</sup> (1. Repsol USA; 2. SandRidge)

#### Tuesday T<u>opical Luncheons</u>

Time: 12:05 p.m.–1:15 p.m.

Fee: \$50 per person

A ticket is required for Topical Luncheons admission. Tickets are limited. Check Registration for availability.



#### Cause for Pause: Scientific Research on Hydraulic Fracturing Health Risks

Location: Room 214 A/B

Ann Alexander, Senior Attorney, Midwest Program, Natural Resources Defense Council (NRDC)

A significant and growing number of scientific studies have emerged in recent years documenting a correlation between hydraulic fracturing activity and harm to public health. The talk will explore recent research findings concerning the association between hydraulic fracturing and air toxics, birth defects and poor birth outcomes, seismic activity and other risks to public health and safety. It will look at how governments and NGOs such as NRDC are responding to scientific information concerning hydraulic fracturing risks and how those risks should be brought to bear in evaluating our energy future.



Alexander

## Diagnostic Fracture Injection Tests (DFITs): Benefits to Reservoir Characterization and Overall Field Development

Location: Room 214 C/D

Jennifer Miskimins, Senior Consulting Engineer, Barree & Associates

Diagnostic fracture injection tests (DFITs) are pump-in tests commonly used to determine fracturing parameters such as closure pressure, fluid efficiency and fracture gradients. However, the additional data that such tests can acquire, including effective permeability, the presence of natural fractures and reservoir pressure, can help in field development long after the completion stage. Multiple (DFITs) taken in a field can help with overall field development and when coupled with other data, can help to characterize the reservoir. This talk will discuss the use of these tests in an integrated setting and should be of interest to all disciplines.



Miskimins

#### Risks to Globalization of Unconventional Plays

Location: Room 204

D. Nathan Meehan, Senior Executive Advisor, Baker Hughes, Inc.

The dramatic growth of North American unconventional plays has made a huge impact on production and reserves, attracting the attention of operators around the world. China, Poland, Saudi Arabia and many other countries have high hopes for such projects. This presentation highlights a series of significant risks to exporting the North American success story, including property ownership, access to leases and data, risk seeking capital, water availability, varying geological and geomechanical circumstances and the social license to operate. Are such risks surmountable? One major hurdle is the dependence on statistical methods to evaluate plays and identify sweet spots. Many others remain.



Meehan

#### **Tuesday Afternoon Oral Session**

#### Completion and Stimulation Practices: What to Do With All That Horsepower

Ballroom A

Co-Chairs: U. Ahmed, I. Aviles and J. Gujral

- 1:45 Introductory Remarks
- An Integrated Dataset Centered Around Distributed Fiber Optic Monitoring—Key to the Successful Implementation of a Geo-Engineered Completion Optimization Program in the Eagle Ford Shale: S. D. Cadwallader¹, J. Wampler¹, T. Sun¹, H. M. Sebastian¹, M. C. Graff¹, I. R. Gil¹, H. Patel¹, G. Merletti¹, J. Rodgerson¹, D. Spain¹, T. Lowrey², R. Miller², J. Hadden², J. Swanson² (1. BP; 2. Lewis Energy Group)
- 2:15 Automated Hydraulic Fracturing Stage Design Based on Integrated Fracture Potential: M. Pordel Shahri, H. Chok, C. Amorocho, C. Mejia, U. Mutlu (Weatherford)
- 2:40 Is Pumping Large Volume Sand Fracs Sustainable?: R. Shelley, W. Al-Tailji, N. Guliyev, S. Sheludko (StrataGen)
- 3:05 Refreshment Break
- 3:45 3-D Hydraulic Fracturing and Reservoir Flow Modeling—Key to the Successful Implementation of a Geo-Engineered Completion Optimization Program in the Eagle Ford Shale: H. M. Sebastian, I. R. Gil\*, M. C. Graff, J. Wampler, G. Merletti, T. Sun, H. Patel, D. Spain, S. Cadwallader, K. Cawiezel, P. Smith, R. Keck (BP America)
- 4:10 **Fracture Curving Between Tightly Spaced Horizontal Wells:** R. Safari<sup>1</sup>, X. Ma<sup>1</sup>, R. E. Lewis<sup>1</sup>, U. Mutlu<sup>1</sup>, A. Ghassemi<sup>2</sup> (1. Weatherford; 2. University of Oklahoma)
- 4:35 **Optimized Cluster Design in Hydraulic Fracture Stimulation:** R. R. Settgast<sup>1</sup>, S. Johnson<sup>2</sup>, R. Hurt<sup>3</sup>, J. Morris<sup>1</sup>, D. Moos<sup>3</sup> (1. Lawrence Livermore National Laboratory; 2. Applied Numerics, LLC; 3. Baker Hughes International)
- 5:00 Assessment of Hydrocarbon Potential in the Niobrara Formation, Rosebud Sioux Reservation, South Dakota: D. J. Soeder¹, F. Sawyer², A. Freye², S. Singh³ (1. U.S. Department of Energy; 2. South Dakota School of Mines and Technology; 3. Sinte Gleska University)





\*Denotes presenter other than first author

#### **Reservoir Characterization and Mapping the Ethereal Sweetspot**

Ballroom B

Co-Chairs: A. Lamb. R. Pharis and J. Rich

- 1:45 Introductory Remarks
- 1:50 Integrated Geophysical Technologies for Unconventional Reservoirs and Case Study Within Fuling Shale Gas Field, Sichuan Basin, China: T. Guo, J. Li, M. Lao\*, W. Li (Sinopec Exploration Company)
- 2:15 Integrated Petrophysical and Geophysical Analysis on Identifying Eagle Ford Sweet Spots: B. Chen, D. Kumar, A. Uerling, S. Land, O. Aguirre, T. Jiang, S. Sugianto (BP America Inc.)
- 2:40 Application of Wide-Azimuth 3-D Seismic Attributes to Predict the Microfractures in Block MA Area for Shale Gas Exploration in South China: Y. Zhang¹, G. Yu\*1, X. Liang², L. Jiang³ (1. BGP Inc.; 2. Zhejiang Oilfield, CNPC; 3. RSI)
- 3:05 Refreshment Break
- 3:45 Integration of Multicomponet Surface Seismic, Multicomponent VSP and Microseismic in Reservoir Characterization: P. Constance<sup>2</sup>, J. Simmons<sup>1</sup>, S. Chi<sup>1</sup>, L. Sanford<sup>1</sup> (1. ION Geophysical; 2. Enervest)
- 4:10 Integration of Microseismic With Rock Properties From Multicomponent Seismic Data, Mississippi Lime Play, North Central Oklahoma: S. W. Singleton<sup>1</sup>, S. Chi<sup>1</sup>, C. Lapaire<sup>1</sup>, L. Sanford<sup>1</sup>, P. Constance<sup>2</sup> (1. ION Geophysical Corp.; 2. HighMount Energy)
- 4:35 Improving Wolfcamp B3 Drilling and Production by Integrating Core, Mud Logs, Electrical Logs, Seismic Inversion, Microseismic and Drilling Data: H. Ye, L. Waite, R. Meek (Pioneer Natural Resources)

#### **Techniques for Imaging Unconventionals at Multiple Scales**

Room 103

Co-Chairs: C. Clarkson, T. Olson and A. Rostami

- 1:45 Introductory Remarks
- 1:50 A Quantitative Pore-Scale Investigation on the Paragenesis of Wilcox Tight Gas Sandstone: A. Mehmani, K. Milliken, M. Prodanovic (The University of Texas at Austin)
- 2:15 Quantifying Variability of Reservoir Properties From a Wolfcamp Formation Core: J. Walls, A. Morcote-Rios (Ingrain, Inc.)
- 2:40 Petrophyscial and Fluid Flow Properties of a Tight Carbonate Source Rock Using Digital Rock Physics: M. Dernaika<sup>1</sup>, O. Al Jallad<sup>1</sup>, S. Koronfol<sup>1</sup>, M. Suhrer<sup>1</sup>, J. Walls<sup>1</sup>, S. Matar<sup>2</sup> (1. Ingrain, Inc.; 2. Kuwait Oil Company)
- 3:05 Refreshment Break
- 3:45 **Probing Hydrocarbon Fluid Behavior in Shale Formations:** H. Xu, R. Hjelm, M. Ding, Q. Kang, R. J. Pawar (Los Alamos National Laboratory)
- 4:10 Simulating the NMR Response for Organic Rich Shales: K. Washburn (Ingrain, Inc.)
- 4:35 **Mapping of Microbial Habitats in Organic-Rich Shale:** E. Buchwalter¹, A. M. Swift¹, D. R. Cole¹, J. M. Sheets¹, T. Prisk², L. L. Anovitz², J. Ilavsky³, M. Rivers⁴, S. Welch¹, D. Chipera⁵ (1. Ohio State University; 2. Oak Ridge National Laboratory; 3. Argonne National Laboratory; 4. University of Chicago; 5. Chesapeake Energy Corporation)
- 5:00 Multi-Resolution Imaging of Shales Using Electron and Ion Microscopy: T. Cavanaugh (Ingrain, Inc.)

#### Reservoir Production Modeling: The Enigmas From Nano-Flow Behavior to EUR

Room 001

Co-Chairs: H. Kalaei, K. Moncada and K. Perry

- 1:45 Introductory Remarks
- 1:50 Integrated Haynesville Production Analysis: H. Sun, A. Chawathe, D. Zhou, K. MacIvor, H. Hoteit (Chevron)
- 2:15 Molecular Dynamics Simulations of Retrograde Condensation in Nanoporous Shale: W. R. Welch, M. Piri (University of Wyoming)
- 2:40 Confinement Effects on Hydrocarbon Mixture Phase Behavior in Organic Nanopore: B. Rahmani, Y. I. Akkutlu\* (Texas A&M University)
- 3:05 Refreshment Break
- 3:45 A Modified Approach For Modeling 2-Phase Flowback From Multi-Fractured Horizontal Shale Gas Wells: J. Williams-Kovacs, C. Clarkson (University of Calgary)
- 4:10 Interference Behavior Analysis in Vaca Muerta Shale Oil Development, Loma Campana Field, Argentina: M. D. Rimedio<sup>1</sup>, C. Shannon<sup>2</sup>, L. Monti<sup>1</sup>, A. Lerza<sup>2</sup>, M. Roberts<sup>2</sup>, D. Licitra<sup>1</sup>, J. Quiroga<sup>1</sup> (1. YPF S.A; 2. Chevron)
- 4:35 A Novel Approach for Production Transient Analysis of Shale Gas/Oil Reservoirs: C. Yang, V. Sharma, A. Datta-Gupta, M. J. King\*
- 5:00 Production Analysis and Mechanistic Modeling for Evaluation of Shale Plays: P. Thararoop (Anadarko Petroleum Corporation)

#### The Bakken Reloaded

Room 006

Co-Chairs: C. Cipolla and R. Roadifer

- 1:45 Introductory Remarks
- 1:50 Characterization and Evaluation of the Bakken Petroleum System for CO<sub>2</sub> Enhanced Oil Recovery: J. Sorensen, S. Hawthorne, B. Kurz, J. Braunberger, G. Liu, C. Gorecki, J. Hamling, S. Smith, E. Steadman, J. Harju (University of North Dakota)
- 2:15 Characterizing the Middle Bakken: Laboratory Measurement of Middle Bakken Properties: H. Li, M. Dawson, B. Hart, E. Radjef (Statoil)
- 2:40 Bakken Well Performance Predicted From Shale Capacity: C. Newgord, M. Mediani, A. Ouenes, P. O'Conor (Sigma3)
- 3:05 Refreshment Break
- 3:45 Hydrocarbon Contribution From the Lower Bakken Shale in Horizontals Drilled in the Three Forks in Divide County, North Dakota: R. Brinkerhoff, S. Fluckiger, M. Millard (SM Energy)
- 4:10 **Keys to Production, Three Forks Formation, Williston Basin:** S. Sonnenberg (Colorado School of Mines)
- 4:35 **Novel Reservoir Quality Indices for Tight Oil Shale:** R. Kausik.K.V¹, P. R. Craddock¹, S. Reeder¹, R. L. Kleinberg¹, A. E. Pomerantz¹, E. I. Rylander², R. E. Lewis² (1. Schlumberger-Doll Research; 2. Schlumberger)
- 5:00 Improved Reserve Estimates Using Spatial Averaging: M. Kelkar (University of Tulsa)

\*Denotes presenter other than first author

#### Forecasting Production in Unconventional Reservoirs: Getting the Real EUR to the Podium

Room 007

Co-Chairs: D. Ilk, J. Thompson and R. Walker

- 1:45 Introductory Remarks
- 1:50 An Approximate Analytical Multi-Phase Forecasting Method for Multi-Fractured Light Tight Oil Wells With Complex Fracture Geometry: C. R. Clarkson, F. Qanbari, H. Behmanesh, J. D. Williams-Kovacs (University of Calgary)
- 2:15 Shale Gas Production Decline Trend Comparison Over Time and Basins Revisited: J. Baihly, R. Malpani, R. M. Altman, G. Lindsay, R. Clayton (Schlumberger)
- 2:40 Integration of RTA Based Reservoir Surveillance and Analytical Flow Simulation to Forecast Production in the Haynesville Shale: C. Santacruz, R. Esquivel, J. Smith, R. F. Walker, S. Bayer, T. Soto, M. Wunderle, R. Goudge (BHP Billiton Petroleum)
- 3:05 Refreshment Break
- 3:45 **Methodology for Construction of Type Wells for Production Forecasting in Unconventional Reservoirs:** A. Rastogi, W. Lee (University of Houston)
- 4:10 Proppant Selection Criteria and Their Influence on Performance of North Dakota Oil-Rich Shale Wells: C. Wilcox, T. Fuss, J. Shi, D. Herndon (Saint-Gobain)
- 4:35 **Re-Fracturing Simulations: Pressure-Dependent SRV and Shear Dilation of Natural Fractures:** R. Mittal, Y. Oruganti, C. McBurney (Baker Hughes)

#### Characterization of Facies Through Rock Physics: Petrophysics and Seismic Data

Room 008

Co-Chairs: B. Barkhouse and H. Meighan

- 1:45 Introductory Remarks
- 1:50 Maximizing Recoverable Reserves in Tight Reservoirs Using Geostatistical Inversion From 3-D Seismic: A Powder River Basin Case Study: H. Wang<sup>1</sup>, H. J. Titchmarsh<sup>1</sup>, K. Chesser<sup>1</sup>, J. Zawila<sup>2</sup>, S. Fluckiger<sup>2</sup>, G. Hughes<sup>2</sup>, P. Kerr<sup>2</sup>, A. Hennes<sup>2</sup>, M. Hofmann<sup>3</sup> (1. CGG; 2. SM Energy Company, Inc.; 3. AIM Geoanalytics)
- 2:15 Topological Data Analysis of Marcellus Play Lithofacies: A. Cortis (Ayasdi)
- 2:40 Integrated Interpretation of Microseismic and Seismic Data in a Tight Sandstone Reservoir: J. Du¹, J. Zhang², G. Xu¹, X. Wan¹, X. Sun¹ (1. BGP, CNPC; 2. Xinjiang Oil Company)

#### **Tuesday Afternoon Interactive Panel**

#### Sweet Spotting — Isn't This Our Goal?

**Time:** 3:45 p.m.–5:10 p.m.

Location: Room 008

Fee: Included with registration

**Moderator:** Craig Cipolla, Senior Completions Engineering Advisor, Hess Corporation

We've all heard it said, "Just drill the best wells first" — if it were only that easy! Finding the reservoir interval with the right geomechanical properties and then designing a well placement and completion strategy is critical for success. Knowledge of regional geological and stress analysis is fundamental and when coupled with geophysical and geochemical information trends can be discerned. This panel will discuss recent advances in identifying and exploiting the elusive sweet spots.

- 3:45 Introductory Remarks
- 3:50 Norm Warpinski, Technology Fellow, Pinnacle A Halliburton Service
- 4:00 **George King**, Global Technology Consultant, Apache Corporation
- 4:10 Gervasio Barzola, Vice President Subsurface & Development, Southern Wolfcamp Asset Team, Pioneer Natural Resources
- 4:20 Usman Ahmed, Vice President and Chief Reservoir Engineer, Baker Hughes Reservoir Technology
- 4:30 Moderated Panel
- 4:50 Audience Q & A

#### **Tuesday Afternoon ePapers**

#### **Characterization of Shales: Chemostratigraphy and Geochemistry**

Exhibition Hall, Station A

Co-Chairs: B. Driskill, S. Rilling-Hall and N. Rosenau

- 1:50 Preliminary Geologic and Chemostratigraphic Analysis of the Wolfcamp D Shale, Midland Basin, West Texas: M. McGlue<sup>1</sup>, P. Baldwin<sup>\*1</sup>, L. Waite<sup>2</sup>, O. Woodruff<sup>2</sup>, P. Ryan<sup>1</sup> (1. University of Kentucky; 2. Pioneer Natural Resources)
- 2:15 What Can Magnetic Susceptibility Do for Us in Shale Plays When Used as Part of an Integrated Workflow?: M. Wright<sup>1</sup>, K. Ratcliffe<sup>1</sup>, M. Hounslow<sup>2</sup> (1. Chemostrat Inc.; 2. Lancaster University)
- 2:40 Core Chemostratigraphy and Elemental Geochemistry Along a Dip-Section, Pearsall Formation, Lower Cretaceous, Central to South Texas: H. Rowe, R. Loucks, C. Kerans (University of Texas at Austin)
- 3:05 Chemostratigraphic Associations Between Trace Elements and Organic Parameters Within the Duvernay Formation, Western Canadian Sedimentary Basin: N. Van de Wetering<sup>1</sup>, H. Sanei<sup>2</sup> (1. University of Calgary; 2. Geological Survey of Canada)
- 3:30 Chemostratigraphic Analysis of Green River Formation in Douglas Pass, Piceance Basin: A Response to the Depositional Environment: T. Wu, J. Boak (Colorado School of Mines)





\*Denotes presenter other than first author

#### **China Case Studies**

Exhibition Hall, Station B

Co-Chairs: N. Fishman and X. Li

- 1:50 Diagnostics of Casing Deformation in Multi-Stage Hydraulic Fracturing Stimulation in Lower Silurian Marine Shale Play in Southwestern China: G. Qin, Y. Li (University of Houston)
- 2:15 Shale Gas OVT Seismic Data Prestack Trace-Gather Optimization Technique: Y. Zhang¹, G. Yu¹, X. Liang², B. Liu¹, G. Hu³ (1. Bureau of Geophysical Prospecting (BGP) Inc. of CNPC; 2. ZhenJiang Oil Field; 3. Electric Science University)
- 2:40 Key Factors to Tight Oil Accumulation of Permian Lucaogou Formation in the Jimsar Sag of Junggar Basin, Northwestern China: X. Ding, M. Zha, C. Gao, J. Qu, Y. Su, H. Lian (School of Geosciences in China University of Petroleum, Qingdao)
- 3:05 The Lower Carboniferous Black Shale in the Central Guangxi Depression, Southwest China: A Novel Potential Shale Gas Play: X. He, A. Shen, S. Xiong, Y. Hu, J. Wu (PetroChina Hangzhou Research Institute of Geology)

#### **Eagle Ford: The Journey Continues**

Exhibition Hall, Station B

Co-Chairs: D. Devegowda and H. Meier

- 3:30 Anoxic, Storm Dominated Inner Carbonate Ramp Deposition of Lower Eagle Ford Formation, West Texas: M. Wehner<sup>1</sup>, R. Gardner<sup>2</sup>, M. M. Tice<sup>1</sup>, M. C. Pope<sup>1</sup>, A. D. Donovan<sup>2</sup>, S. Staerker<sup>2</sup> (1. Texas A&M University; 2. BP America)
- 3:55 An Experimental Investigation of the Effect of Pressure Depletion Rate on Oil Recovery From Shale Cores by Cyclic N2 Injection: Y. Yu, J. J. Sheng (Texas Tech University)

#### **Evaluating and Modeling Kerogen and Petroleum Fluids II**

Exhibition Hall, Station A

Co-Chairs: T. Nace and O. Woodruff

3:55 The Impact of Pore Size and Kerogen Maturity on the Behavior of Water in Organic Kerogen Nanopores in Shales: Y. Hu, D. Devegowda\*, R. F. Sigal (University of Oklahoma)

#### Microseismic I: Does It Really Add Value?

Exhibition Hall, Station C

Co-Chairs: R. Hull and J. O'Brien

- 1:50 The Effect of Velocity Uncertainty and Attenuation on Flow Estimates From Microseismicity: O. V. Poliannikov<sup>1</sup>, M. Fehler<sup>1</sup>, A. Malcolm<sup>2</sup> (1. MIT; 2. Memorial University of Newfoundland)
- 2:15 Fracture Surface Extraction and Stress Field Estimation From Three-Dimensional Microseismic Data: D. Copeland, A. Lacazette (Global Geophysical Services)
- 2:40 **A New Method of Neostress Determination From Passive Seismic Data:** A. Lacazette<sup>1</sup>, A. Morris<sup>2</sup> (1. Global Geophysical Services; 2. Southwest Research Institute)
- 3:05 Identification of Microseismic Attributes Through Spectral Analysis: M. J. Nava, J. W. Rector, Z. Zhang (University of California, Berkeley)
- 3:30 **Microseismic Event Location Using Multiple Arrivals: Demonstration of Uncertainty Reduction:** Z. Zhang, J. W. Rector, M. J. Nava (University of California, Berkeley)
- 3:55 From Semi-Circular Bending Test to Microseismic Maps: An Integrated Modeling Approach to Incorporate Natural Fracture Effects on Hydraulic Fracturing: A. Dahi Taleghani, P. Puyang, B. Sarker, M. Gonzalez (Louisiana State University)
- 4:20 **Modeling of Near-Wellbore Hydraulic Fracture Complexity:** C. Sherman<sup>1</sup>, J. Morris<sup>1</sup>, S. Johnson<sup>1</sup>, A. A. Savitski<sup>2</sup> (1. Lawrence Livermore National Laboratory; 2. Shell International Exploration and Production, Inc.)



\*Denotes presenter other than first author

#### **Wednesday Topical Breakfasts**

Time: 7:00 a.m.–8:15 a.m. Fee: \$35 per person

A ticket is required for Topical Breakfasts admission. Tickets are limited. Check Registration for availability.



Shale Plays: How Technology, Governments, Regulators, Academia and the Public Have Changed the World's Energy Supply and Demand Equation

**Location:** Room 214 A/B

Joseph H. Frantz, Jr., Vice President of Engineering Technology, Range Resources Corporation

The global shale revolution is just beginning. Production from U.S. shale reservoirs has increased from 2.5 Bcf/d to almost 35 Bcf/d since 2007, illustrating the viability of this prolific new source of long-term gas supply. Other countries will undoubtedly use the knowledge developed in North America to jump-start their own shale plays. Although technical advancements are largely responsible for unlocking the potential of shale gas, the industry's coordination with a broad set of stakeholders arguably have equal, and perhaps more influence on implementation of new shale developments. As such, they will increasingly impact our industry's ability to more fully develop these resources. This presentation focuses on key technological advancements that drive shale gas development, but also the important aspect of how our industry is working with governments, regulators, academia and the public more collaboratively to best maximize the immense benefits from this opportunity, while fostering the use of best practices.



Frantz

## Learnings and Lessons From Shale Exploration in a Tectonized Foreland Basin: Controls on Sweet Spot Development in the Duvernay Shale

**Location:** Room 214 C/D

Matthew Davis, Manager, Geosciences, Encana Services Company Ltd.

The role that basement scale tectonics played in the evolution of the Western Canadian Sedimentary Basin is profound and provides the context by which regional heat flow trends, shale maturity morphology, fracture and fault patterns and associated pressure cells can be mapped. Integrated geochemical data from all publicly available and proprietary data has been modelled and utilized to build maturity maps that have predicted the distribution of produced liquid yields and fluid densities to date. A strong correlation is observed between Devonian Reef morphology, reservoir quality, shale thickness, maturity and pressure to the syndepositional tectonic environment. An integrated model is presented to explain the context of how these parameters all coincide.



Davis

#### **Wednesday Morning Oral Sessions**

#### **Eagle Ford: The Journey Continues II**

Ballroom A

Co-Chairs: J. Mahoney, J. Paktinat and R. Roadifer

8:25 Introductory Remarks

- 8:30 Acoustic Log Measurements in the Lower Eagle Ford Formation in Brazos and Robertson Counties, Texas and Their Implications on Completion Design: R. Reischman<sup>1</sup>, S. Brooks\*<sup>2</sup>, T. Willms<sup>2</sup>, T. L. Albrecht<sup>2</sup>, J. J. Walsh<sup>1</sup>, E. Arteaga<sup>1</sup> (1. Schlumberger; 2. Hawkwood Energy LLC)
- 8:55 Investigating Natural Fracture Effects on Well Productivity: Eagle Ford, La Salle County, Texas: P. Grossi (Talisman Energy USA)
- 9:20 Advanced Petrophysical, Geological, Geophysical and Geomechanical Reservoir Characterization Key to the Successful Implementation of a Geo-Engineered Completion Optimization Program in the Eagle Ford Shale: T. Sun, G. Merletti, H. Patel, M. C. Graff, S. Cadwallader, O. Aguirre, J. Wampler, I. R. Gil, H. M. Sebastian, D. Spain (BP)
- 9:45 Eagle Ford Well Spacing: A Methodology to Integrate, Analyze and Visualize Multisource Data in Solving a Complex Value-Focused Problem: P. Lindner, H. Bello (Pioneer Natural Resources)
- 10:10 Refreshment Break
- 10:50 Using a Calibrated 3-D Frac Simulator to Optimize Completions of Future Wells in the Eagle Ford Shale: E. Ejofodomi¹, A. Dutt², J. Baihly¹ (1. Schlumberger; 2. Forest Oil)
- 11:15 Multi-Source Data Integration: Eagle Ford Shale Sweet Spot Mapping: B. Tinnin, H. Bello, M. McChesney (Pioneer Natural Resources)

#### **Evaluating and Modeling Kerogen and Petroleum Fluids**

Ballroom B

Co-Chairs: B. Driskill, T. Nace and O. Woodruff

- 8:25 Introductory Remarks
- 8:30 **Kerogen Density Revisited Lessons From the Duvernay Shale:** A. Stankiewicz<sup>1</sup>, N. Ionkina<sup>3</sup>, B. Motherwell<sup>2</sup>, B. Bennett<sup>1</sup>, O. Wint<sup>1</sup>, M. Mastalerz<sup>3</sup> (1. Schlumberger; 2. Encana; 3. Indiana University)
- 8:55 **Geochemical Assessment of in situ Petroleum in Unconventional Resource Systems:** D. M. Jarvie<sup>3</sup>, A. Maende<sup>1</sup>, D. Weldon<sup>1</sup>, B. M. Jarvie<sup>2</sup> (1. Wildcat Technologies; 2. Geomark Research; 3. TCU Energy Institute)
- 9:20 Evaluation of Source and Reservoir Properties of Potential Unconventional Units An Artificial Maturation Approach: I. Arango, B. J. Katz (Chevron)
- 9:45 Using Geochemical Fingerprinting as a Direct Indicator of Zones Accessed by Induced Fractures in Horizontal Wells in the Wolfcamp and Spraberry Formations of the Midland Basin: M. Laughland<sup>1</sup>, D. K. Baskin<sup>2</sup> (1. Pioneer Natural Resources; 2. Weatherford Laboratories)
   10:10 Refreshment Break
- 10:50 Source Rock Potential and Sequence Stratigraphy of Bakken Shales in the Williston Basin: H. Jin², S. Sonnenberg¹, R. Sarg¹ (1. Colorado School of Mines; 2. BP America Inc.)
- 11:15 Addressing the Unconventional Caveats of Source Rock Pyrolysis: Modified Methods and Interpretive Ideas: R. R. King<sup>1</sup>, D. M. Jarvie<sup>3</sup>, D. Cannon<sup>2</sup> (1. ALS Empirica; 2. Diamondback Energy; 3. Texas Christian University)



\*Denotes presenter other than first author

#### **Rock Physics and Multiphase Flow**

Room 103

Co-Chairs: C. Clarkson, M. Honarpour and M. Mokhtari

- 8:25 Introductory Remarks
- 8:30 Rock Physics Model of the Eagle Ford Shale: C. M. Sayers, J. J. Walsh, K. Fisher, S. Dasgupta (Schlumberger)
- 8:55 **AMS: A Petrofabric Tool to Measure Fabric Anisotropy Across Shale Units:** G. Heij<sup>1</sup>, D. Elmore<sup>1</sup>, J. Roberts<sup>1</sup>, A. K. Steullet<sup>1</sup>, S. A. Dulin<sup>1</sup>, S. Friedman<sup>2</sup> (1. University of Oklahoma; 2. Southern Illinois University)
- 9:20 Contact Angle Measurements on Conventional and Unconventional Reservoir Cores: T. Teklu, W. Alameri, H. Kazemi, R. M. Graves (Colorado School of Mines)
- 9:45 Relative Permeability of Unconventional Mixed-Wet Rocks: H. Dehghanpour, Q. Lan, A. Habibi (University of Alberta)
- 10:10 Refreshment Break
- 10:50 Measuring Tensile Strength of Unconventional Shales Using Microwaving: J. Chen, D. Georgi, B. Lai (Aramco Research Centers-Houston)
- 11:15 Using Sonic and Resistivity Effective Medium Theories to Quantify the Influence of Rock Fabric on the Mechanical Properties of Organic Mudrocks: P. Sayar, C. Torres-Verdín (University of Texas at Austin)
- 11:40 Unconventional Shale Gas-Condensate Reservoir Performance Impact of Rock, Fluid and Rock-Fluid Properties and Their Variations: A. Orangi, N. Nagarajan, J. Rosenzweig (HESS Corporation)

#### **Production and Recovery Mechanisms: Can These Be Optimized?**

Room 001

Co-Chairs: S. Enayatpour, V. Jochen and H. Kalaei

- 8:25 Introductory Remarks
- 8:30 Numerical Study of Impact of Nano-Pores on Gas-Oil Ratio and Production Mechanisms in Liquid-Rich Shale Oil Reservoirs:
  M. Khoshqhadam, W. Lee, A. Khanal (University of Houston)
- 8:55 When Less Flowback is More: A Mechanism of Permeability Damage and Its Implications on the Application of EOR Techniques: R. Longoria, T. Liang, D. A. DiCarlo (University of Texas at Austin)
- 9:20 Automated Field Development Planning for Unconventional Shale Gas or Oil: P. Tilke¹, W. Zhou², Y. Wang², S. Krishnamurthy², M. Bhanushali², B. Samson², G. Grove², J. Spath², M. Thambynayagam² (1. Schlumberger-Doll Research; 2. Schlumberger)
- 9:45 Application of Real-Time Bottom-Hole Pressure to Improve Field Development Strategies in the Midland Basin Wolfcamp Shale: K. Scott, W. Chu, R. W. Flumerfelt (Pioneer Natural Resources)
- 10:10 Refreshment Break
- 10:50 Pseudo-Pressure and Pseudo-Time Analysis for Unconventional Oil Reservoirs With New Expressions for Average Reservoir Pressure during Transient Radial and Linear Flow: R. Roadifer, H. Kalaei (ConocoPhillips)
- 11:15 The Applicability of Surfactant-Based EOR Technique to Enhance the Productivity in Tight Formations: T. Liang, R. Longoria, D. A. DiCarlo (University of Texas at Austin)
- 11:40 Unraveling Minimum Liquid Yields From Variable PVT and Production Data in the Woodford Using EOS: C. Karacaer¹, T. Firincioglu¹, L. Thompson² (1. NITEC LLC; 2. Cimarex)

#### **Advances in Well Testing and Flow Analysis**

#### Room 006

Co-Chairs: D. Ilk, B. Poe and H. Xiong

- 8:25 Introductory Remarks
- 8:30 Is That Interference? A Workflow for Identifying and Analyzing Communication Through Hydraulic Fractures in a Multi-Well Pad:
  A. Awada\*1, M. Santo1, D. Lougheed1, D. Xu1, C. Virues2 (1. IHS Inc.; 2. Nexen Energy ULC)
- 8:55 A New 1-D Computational Fluid Dynamics Formation Evaluation Model (CFDFEM) During Treatment Injection and Flowback for Perforated Well Completions by Pressure Transient Testing: S. Madasu, A. Lin (Halliburton Energy Services Inc.)
- 9:20 Development and Application of a New Cost Effective Method for Estimation of Formation Pressure in Unconventional Reservoirs: Z. Nasizadeh¹, W. Lee¹, R. Abdollah-Pour², J. Adams² (1. University of Houston; 2. BP America Production Co.)
- 9:45 Assessing Impact of Shale Gas Adsorption on Free-Gas Permeability Via a Pore Network Flow Model: J. Ma, G. D. Couples\* (Heriot-Watt University)
- 10:10 Refreshment Break
- 10:50 Impact of Fluid, Rock and Hydraulic Fracture Properties on Reservoir Performance in Liquid-Rich Shale Oil Reservoirs:
   M. Khoshghadam, W. Lee, A. Khanal (University of Houston)
- 11:15 Flow Units in Shale Condensate Reservoirs: R. Aguilera (University of Calgary)
- 11:40 Rate Transient Effects of Various Complex Fracture Network Topologies in Unconventional Gas Reservoirs: A Numerical Simulation Study: J. Jiang¹, R. M. Younis¹, L. Thompson², Z. Liu\*¹ (1. University of Tulsa; 2. Cimarex Energy)

#### Stimulation Case Studies: What Works and What Doesn't?

Room 007

Co-Chairs: U. Ahmed, I. Aviles and R. Fulks

- 8:25 Introductory Remarks
- 8:30 Considering Far-Field Fracture Connectivity in Stimulation Treatment Designs in the Permian Basin: B. C. Klingensmith, M. Hossaini, S. Fleenor, K. Thomas (FTS International)
- 8:55 Integration of Microseismic Data and an Unconventional Fracture Modeling Tool to Generate the Hydraulically Induced Fracture Network: A Case Study From the Cardium Formation, West Central Alberta, Canada: X. Yu<sup>1</sup>, J. Rutledge<sup>1</sup>, S. Leaney<sup>1</sup>, J. Sun<sup>1</sup>, P. Pankaj<sup>1</sup>, X. Weng<sup>1</sup>, H. Onda<sup>1</sup>, M. Donovan<sup>1</sup>, J. Nielsen<sup>1</sup>, J. Duhault<sup>2</sup> (1. Schlumberger; 2. Lightstream Resources)



Please watch for team presentations which are given additional time to display integrated approaches to unconventional plays. Each team consists of no more than three members with different technical backgrounds (geosciences, petrophysics, engineering, operations, etc.).

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\*Denotes presenter other than first author

- 9:20 Monitoring and Imaging the Dynamics and Extent of Hydraulic Fracturing Fluid Movement Using Ground-Based Electromagnetics, With Application to the Eagle Ford Shale: M. S. Hickey<sup>1</sup>, S. Treviño<sup>1</sup>, M. Everett<sup>2</sup> (1. Deep Imaging Technologies, Inc; 2. Texas A&M University)
- 9:45 Multi-Fractured Plug-Less or Non-Isolated Stage Horizontal Shale Gas Well Placement Experiment in the Canadian Horn River Basin: C. Virues, P. Chernik, J. F. Pyecroft\*, D. Meeks, C. Petr, J. Lehmann (Nexen Energy ULC)

#### **Restimulation Practices and Results**

Room 007

Co-Chairs: U. Ahmed, I. Aviles, R. Fulks and J. Gujral

- 10:45 Introductory Remarks
- 10:50 Stress Field Change Due to Reservoir Depletion and its Impact on Refrac Treatment Design and SRV in Shale Reservoirs: J. Han, A. Sookprasong, R. Hurt (Baker Hughes)
- 11:15 Major Obstacles in Production From Hydraulically Re-Fractured Shale Formations: Reservoir Pressure Depletion and Pore Blockage by the Fracturing Fluid: M. Haddad, A. Sanaei, E. Waleed Al-Shalabi, K. Sepehrnoori (University of Texas at Austin)
- 11:40 Fracture Stages Optimization in Bakken Shale Formation: B. Ran, M. Kelkar (University of Tulsa)

#### **Applied Analytics: Life With Too Many Variables**

Room 008

Co-Chairs: J. Frantz and M. Gurfinkel

- 8:25 Introductory Remarks
- 8:30 Finding the Key Drivers of Oil Production Through SAS Data Integration and Analysis: B. Rollins, M. Herrin (Devon Energy)
- 9:20 **Data Analytics for Production Optimization in Unconventional Reservoirs:** S. Mishra<sup>1</sup>, J. Schuetter<sup>1</sup>, M. Zhong<sup>2</sup>, R. Lafollette<sup>2</sup> (1. Battelle Memorial Institute; 2. Baker Hughes)
- 9:45 Data Mining and Statistical Analysis of Completions in an Unconventional Play: The Canadian Montney Formation: M. A. Al-Alwani<sup>1</sup>, L. K. Britt<sup>2</sup>, S. Dunn-Norman<sup>1</sup> (1. Missouri University of Science and Technology; 2. NSI Fracturing LLC)
- 10:10 Refreshment Break
- 10:50 Formation Versus Completion: Determining the Main Drivers Behind Production From Shale A Case Study Using Data-Driven Analytics: S. D. Mohaghegh (West Virginia University)
- 11:15 **Deriving Unconventional Reservoir Predictive Models From Historic Data Using Case Base Reasoning:** L. A. Saputelli, A. Verde, Z. Haris (Frontender)
- Multivariate Classification for the Integration of Core, Log and Seismic Data on Intersecting Pre-Stack Inverted 2-D Seismic Lines, Lublin Basin, Poland: D. Handwerger¹, R. Castañeda-Aguilar¹, G. Vaaland Dahl², H. G. Borgos², J. Zacharski³, D. Krawiec³, A. Buniak³, W. Prugar³, R. Suarez-Rivera⁴ (1. Schlumberger Research; 2. Schlumberger Stavanger Research; 3. Orlen Upstream; 4. W.D. Von Gonten Laboratories LLC)

#### **Wednesday Morning ePapers**

#### Microseismic II: Does It Really Add Value?

Exhibition Hall, Station A

Co-Chairs: S. Maxwell, J. O'Brien and G. Sparkman

9:30 Identifying the Effectiveness of Treatment Programs with Microseismicity: J. W. Crowley, T. Urbancic, A. M. Baig (The Engineering Seismology Group)

#### **Modeling Flow in Complex Systems**

Exhibition Hall, Station B

Co-Chairs: S. Rhodes and D. Valleau

- 9:30 **3-D Finite Difference Modeling of Microseismic Source Mechanisms in the Wolfcamp Shale of the Permian Basin:** R. Meek¹, R. A. Hull¹, A. Von der Hoya¹, D. Eaton² (1. Pioneer Natural Resources; 2. University of Calgary)
- 9:55 **A Bundle of Short Conduits Model of the Pore Structure of Gas Shale:** C. Jiang<sup>1</sup>, S. Bryant<sup>2</sup>, H. Daigle<sup>1</sup> (1. University of Texas at Austin; 2. University of Calgary)
- 10:20 Computational Fluid Dynamics Modeling of Proppant Transport in a Plug and Perf Completion With Different Perforation Phasing: J. Zhang, S. Dunn-Norman\* (Missouri University of Science and Technology)
- 10:45 Shale Fluid Transport in Nano-Scale Networks: The Competing Roles of Fluid Properties, Interfaces and Network Geometry: S. A. Kelly, C. Torres-Verdín, M. T. Balhoff (University of Texas at Austin)
- 11:10 Use of Automatic Moment Tensor Inversion in Real Time Microseismic Imaging: M. Kratz, M. Thornton (Microseismic Inc)

#### Techniques for Imaging Unconventionals at Multiple Scales

Exhibition Hall, Station C

Co-Chairs: T. Olson and A. Rostami

10:20 Terrestrial LIDAR Imaging and Analysis of Natural Fractures in Chattanooga Shale in Northeastern Alabama: J. Clark, I. Cemen (University of Alabama)

#### The Bakken Reloaded

Exhibition Hall, Station C

Chair: C. Cipolla

10:45 Scaling Laboratory Data Surfactant Imbibition Rates to the Field in Fractured Shale Formations: D. Wang, J. Zhang, R. Butler (University of North Dakota)



\*Denotes presenter other than first author

#### **Wednesday Afternoon Oral Sessions**

#### **Production Optimization From Stimulation to Soaking: What Works?**

#### Ballroom A

Co-Chairs: K. Richter and M. Sorrell

- 1:45 Introductory Remarks
- 1:50 A Multidisciplinary Study of Stimulation Designs in the Three Forks Formation, North Dakota: M. Ostadhassan, B. Bubach (University of North Dakota)
- 2:15 Microseismic-Derived Ultimate Expected Fracture Half-Length in Unconventional Stimulated Reservoir Volume in a Multi-Fractured Horizontal 8 Well Full Pad Canadian Horn River Basin Case Study: C. Virues, J. Budge, E. Von Lunen (Nexen Energy ULC)
- 2:40 A Case Study: The Impact of Soaking on Well Performance in the Marcellus: E. Yaich<sup>1</sup>, S. Williams<sup>1</sup>, A. Bowser<sup>2</sup>, P. Goddard<sup>1</sup>, O. C. Diaz de Souza<sup>1</sup>, R. A. Foster<sup>2</sup> (1. BG Group; 2. EXCO Resources)
- 3:05 Automating Gas Lift Injection Rates Best Practices to Maximize Production: M. Machuca (Emerson)
- 3:30 Vaca Muerta: Challenging the Paradigm of Producing From a Shale Formation: J. F. Martinez, J. I. Alvarez Claramunt (YPF SA)

#### **Emerging Plays II: Which Ones Will Make The Cut?**

#### Room 103

Co-Chairs: G. Gillis, D. Hume and H. Meier

- 1:45 Introductory Remarks
- 1:50 A Regional Re-Evaluation of the Mississippi Lime Play, South-Central Kansas: The Risks and Rewards of Understanding Complex Geology in a Resource Play: B. Mitchell, K. Simpson (Shell Oil Company)
- 2:15 Quantitative and Qualitative Evaluation of Micro-Porosity in Qusaiba Hot Shale, Rub'Al-Khali Basin, Saudi Arabia: M. O. Abouelresh (King Fahd University of Petroleum & Minerals)
- 2:40 Where is the Vaca Muerta Sweet Spot? The Importance of Regional Facies Trends, Thickness Variations and Thermal Maturity in Generating Play Concepts: H. M. Reijenstein<sup>1</sup>, C. Lipinski<sup>4</sup>, M. Fantin<sup>2</sup>, S. A. Cuervo<sup>2</sup>, F. González Tomassini<sup>3</sup>, D. Kietzmann<sup>3</sup>, L. C. Crousse<sup>2</sup>, M. Vallejo<sup>2</sup> (1. Chevron; 2. Chevron Argentina; 3. Universidad de Buenos Aires; 4. Chevron Energy Technology Company)
- 3:05 Geomechanical Characterization of Shale Gas Reservoir Rocks for Design and Planning of Stimulation Treatment: A Cooper Basin Case Study: G. Bazunu¹, S. S. Rahman¹, F. D. Zhou¹, L. Wang² (1. University of New South Wales; 2. Geoscience Australia)
- 3:30 Initial Analysis of Hydrocarbon Potential in the Tablazo Formation; Center and Northern Areas of Middle Magdalena Valley, -MMV-Colombia: M. F. Jimenez Jacome, C. A. Rojas Suarez, Y. A. Valderrama Lopez (Ecopetrol)

## Calling Home From the Subsurface: Applications of Fiber Optics

Room 001

Co-Chairs: J. Gujral, D. Ilk and B. Poe

- 1:45 Introductory Remarks
- 1:50 Fiber Optic Revelations From a Multistage Open Hole Lateral Fracturing Treatment: J. Baihly¹, A. Dutt², E. Ejofodomi\*¹, A. Menkhaus¹, P. Dickenson¹, C. Wilson¹, K. England¹ (1. Schlumberger; 2. Forest Oil)
- 2:15 Monitoring Hydraulic Fracturing Operations Using Fiber-Optic Distributed Acoustic Sensing: K. Boone<sup>1</sup>, R. Crickmore<sup>1</sup>, Z. Werdeg<sup>1</sup>, C. Laing<sup>1</sup>, M. Molenaar<sup>2</sup> (1. OptaSense; 2. Shell Canada)
- 2:40 Fiber-Optic Monitoring: Stimulation Results From Unconventional Reservoirs: E. Holley, N. Kalia (Halliburton)
- 3:05 Importance of Downhole Measurements, Visualization and Analysis in Producing Unconventional Wells: L. E. Gonzalez, R. Chokshi\*, W. Lane (Weatherford)





Please watch for team presentations which are given additional time to display integrated approaches to unconventional plays. Each team consists of no more than three members with different technical backgrounds (geosciences, petrophysics, engineering, operations, etc.).

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#### Alchemy or Science? Chemostratigraphy for Depositional Environments and Facies

Room 006

Co-Chairs: B. Driskill, S. Rilling-Hall and N. Rosenau

- 1:45 Introductory Remarks
- 1:50 Using Nitrogen Isotopes to Evaluate Unconventional Resource Plays: T. M. Quan, J. Puckette, K. Rivera, B. Otto, E. Adigwe (Oklahoma State University)
- 2:15 The Use of Chemostratigraphy to Refine Ambiguous Sequence Stratigraphic Correlations in Marine Shales: An Example From the Woodford Shale, Oklahoma: B. Turner¹, J. Tréanton², R. M. Slatt¹ (1. University of Oklahoma; 2. Noble Energy)
- 2:40 Modeling TOC and Anoxia From Elemental Data: A Reality Check: M. Wright, K. Ratcliffe, E. Mathia (Chemostrat Inc.)
- 3:05 Identifying Landing Zones Utilizing High-Resolution X-Ray Fluorescence (XRF) Chemostratigraphy: J. Pierce, J. Parker (Chevron)

#### **Using Performance to Define Completion and Stimulation Strategies**

Room 007

Co-Chairs: J. Paktinat and M. Sharma

- 1:45 Introductory Remarks
- 1:50 Diagenetic Evolution of The Eagle Ford Formation, Southwest Texas: Impacts Upon Reservoir Quality and Rock Properties: R. T. McAllister¹, K. Taylor¹, B. Garcia-Fresca², C. Hollis¹ (1. University of Manchester; 2. Statoil Gulf Services LLC)
- 2:15 Condensate Decline Habits in the Maverick Basin Area of the Eagle Ford Play: D. Crighton, F. Montel (TOTAL SA)
- 2:40 History Match Case Study With a Multi-Cluster & Multi-Well Hydraulic Fracture Modeling Tool: Z. Zhai, E. Fonseca (Shell International F&P)
- 3:05 Improve Well Performance by Reducing Formation Damage: B. Goldstein<sup>1</sup>, K. Josyula<sup>1</sup>, A. VanZeeland<sup>1</sup>, M. Aboushabana<sup>1</sup>, T. Tran<sup>1</sup>, L. O'Connell<sup>2</sup>, M. Conway<sup>2</sup> (1. Fairmount Santrol; 2. Stim-Lab)
- 3:30 Successful Strategies for Cost Reduction in Plug and Ball Seat Milling Operations: D. McClatchie<sup>1</sup>, J. Kardash\*<sup>1</sup>, L. Thomas<sup>2</sup>, K. Lypkie<sup>2</sup> (1. Sanjel Corporation; 2. Nexen)

#### **Wednesday Afternoon Interactive Panel**

#### **Operations and Production Challenges - Planning for Long-Term Production**

**Time:** 1:45 p.m.–3:10 p.m.

Location: Room 008

Fee: Included with registration

Moderator: George Koperna, Vice President, Advanced Resources International

More than 95 percent of all U.S. oil wells require some form of artificial lift from the start of production. Various pumping methods employed today include beam/sucker rod, gas lift, plunger lift, electric submersible, progressing cavity and subsurface hydraulic pumps. These artificial lift methods coupled with new advances in digital oil field automation allow greater efficiency and less downtime. Yet challenges remain both in equipping extended-reach lateral wells and creating a stable and robust automated monitoring system. The panel will review and assess the current and emerging technologies that are being used to enhance long-term performance for gas and liquids-rich shale wells.

- 1:45 Introductory Remarks
- 1:50 Richard Luht, Executive Technology Leader, GE Global Research
- 2:00 Shauna G. Noonan, Completion Technology Manager, ConocoPhillips
- 2:10 **Kyel Hodenfield**, Vice President, Artificial Lift, Schlumberger
- 2:20 Alex Vilcinskas, Senior Artificial Lift Advisor, Baker Hughes
- 2:30 Moderated Panel
- 2:50 Audience Q & A

\*Denotes presenter other than first author

#### Presented by: SPE/AAPG/SEG Cooperation Committee

#### **Appraisal and Development of Unconventional Reservoirs**

Date: Thursday

Time: 8:00 a.m.-5:00 p.m.

Location: Grand Hyatt San Antonio, Texas Ballroom D, fourth floor

Fee: URTeC Registrants: Professional \$195, Student \$35; Non-Conference Registrants: Professional \$395

Includes: Course notes, lunch and refreshments

Limit: 200 people

After the presentations, there will be a panel discussion in which speakers and the attendees will help to identify the most fruitful areas of future research for unconventional resource development. A white paper will be written as a result of this Panel Session, which can be used both as notes and as a guide for future events addressing specific assessment and development problems.

	Time	Presentations	Operator	Unconventional Reservoir
	8:00 a.m8:15 a.m.	Bob Poe, Creties Jenkins, James Rector	SPE, AAPG & SEG Chairmen	Introductory remarks Agenda
1	8:15 a.m.–8:45 a.m.	"Multi-Disciplinary Assessment and Development of Eagle Ford: Evolution in Well and Stage Spacing" Basak Kurtoglu and Alejandro de la Pena	Marathon Oil	Eagle Ford
	8:45 a.m9:10 a.m.	Discussion		
2	9:10 a.m.–9:40 a.m.	"A Multi-Disciplinary Approach to Completions and Field Development in the Bakken and Three Forks" Troy Kisner, Ted Dohmen and Ellie Chuparova	Hess Corporation	Bakken
	9:40 a.m10:05 a.m.	Discussion		
3	Morning Break (25 Minutes)			
	10:30 a.m11:00 a.m.	"The Application of New Technologies to Wellbore and Field Optimization in the Marcellus Shale, Appalachian Basin, USA" David "Randy" Blood	EQT Resources	Marcellus
	11:00 a.m11:25 a.m.	Discussion		
4	11:25 a.m.–11:55 a.m.	"Completion Optimization in the North Montney, British Columbia" George Voneiff, Peter Bastian, John Jochen and Brad Wolters	Unconventional Resources	Montney
	11:55 a.m12:20 p.m.	Discussion		
5	Lunch (40 Minutes)			
	1:00 p.m.–1:30 p.m.	"Haynesville Shale Productivity and Recoverable Reserves — Shrinking Stimulated Rock Volumes, Fracture Conductivity Losses, Depletion or All of the Above" Marcia Simpson	EXCO Resources	Haynesville
	1:30 p.m.–1:55 p.m.	Discussion		
6	1:55 p.m.–2:25 p.m.	"Multi-Disciplinary Assessment and Development: Learnings From the Fayetteville" Ed Salmon and Josh Froelich	Southwestern Energy	Fayetteville
	2:25 p.m.–2:50 p.m.	Discussion		
7	2:50 p.m.–4:00 p.m. Open Discussion	Round Table Discussion Wrap Up		

	NAME	DAY	TIME	LOCATION	SESSION TITLE
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A	Abouelresh, Mohamed	Wed.	2:15 p.m.	Room 103	Emerging Plays II: Which Ones Will Make The Cut?
A	Adams, Jennifer	Mon.	2:15 p.m.	Ballroom A	New Developments in the Permian Basin
	Aguilera, Roberto	Wed.	11:15 a.m.	Room 006	Advances in Well Testing and Flow Analysis
	Ahmed, Usman	Tue.	4:20 p.m.	Room 008	Interactive Panel: Sweet Spotting – Isn't This Our Goal?
	Akbarabadi, Morteza	Tue.	11:40 a.m.	Ballroom A	Imaging Dynamic Processes at the Pore Scale
	Akkutlu, Yucel	Tue.	2:40 p.m.	Room 001	Reservoir Production Modeling: The Enigmas From Nano-Flow Behavior to EUR
	Al Duhailan, Mohammed	Mon.	1:50 p.m.	Room 006	Fracture Detection and Evaluation: A Cross-Discipline Challenge
	Al-Alwani, Mustafa	Wed.	9:45 a.m.	Room 008	Applied Analytics: Life With Too Many Variables
	Albrecht, Tony	Mon.	2:40 p.m.	Room 007	Emerging Plays I: Which Ones Will Make the Cut?
	Amer, Aimen	Tue.	10:45 a.m.	Exhibition Hall, Station A	Evaluating and Modeling Kerogen and Petroleum Fluids I
	Arango, Irene	Wed.	9:20 a.m.	Ballroom B	Evaluating and Modeling Kerogen and Petroleum Fluids
	Austin, Jack	Tue.	11:15 a.m.	Room 006	Integrated Completion Design: Challenging the Status Quo
	Awada, Ali	Wed.	8:30 a.m.	Room 006	Advances in Well Testing and Flow Analysis
	Baig, Adam	Tue.	11:15 a.m.	Room 007	Natural Fractures and Your Completion Design
В	Baihly, Jason	Mon.	10:50 a.m.	Room 008	Scaling the Midstream for Unconventionals
	Baihly, Jason	Tue.	2:15 p.m.	Room 007	Forecasting Production in Unconventional Reservoirs: Getting the Real EUR to the Podium
	Baldwin, Patrick	Tue.	1:50 p.m.	Exhibition Hall, Station A	Characterization of Shales: Chemostratigraphy and Geochemistry
	Barzola, Gervasio	Tue.	4:10 p.m.	Room 008	Interactive Panel: Sweet Spotting - Isn't This Our Goal?
	Baudendistel, Ted	Tue.	10:50 a.m.	Room 001	Management of Groundwater Protection and Legacy Wells
	Bazunu, Gamaliel	Wed.	3:05 p.m.	Room 103	Emerging Plays II: Which Ones Will Make The Cut?
	Biggs, Barry	Tue.	9:05 a.m.	Lila Cockrell Theatre	Executive Plenary Session
	Billingsley, Lee	Mon.	4:10 p.m.	Ballroom B	Eagle Ford: The Journey Continues I
	Boone, Kevin	Wed.	2:15 p.m.	Room 001	Calling Home From the Subsurface: Applications of Fiber Optics
	Brinkerhoff, Riley	Tue.	3:45 p.m.	Room 006	The Bakken Reloaded
	Brooks, Scott	Wed.	8:30 a.m.	Ballroom A	Eagle Ford: The Journey Continues II
	Buchwalter, Edwin	Tue.	4:35 p.m.	Room 103	Techniques for Imaging Unconventionals at Multiple Scales
	Bui, Khoa	Mon.	2:40 p.m.	Exhibition Hall, Station A	Enabling and Applied Technologies
	Cadenhead, John	Tue.	8:50 a.m.	Lila Cockrell Theatre	Executive Plenary Session
C	Cadwallader, Stephan	Tue.	1:50 p.m.	Ballroom A	Completion and Stimulation Practices: What To Do With All That Horsepower
	Carpenter, Steven	Mon.	11:15 a.m.	Room 001	Stakeholder Engagement and Social Responsibility
	Carpenter, Steven	Mon.	2:15 p.m.	Exhibition Hall, Station A	Enabling and Applied Technologies
	Cavanaugh, Tim	Tue.	5:00 p.m.	Room 103	Techniques for Imaging Unconventionals at Multiple Scales
	Chen, Bo	Tue.	2:15 p.m.	Ballroom B	Reservoir Characterization and Mapping the Ethereal Sweetspot
	Chen, Jinhong	Wed.	10:50 a.m.	Room 103	Rock Physics and Multiphase Flow
	Chidiac, Cedric	Mon.	11:40 a.m.	Room 008	Scaling the Midstream for Unconventionals
	Chokshi, Rajan	Wed.	3:05 p.m.	Room 001	Calling Home From the Subsurface: Applications of Fiber Optics
	Civan, Faruk	Mon.	1:50 p.m.	Exhibition Hall, Station B	Forecasting Production in Unconventional Reservoirs
	Clark, Jeff	Wed.	10:20 a.m.	Exhibition Hall, Station C	Techniques for Imaging Unconventionals at Multiple Scales
	Clarkson, Christopher	Tue.	1:50 p.m.	Room 007	Forecasting Production in Unconventional Reservoirs: Getting the Real EUR to
					the Podium
	Collins, Dylan	Mon.	3:45 p.m.	Ballroom A	New Developments in the Permian Basin
	Constance, Paul	Tue.	3:45 p.m.	Ballroom B	Reservoir Characterization and Mapping the Ethereal Sweetspot
	Copeland, Dylan	Tue.	2:15 p.m.	Exhibition Hall, Station C	Microseismic I: Does It Really Add Value?
	Cortis, Andrea	Tue.	2:15 p.m.	Room 008	Characterization of Facies Through Rock Physics: Petrophysics and Seismic Data
	Couples, Gary	Wed.	9:45 a.m.	Room 006	Advances in Well Testing and Flow Analysis
	Crighton, David	Wed.	2:15 p.m.	Room 007	Using Performance to Define Completion and Stimulation Strategies
	Crousse, Luisa	Mon.	2:15 p.m.	Room 001	Progress Update for the Vaca Muerta
	Crowley, John	Wed.	9:30 a.m.	Exhibition Hall, Station A	Microseismic II: Does It Really Add Value?
	Dahi Taleghani, Arash	Mon.	2:15 p.m.	Room 006	Fracture Detection and Evaluation: A Cross-Discipline Challenge
D	Dahi Taleghani, Arash	Tue.	3:55 p.m.	Exhibition Hall, Station C	Microseismic I: Does It Really Add Value?
	Dahl, Jeremy	Tue.	10:50 a.m.	Ballroom A	Imaging Dynamic Processes at the Pore Scale
	Dehghanpour, Hassan	Wed.	9:45 a.m.	Room 103	Rock Physics and Multiphase Flow
	Dembicki, Michael	Mon.	10:50 a.m.	Ballroom B	The Montney in Development Mode
	Dernaika, Moustafa	Tue.	2:40 p.m.	Room 103	Techniques for Imaging Unconventionals at Multiple Scales
	Devegowda, Deepak	Mon.	2:40 p.m.	Room 008	Geomechanics of Hydraulic Fracturing: A Place Where Geology Meets Engineering
	Devegowda, Deepak	Tue.	3:55 p.m.	Exhibition Hall, Station A	Evaluating and Modeling Kerogen and Petroleum Fluids II
	Ding, Xiujian	Tue.	2:40 p.m.	Exhibition Hall, Station B	China Case Studies
	Donovan, Arthur	Mon.	2:15 p.m.	Ballroom B	Eagle Ford: The Journey Continues I
	Doucette, Paul	Mon.	10:50 a.m.	Room 001	Stakeholder Engagement and Social Responsibility
	Du, Jinling	Tue.	2:40 p.m.	Room 008	Characterization of Facies Through Rock Physics: Petrophysics and Seismic
	Da, Jilling	Tue.	2.40 p.m.	HOOH OOO	Data



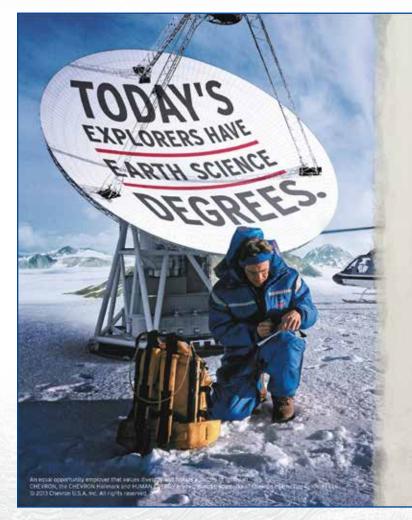
ă	NAME	DAY	TIME	LOCATION	SESSION TITLE
E	Dunn-Norman, Shari Ejofodomi, Efejera Ejofodomi, Efejera El Ghonimy, Rana Elrafie, Emad Elrafie, Emad	Wed. Wed. Wed. Mon. Mon. Tue.	10:20 a.m. 10:50 a.m. 1:50 p.m. 11:40 a.m. 5:00 p.m. 10:50 a.m.	Exhibition Hall, Station B Ballroom A Room 001 Ballroom A Room 006 Room 008	Modeling Flow in Complex Systems  Eagle Ford: The Journey Continues II Calling Home From the Subsurface: Applications of Fiber Optics The Niobrara in Development Mode Fracture Detection and Evaluation: A Cross-Discipline Challenge Multidisciplinary Integration: Some Surprising Outcomes
F	Farid Ibrahim, Ahmed Farrell, Jesse Ferguson, Neil Fluckiger, Samuel Fogden, Andrew Franseen, Evan	Mon. Mon. Mon. Tue. Tue. Mon.	10:20 a.m. 3:55 p.m. 3:05 p.m. 11:15 a.m. 11:15 a.m. 5:00 p.m.	Exhibition Hall, Station A Exhibition Hall, Station A Exhibition Hall, Station B Room 103 Ballroom A Room 007	Applied Analytics and Case History of Modeling Social Responsibility, Water Management and Groundwater Protection Surface and Midstream Western U.S. Case Studies: More Upside in the Rockies! Imaging Dynamic Processes at the Pore Scale Emerging Plays I: Which Ones Will Make the Cut?
G	Gaurav, Abhishek Gil, Ivan Giusti, Luis Goldstein, Brian Goral, Jan Grossi, Paolo Grossi, Paolo	Mon. Tue. Mon. Wed. Tue. Mon. Won. Wed.	2:15 p.m. 3:45 p.m. 8:50 a.m. 3:05 p.m. 10:50 a.m. 5:00 p.m. 8:55 a.m.	Exhibition Hall, Station B Ballroom A Lila Cockrell Theatre Room 007 Ballroom B Ballroom B Ballroom A	Forecasting Production in Unconventional Reservoirs Completion and Stimulation Practices: What To Do With All That Horsepower Theatre Opening Plenary Session Using Performance to Define Completion and Stimulation Strategies Modeling Well Spacing and Multiscale Transport Eagle Ford: The Journey Continues I Eagle Ford: The Journey Continues II
Н	Haddad, Mahdi Hakim Elahi, Siavash Hammack, Richard Han, Jiahang Handwerger, David Hargrove, Ulysses He, Xunyun Heij, Gerhard Heinrichs, Mike Herwanger, Jorg	Wed. Mon. Tue. Wed. Wed. Mon. Tue. Wed. Mon. Mon. Mon.	11:15 a.m. 3:45 p.m. 11:15 a.m. 10:50 a.m. 11:40 a.m. 4:10 p.m. 3:05 p.m. 8:55 a.m. 4:20 p.m. 1:50 p.m.	Room 007 Room 006 Room 001 Room 007 Room 008 Room 007 Exhibition Hall, Station B Room 103 Exhibition Hall, Station A Room 008	Restimulation Practices and Results Fracture Detection and Evaluation: A Cross-Discipline Challenge Management of Groundwater Protection and Legacy Wells Restimulation Practices and Results Applied Analytics: Life With Too Many Variables Emerging Plays I: Which Ones Will Make the Cut? China Case Studies Rock Physics and Multiphase Flow Social Responsibility, Water Management and Groundwater Protection Geomechanics of Hydraulic Fracturing: A Place Where Geology Meets
	Hickey, Mark Holdenfield, Kyel Holley, Eric Honarpour, Matt	Wed. Wed. Wed. Mon.	9:20 a.m. 2:10 p.m. 2:40 p.m. 4:10 p.m.	Room 007 Room 008 Room 001 Room 008	Engineering Stimulation Case Studies: What Works and What Doesn't? Interactive Panel: Operations and Production Challenges – Planning for Long-Term Production Calling Home From the Subsurface: Applications of Fiber Optics Interactive Panel: Opportunities and Challenges of Liquid Recovery From Tight Rock
	Hudson, Matthew Hugot, Alexandre Hull, David Hull, Robert	Mon. Mon. Mon. Mon.	11:10 a.m. 10:50 a.m. 1:50 p.m. 1:50 p.m.	Exhibition Hall, Station C Room 103 Ballroom B Room 103	Measure Twice and Stimulate Once: The Mantra of Optimized Completions Microseismic and Reservoir Volumes Eagle Ford: The Journey Continues I Microseismic: The Quest for Added Value
J	Jarvie, Daniel Jenssen, Hans Peter Jiang, Chunbi Jimenez Jacome, Miguel Jin, Hui Jin, Zhijun	Wed. Mon. Wed. Wed. Wed. Mon.	8:55 a.m. 3:05 p.m. 9:55 a.m. 3:30 p.m. 10:50 a.m. 4:10 p.m.	Ballroom B Exhibition Hall, Station A Exhibition Hall, Station B Room 103 Ballroom B Room 001	Evaluating and Modeling Kerogen and Petroleum Fluids Enabling and Applied Technologies Modeling Flow in Complex Systems Emerging Plays II: Which Ones Will Make The Cut? Evaluating and Modeling Kerogen and Petroleum Fluids Progress Update for the Vaca Muerta
K	Karacaer, Caner Kardash, Jake Karrenbach, Martin Kausik.K.V, Ravinath Kelkar, Mohan Kelly, Shaina Khoshghadam, Mohammad Khoshghadam, Mohammad King, George King, Michael King, R. Klingensmith, Brandon Kratz, Michael	Wed. Wed. Mon. Tue. Tue. Wed. Wed. Tue. Tue. Wed. Used. Tue. Wed. Wed. Wed. Wed.	11:40 a.m. 3:30 p.m. 4:10 p.m. 4:35 p.m. 5:00 p.m. 10:45 a.m. 8:30 a.m. 10:50 a.m. 4:00 p.m. 4:35 p.m. 11:15 a.m. 8:30 a.m.	Room 001 Room 007 Room 103 Room 006 Room 006 Exhibition Hall, Station B Room 001 Room 006 Room 008 Room 001 Ballroom B Room 007 Exhibition Hall, Station B	Production and Recovery Mechanisms: Can These Be Optimized? Using Performance to Define Completion and Stimulation Strategies Microseismic: The Quest for Added Value The Bakken Reloaded The Bakken Reloaded Modeling Flow in Complex Systems Production and Recovery Mechanisms: Can These Be Optimized? Advances in Well Testing and Flow Analysis Interactive Panel: Sweet Spotting – Isn't This Our Goal? Reservoir Production Modeling: The Enigmas From Nano-Flow Behavior to EUR Evaluating and Modeling Kerogen and Petroleum Fluids Stimulation Case Studies: What Works and What Doesn't? Modeling Flow in Complex Systems
L	Lacazette, Alfred Landry, Christopher Lao, Mudan Laughland, Matthew	Tue. Mon. Tue. Wed.	2:40 p.m. 11:40 a.m. 1:50 p.m. 9:45 a.m.	Exhibition Hall, Station C Room 007 Ballroom B Ballroom B	Microseismic I: Does It Really Add Value? Studies in Storage and Transport at the Nano-Pore Level Reservoir Characterization and Mapping the Ethereal Sweetspot Evaluating and Modeling Kerogen and Petroleum Fluids

	NAME	DAY	TIME	LOCATION	SESSION TITLE
			4.50	D 001	
	Legarreta, Leonardo	Mon.	1:50 p.m.	Room 001	Progress Update for the Vaca Muerta
	Leong, Chew Yeong	Mon.	3:45 p.m.	Ballroom B	Eagle Ford: The Journey Continues I
	Leung, Juliana	Mon.	2:15 p.m.	Room 008	Geomechanics of Hydraulic Fracturing: A Place Where Geology Meets Engineering
	Li, Fangyu	Mon.	4:10 p.m.	Room 006	Fracture Detection and Evaluation: A Cross-Discipline Challenge
	Li, Huina	Tue.	2:15 p.m.	Room 006	The Bakken Reloaded
	Li, Ylnghui	Mon.	2:40 p.m.	Exhibition Hall, Station C	Production and Recovery Mechanisms
	Liang, Tianbo	Wed.	11:15 a.m.	Room 001	Production and Recovery Mechanisms: Can These Be Optimized?
	Licitra, Diego	Mon.	4:35 p.m.	Room 001	Progress Update for the Vaca Muerta
	Lindner, Philip	Wed.	9:45 a.m.	Ballroom A	Eagle Ford: The Journey Continues II
	Liu, Zhe	Wed.	11:40 a.m.	Room 006	Advances in Well Testing and Flow Analysis
	Longoria, Rafael	Wed.	8:55 a.m.	Room 001	Production and Recovery Mechanisms: Can These Be Optimized?
	Loughry, Donny	Mon.	2:40 p.m.	Ballroom A	New Developments in the Permian Basin
	Luht, Richard	Wed.	1:50 p.m.	Room 008	Interactive Panel: Operations and Production Challenges - Planning for Long-
					Term Production
	MacFarlane, Tyler	Mon.	11:15 a.m.	Ballroom B	The Montney in Development Mode
M	Machuca, Michael	Wed.	3:05 p.m.	Ballroom A	Production Optimization From Stimulation to Soaking: What Works?
	Madasu, Srinath	Wed.	8:55 a.m.	Room 006	Advances in Well Testing and Flow Analysis
	Martinez, Juan	Wed.	3:30 p.m.	Ballroom A	Production Optimization From Stimulation to Soaking: What Works?
	Maus, Stefan	Mon.	11:15 a.m.	Room 006	Optimized Well Placement
	Maxwell, Shawn	Mon.	2:40 p.m.	Room 103	Microseismic: The Quest for Added Value
	McAllister, Richard	Wed.	1:50 p.m.	Room 007	Using Performance to Define Completion and Stimulation Strategies
	Meek, Robert	Tue.	11:15 a.m.	Ballroom B	Modeling Well Spacing and Multiscale Transport
	Meek, Robert	Wed.	9:30 a.m.	Exhibition Hall, Station B	Modeling Flow in Complex Systems
	Mehmani, Ayaz	Tue.	1:50 p.m.	Room 103	Techniques for Imaging Unconventionals at Multiple Scales
	Meighan, Hallie	Mon.	3:45 p.m.	Room 103	Microseismic: The Quest for Added Value
	Meng, Xingbang	Mon.	3:30 p.m.	Exhibition Hall, Station A	Enabling and Applied Technologies
	Michael, Eric	Mon.	4:20 p.m.	Room 008	Interactive Panel: Opportunities and Challenges of Liquid Recovery From Tight
	Minhan Orillanda		11.10	D 001	Rock
	Mishra, Srikanta	Mon.	11:40 a.m.	Room 001	Stakeholder Engagement and Social Responsibility
	Mishra, Srikanta	Wed.	9:20 a.m.	Room 008	Applied Analytics: Life With Too Many Variables
	Misra, Siddharth	Mon. Wed.	10:50 a.m.	Room 007 Room 103	Studies in Storage and Transport at the Nano-Pore Level
	Mitchell, Bruce	Tue.	1:50 p.m.	Room 007	Emerging Plays II: Which Ones Will Make The Cut?
	Mittal, Rohit	iue.	4:35 p.m.	NOOIII 007	Forecasting Production in Unconventional Reservoirs: Getting the Real EUR to the Podium
	Mohaghegh, Shahab	Wed.	10:50 a.m.	Room 008	Applied Analytics: Life With Too Many Variables
	Moriarty, Bruce	Mon.	2:40 p.m.	Ballroom B	Eagle Ford: The Journey Continues I
	Moyer, Charles	Mon.	11:40 a.m.	Room 006	Optimized Well Placement
	Nasizadeh, Zoha	Wed.	8:35 a.m.	Room 006	Advances in Well Testing and Flow Analysis
N	Nava, Michael	Tue.	3:05 p.m.	Exhibition Hall, Station C	Microseismic I: Does It Really Add Value?
	Newgord, Chelsea	Tue.	2:40 p.m.	Room 006	The Bakken Reloaded
	Nikhanj, Manuj	Tue.	9:05 a.m.	Lila Cockrell Theatre	Executive Plenary Session
	Noonan, Shauna	Wed.	2:00 p.m.	Room 008	Interactive Panel: Operations and Production Challenges – Planning for Long-
	reonari, chadha	mod.	2.00 p.m.	1100111 000	Term Production
	Orangi, Abdollah	Wed.	11:40 a.m.	Room 103	Rock Physics and Multiphase Flow
	Ostadhassan, Mehdi	Wed.	1:50 p.m.	Ballroom A	Production Optimization From Stimulation to Soaking: What Works?
	Ouenes, Ahmed	Tue.	11:40 a.m.	Room 007	Natural Fractures and Your Completion Design
	Ozkan, Erdan	Mon.	3:50 p.m.	Room 008	Interactive Panel: Opportunities and Challenges of Liquid Recovery From Tight
	oznan, zraan		0.00 p		Rock
	Patton, Kathryn	Mon.	4:35 p.m.	Ballroom B	Eagle Ford: The Journey Continues I
P	Pierce, John	Wed.	3:05 p.m.	Room 006	Alchemy or Science? Chemostratigraphy for Depositional Environments and
	1 10100, 001111	mod.	0.00 p.m.	Tiooni ooo	Facies
	Piri, Mohammad	Mon.	4:00 p.m.	Room 008	Interactive Panel: Opportunities and Challenges of Liquid Recovery From Tight
			-		Rock
	Pirie, lain	Mon.	11:15 a.m.	Ballroom A	The Niobrara in Development Mode
	Poliannikov, Oleg	Tue.	1:50 p.m.	Exhibition Hall, Station C	Microseismic I: Does It Really Add Value?
	Popovici, Alexander	Mon.	2:40 p.m.	Room 006	Fracture Detection and Evaluation: A Cross-Discipline Challenge
	Pordel Shahri, Mojtaba	Tue.	2:15 p.m.	Ballroom A	Completion and Stimulation Practices: What To Do With All That Horsepower
	Prapoo, Hema	Mon.	1:50 p.m.	Exhibition Hall, Station A	Enabling and Applied Technologies
	Pyecroft, James	Wed.	9:45 a.m.	Room 007	Stimulation Case Studies: What Works and What Doesn't?
	Qin, Guan	Mon.	11:15 a.m.	Room 007	Studies in Storage and Transport at the Nano-Pore Level
Q	Qin, Guan	Tue.	1:50 p.m.	Exhibition Hall, Station B	China Case Studies
	Quan, Tracy	Wed.	1:50 p.m.	Room 006	Alchemy or Science? Chemostratigraphy for Depositional Environments and
					Facies
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NAME	DAY	TIME	LOCATION	SESSION TITLE
Raji, Munira	Mon.	10:45 a.m.	Exhibition Hall, Station B	Architectural Analysis of Unconventionals: A Material Science Approach
Ran, Bo	Wed.	11:40 a.m.	Room 007	Restimulation Practices and Results
Rao, Jonna	Mon.	2:40 p.m.	Room 001	Progress Update for the Vaca Muerta
Rastogi, Ayush	Tue.	3:45 p.m.	Room 007	Forecasting Production in Unconventional Reservoirs: Getting the Real EUR to the Podium
Reijenstein , Hernan	Wed.	2:40 p.m.	Room 103	Emerging Plays II: Which Ones Will Make The Cut?
Rimedio, Milena	Tue.	4:10 p.m.	Room 001	Reservoir Production Modeling: The Enigmas From Nano-Flow Behavior to EUR
Roadifer, Randy	Wed.	10:50 a.m.	Room 001	Production and Recovery Mechanisms: Can These Be Optimized?
Rodriguez, Luz	Mon.	3:45 p.m.	Room 001	Progress Update for the Vaca Muerta
Rollins, Beau	Wed.	8:30 a.m.	Room 008	Applied Analytics: Life With Too Many Variables
Rowe, Harry	Tue.	2:40 p.m.	Exhibition Hall, Station A	Characterization of Shales: Chemostratigraphy and Geochemistry
Roy, Pratanu	Tue.	11:10 a.m.	Exhibition Hall, Station B	Phase Behavior and Reservoir Production Modeling
Safari, Reza Santacruz, Carlos	Tue. Tue.	4:10 p.m. 2:40 p.m.	Ballroom A Room 007	Completion and Stimulation Practices: What To Do With All That Horsepower Forecasting Production in Unconventional Reservoirs: Getting the Real EUR to
Constalli Luini	\\/ad	11.15 0 00	Deam 000	the Podium
Saputelli, Luigi	Wed.	11:15 a.m.	Room 008	Applied Analytics: Life With Too Many Variables
Sayar, Paul	Wed.	11:15 a.m.	Room 103	Rock Physics and Multiphase Flow
Sayers, Colin	Wed.	8:30 a.m.	Room 103	Rock Physics and Multiphase Flow
Schwartz, Kenneth	Mon.	1:50 p.m.	Ballroom A	New Developments in the Permian Basin
Scott, Kyle	Wed.	9:45 a.m.	Room 001	Production and Recovery Mechanisms: Can These Be Optimized?
Seifert, Mike	Mon.	11:40 a.m.	Ballroom B	The Montney in Development Mode
Settgast, Randolph	Tue.	4:35 p.m.	Ballroom A	Completion and Stimulation Practices: What To Do With All That Horsepower
Shelley, Robert	Tue.	2:40 p.m.	Ballroom A	Completion and Stimulation Practices: What To Do With All That Horsepower
Sherman, Christopher	Tue.	4:20 p.m.	Exhibition Hall, Station C	Microseismic I: Does It Really Add Value?
Shields, Austin	Mon.	4:35 p.m.	Ballroom A	New Developments in the Permian Basin
Sicking, Charles	Mon.	11:40 a.m.	Room 103	Microseismic and Reservoir Volumes
Sieminski, Adam	Mon.	8:35 a.m.	Lila Cockrell Theatre	Opening Plenary Session
Singleton, Scott	Tue.	4:10 p.m.	Ballroom B	Reservoir Characterization and Mapping the Ethereal Sweetspot
Smart, Denver	Mon.	11:15 a.m.	Room 008	Scaling the Midstream for Unconventionals
Snyder, Dj	Mon.	4:10 p.m.	Ballroom A	New Developments in the Permian Basin
Socianu, Alexa	Mon.	4:35 p.m.	Room 007	Emerging Plays I: Which Ones Will Make the Cut?
Soeder, Daniel	Tue.	5:00 p.m.	Ballroom A	Completion and Stimulation Practices: What To Do With All That Horsepower
Soldo, Juan	Mon.	2:15 p.m.	Room 007	Emerging Plays I: Which Ones Will Make the Cut?
Soltanzadeh, Mehrdad	Mon.	10:50 a.m.	Room 006	Optimized Well Placement
Soltanzadeh, Mehrdad	Tue.	10:50 a.m.	Room 007	Natural Fractures and Your Completion Design
Sonnenberg, Steve	Tue.	10:50 a.m.	Room 103	Western U.S. Case Studies: More Upside in the Rockies!
Sonnenberg, Steve	Tue.	4:10 p.m.	Room 006	The Bakken Reloaded
Sonnenfeld, Mark	Mon.	10:50 a.m.	Ballroom A	The Niobrara in Development Mode
Sorensen, James	Tue.	1:50 p.m.	Room 006	The Bakken Reloaded
Spaid, John	Tue.	10:50 a.m.	Room 006	Integrated Completion Design: Challenging the Status Quo
Stankiewicz, Artur	Wed.	8:30 a.m.	Ballroom B	Evaluating and Modeling Kerogen and Petroleum Fluids
Strauss, Josiah	Tue.	10:20 a.m.	Exhibition Hall, Station A	Evaluating and Modeling Kerogen and Petroleum Fluids I
Stuckman, Mengling	Tue.	11:40 a.m.	Room 001	Management of Groundwater Protection and Legacy Wells
Sturm, Stephen	Tue.	11:40 a.m.	Room 008	Multidisciplinary Integration: Some Surprising Outcomes
Sun, Hao	Tue.	1:50 p.m.	Room 001	Reservoir Production Modeling: The Enigmas From Nano-Flow Behavior to EUR
Sun, Tie	Wed.	9:20 a.m.	Ballroom A	Eagle Ford: The Journey Continues II
				•
Teff, Joe	Mon.	4:35 p.m.	Room 103	Microseismic: The Quest for Added Value
Teklu, Tadesse Weldu	Wed.	9:20 a.m.	Room 103	Rock Physics and Multiphase Flow
Thararoop, Prob	Tue.	5:00 p.m.	Room 001	Reservoir Production Modeling: The Enigmas From Nano-Flow Behavior to EUR
Tilke, Peter	Wed.	9:20 a.m.	Room 001	Production and Recovery Mechanisms: Can These Be Optimized?
Tinnin, Beau	Wed.	11:15 a.m.	Ballroom A	Eagle Ford: The Journey Continues II
Toralde, Julmar Shaun	Mon.	4:35 p.m.	Room 006	Fracture Detection and Evaluation: A Cross-Discipline Challenge
Turner, Bryan	Wed.	2:15 p.m.	Room 006	Alchemy or Science? Chemostratigraphy for Depositional Environments and Facies
Uland, Mike Urbancic, Ted	Mon. Mon.	1:50 p.m. 2:15 p.m.	Room 007 Room 103	Emerging Plays I: Which Ones Will Make the Cut? Microseismic: The Quest for Added Value
Van de Wetering, Nikola	Tue.	3:05 p.m.	Exhibition Hall, Station A	Characterization of Shales: Chemostratigraphy and Geochemistry
Vassilellis, George	Tue.	11:35 a.m.	Exhibition Hall, Station C	Well Testing and Production Optimization
Vaughn, Tony	Mon.	9:05 a.m.	Lila Cockrell Theatre	Opening Plenary Session
Vilcinskas, Alex	Wed.	2:20 p.m.	Room 008	Interactive Panel: Operations and Production Challenges – Planning for Long-
viidiiidikas, AIGA	vvcu.	2.20 p.m.	1100111 000	Term Production
Virues, Claudio	Wed.	2:15 p.m.	Ballroom A	Production Optimization From Stimulation to Soaking: What Works?
Walls, Joel	Tue.	2:15 p.m.	Room 103	Techniques for Imaging Unconventionals at Multiple Scales
, 5551	140.	25 p.iii.		

	NAME	DAY	TIME	LOCATION	SESSION TITLE
W	Wang, Dongmei Wang, Haihong	Wed. Tue.	10:45 a.m. 1:50 p.m.	Exhibition Hall, Station C Room 008	The Bakken Reloaded Characterization of Facies Through Rock Physics: Petrophysics and Seismic Data
	Warpinski, Norm Washburn, Kathryn Wehner, Matthew Welch, William Welker, Carrie Wilcox, Craig	Tue. Tue. Tue. Tue. Tue. Tue. Tue. Tue.	3:50 p.m. 4:10 p.m. 3:30 p.m. 2:15 p.m. 11:10 a.m. 4:10 p.m.	Room 008 Room 103 Exhibition Hall, Station B Room 001 Exhibition Hall, Station A Room 007	Interactive Panel: Sweet Spotting – Isn't This Our Goal? Techniques for Imaging Unconventionals at Multiple Scales Eagle Ford: The Journey Continues Reservoir Production Modeling: The Enigmas From Nano-Flow Behavior to EUR Evaluating and Modeling Kerogen and Petroleum Fluids I Forecasting Production in Unconventional Reservoirs: Getting the Real EUR to
	Wiley, Livia Williams-Kovacs, Jesse Wright, Milly Wright, Milly Wu, Tengfei	Mon. Tue. Tue. Wed.	3:30 p.m. 3:45 p.m. 2:15 p.m. 2:40 p.m.	Exhibition Hall, Station B Room 001 Exhibition Hall, Station A Room 006 Exhibition Hall, Station A	the Podium Surface and Midstream Reservoir Production Modeling: The Enigmas From Nano-Flow Behavior to EUR Characterization of Shales: Chemostratigraphy and Geochemistry Alchemy or Science? Chemostratigraphy for Depositional Environments and Facies Characterization of Shales: Chemostratigraphy and Geochemistry
X	Xu, Hongwu	Tue.	3:45 p.m.	Room 103	Techniques for Imaging Unconventionals at Multiple Scales
Y	Yaich, Elyes Yang, Byongcheon Ye, Hongzhuan Yu, Gang Yu, Xin Yu, Yang	Wed. Mon. Tue. Tue. Wed. Tue.	2:40 p.m. 3:45 p.m. 4:35 p.m. 2:40 p.m. 8:55 a.m. 3:55 p.m.	Ballroom A Room 007 Ballroom B Ballroom B Room 007 Exhibition Hall, Station B	Production Optimization From Stimulation to Soaking: What Works? Emerging Plays I: Which Ones Will Make the Cut? Reservoir Characterization and Mapping the Ethereal Sweetspot Reservoir Characterization and Mapping the Ethereal Sweetspot Stimulation Case Studies: What Works and What Doesn't? Eagle Ford: The Journey Continues
Z	Zakhour, Nancy Zhai, Zongyu Zhang, Yusheng Zhang, Zhishuai Zhou, Jing Zou, Fuge	Mon. Wed. Tue. Tue. Tue. Tue.	11:15 a.m. 2:40 p.m. 2:15 p.m. 3:30 p.m. 11:40 a.m. 11:15 a.m.	Room 103 Room 007 Exhibition Hall, Station B Exhibition Hall, Station C Ballroom B Room 008	Microseismic and Reservoir Volumes Using Performance to Define Completion and Stimulation Strategies China Case Studies Microseismic I: Does It Really Add Value? Modeling Well Spacing and Multiscale Transport Multidisciplinary Integration: Some Surprising Outcomes



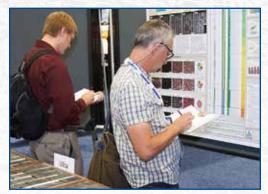
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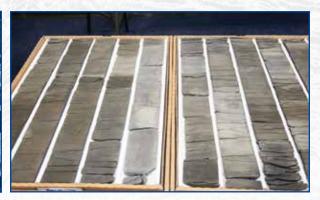
To learn more about specific positions and locations, please visit us online at <a href="mailto:chevron.com/careers">chevron.com/careers</a>



Take time during the conference to visit the Core Exhibition in the Exhibition Hall. View core samples and benefit from presentations and materials displaying the analytical methods and results used to best understand reservoirs.







## **Live Presentations**

Schedule: (as of 1 July 2015)

Monday

4:00 p.m.....Core, Facies Analysis, and Rock-Types — Powder River Basin, Wyoming - Jess Pritchard, Devon

Tuesday

4:00 p.m.....Insights From a Wolfcamp Shale SEM Study — Southern Midland Basin, Texas - Carrie Johnson, Devon

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### **Pre-Conference Short Course 1**

Geomechanics for Completion Optimization in Unconventionals: From Characterization to Monitoring

American Association of Petroleum Geologists (AAPG)

Day: Saturday

**Time:** 8:00 a.m.–5:00 p.m.

Location: Room 001B

Instructor: Neal Nagel and Marisela Sanchez-Nagel (OilField

Geomechanics LLC, Houston, Texas)

Fee: \$895

Includes: Digital course notes and refreshments

Content: .75 CEU Limit: 50 people

### **Pre-Conference Short Course 2**

Seismic, Petrophysical and Geomechanical Characterization of Organic-Rich Shale Reservoirs Society of Exploration Geophysicists (SEG)

### **CANCELED**

### **Pre-Conference Short Course 3**

**Discovery and Recovery Thinking in Shales** 

Society of Petroleum Engineers (SPE)

Days:Saturday–SundayTimes:8:00 a.m.-5:00 p.m.

Location: Room 004

Instructor: Creties Jenkins (Rose and Associates, Plano, Texas)

Fees: Member (SPE/AAPG/SEG), \$1,400; Nonmember \$1,800

Includes: Digital course notes and refreshments

Limit: 30 people

### **Pre-Conference Short Course 4**

Modern Production Data Analysis for Unconventional Reservoirs

Society of Petroleum Engineers (SPE)

Days:Saturday–SundayTime:8:00 a.m.-5:00 p.m.

Location: Room 005

Instructor: Dave Anderson (IHS/Fekete, Calgary, AB, Canada)

Fee: Member (SPE/AAPG/SEG), \$1,400; Nonmember \$1,800

**Includes:** Digital course notes and refreshments

Limit: 30 people

### **Pre-Conference Short Course 5**

**Hydraulic Fracturing - Design and Treatment** 

Society of Petroleum Engineers (SPE)

Days:Saturday–SundayTime:8:00 a.m.-5:00 p.m.Location:Room 202 A/B

Instructor: Michael B. Smith (NSI Technologies, Tulsa, Oklahoma)

Fee: Member (SPE/AAPG/SEG), \$1,400; Nonmember \$1,800

Includes: Digital course notes and refreshments

Limit: 20 people

### **Pre-Conference Short Course 6**

Assessment, Forecasting and Decision-Making in Unconventional Resource Plays

American Association of Petroleum Geologists (AAPG)

Days:Saturday–SundayTime:8:00 a.m.-5:00 p.m.

Location: Room 001A

Instructor: William Haskett (Decision Strategies, Houston, Texas)

Fee: \$1,195

Includes: Digital course notes and refreshments

Content: 1.5 CEU Limit: 50 people

### **Pre-Conference Short Course 7**

Introductory Geochemistry for Condensate-Rich Shales and Tight Oil

American Association of Petroleum Geologists (AAPG)

Day: Sunday

**Time:** 8:00 a.m.-5:00 p.m. **Location:** Room 001B

Instructor: Christopher D. Laughrey (Consultant, Golden, Colorado)

Fee: \$895

**Includes:** Digital course notes and refreshments

Content: .75 CEU Limit: 50 people

### **Pre-Conference Short Course 8**

Microseismic Imaging of Hydraulic Fracturing: Improved Engineering of Unconventional Shale

**Reservoirs** 

Society of Exploration Geophysicists (SEG)

Day: Sunday

Time: 8:00 a.m.–5:00 p.m.

Location: Room 008

Instructor: Shawn Maxwell (IMaGE-Itasca Microseismic and

Geomechanics Evaluation, Calgary, AB, Canada)

**Fee:** \$69

**Includes:** Digital course notes, continental breakfast and

refreshments

Limit: 75 people

### **Pre-Conference Short Course 9**

Publish, Not Perish: An Introduction to Scientific and Technical Publication

**CANCELED** 

### **Pre-Conference Field Trip 1**

The Mid-Paleozoic Exshaw/Banff Unconventional Petroleum System, Alberta: Correlative of Bakken Tight-Oil Play in Williston Basin

Sponsored by: Subcommission on Carboniferous Stratigraphy

#### CANCELED



Costigan Member of Famennian Palliser Formation and type section of Famennian to Early Mississippian Exshaw Formation on Jura Creek. Arrows: A-base of siliceous black-shale unit of lower Exshaw; B-volcanic tuff bed in lower Exshaw; C-base calcareous black-shale unit of lower Exshaw; and D-basal contact upper member (siltstone) of Exshaw. View is to northwest. Photo by Barry Richards

### **Pre-Conference Field Trip 2**

**Eagle Ford - An Unconventional Mudstone Reservoir** 

Sponsored by: The Petroleum Technology Transfer Council (PTTC)

Days and Times:Saturday, 2:00 p.m.-Sunday, 6:00 p.m.Leaders:Dr. Art Donovan (BP Global Exploration)

Fee: \$550

Includes: Ground transportation, one night lodging (based on

single occupancy), lunch (Sunday), refreshments and

guidebook

**Location:** Departs from and returns to Henry B. Gonzalez

**Convention Center** 

Limit: 28 people



Scott Ranch outcrop of the Eagle Ford Group in Lozier Canyon, Terrell County, Texas. Please note the location of the BP/SLB #1 Research borehole on the crest of hill behind the exposure. Photo by Dr. Art Donovan

### **Post-Conference Field Trip 3**

Hidden Valley Fault Zone, Canyon Lake Gorge Sponsored by: The Petroleum Technology Transfer Council (PTTC)

### **CANCELED**



The seismic-scale Hidden Valley fault zone exposed in Canyon Lake Gorge includes numerous small-displacement faults offsetting mechanical layers of the Glen Rose Formation. Fault zone details include several breached relay structures shown here along the downthrown trace of a 3m (9 ft.) displacement fault. Photo by David A. Ferrill

### **Post-Conference Field Trip 4**

Paleozoic Stratigraphy and Reservoirs, Permian Basin – Guadalupe, Hueco, and Franklin Mountains, West Texas and New Mexico

Sponsored by: The Petroleum Technology Transfer Council (PTTC), Rocky Mountain Region

Days and Times: Thursday, 7:30 a.m.-Sunday, 3:00 p.m.

Leaders: Dr. Rick Sarg (Colorado School of Mines, Golden,

Colorado)

**Fee:** \$1,600

Includes: Ground transportation, four nights lodging (based

on single occupancy), lunch (Thursday, Friday and

Saturday), refreshments and guidebook

**Location:** Departs from and returns to El Paso Airport, El Paso,

Texas

Limit: 30 people



Basin filling Delaware Mountain deepwater sandstones underlying El Capitain reef, Guadalupe Mountain National Park, Texas

### **Post-Conference Field Trip 5**

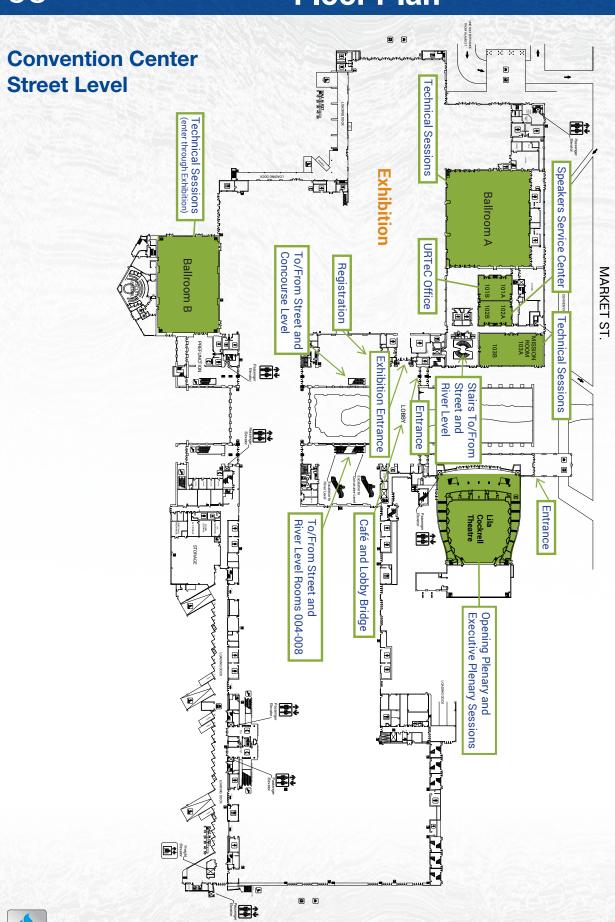
**Appalachian Basin Gas Shale** 

Sponsored by: The Petroleum Technology Transfer Council (PTTC)

### **CANCELED**



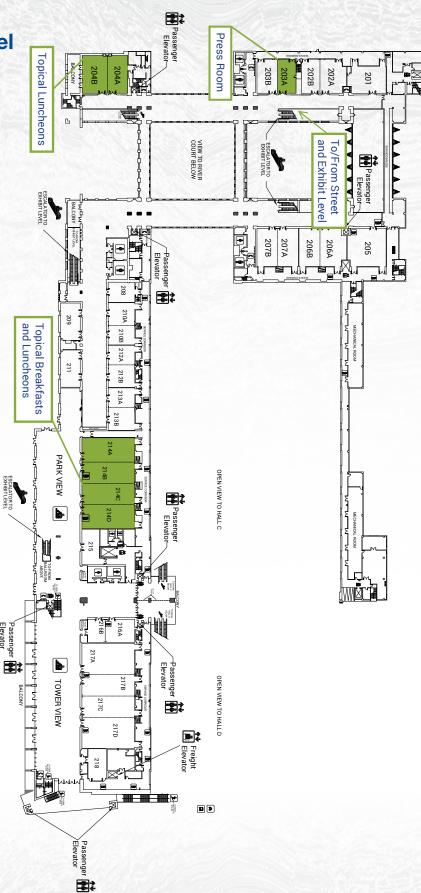
Gas-driven joints (the J2 set) propagating upward from the Geneseo gas shale at Taughannock Falls State Park, New York. Photo by Terry Engelder

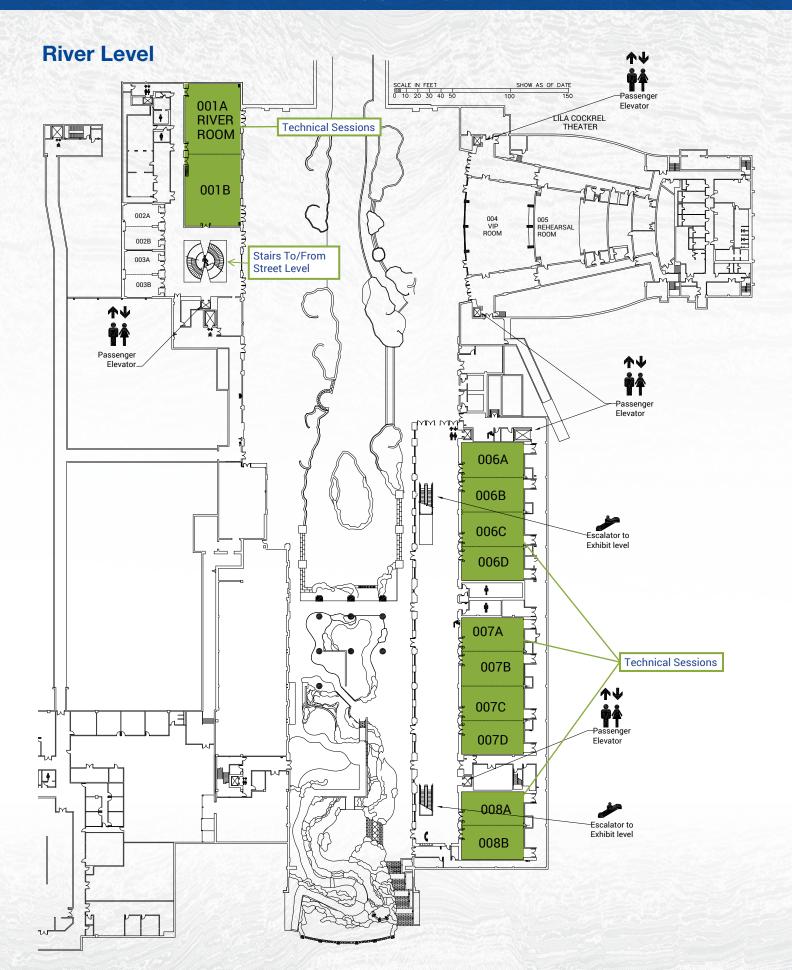




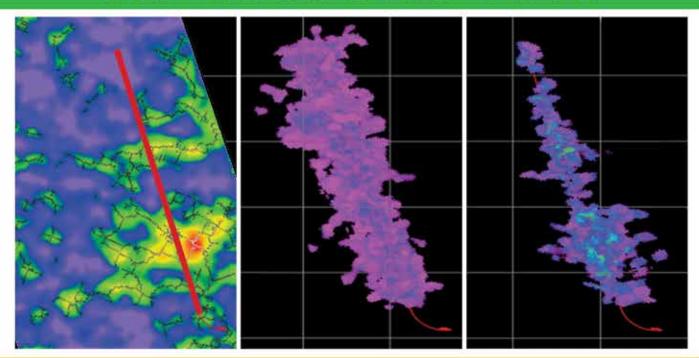
Download the URTeC 2015 app now. URTeC.org

### **Concourse Level**





# the ACOUSTIC VIEW



## BEFORE.

## DURING.

## AFTER.

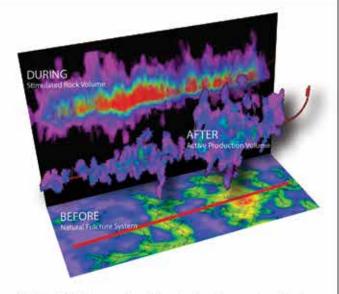
Global Geophysical's innovative approach to microseismic provides direct imaging of acoustic activity in the subsurface. This allows us to identify areas or zones that are acoustically active due to naturally occurring activity, hydraulic stimulation or production-related activities. Our microseismic results can be presented as 3D attributes such as semblance, as discrete volumes of acoustic activity or as Tomographic Fracture Images. A key and differentiating capability of our approach is that we capture acoustic activity before, during and after stimulation; providing you with knowledge of natural fractures and faults, stimulated rock volume and the active production volume. This Before, During and After approach allows you to discern the impact of both natural and induced fractures and to determine the cumulative affect they have on actual well productivity.

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**Before:** Quiet Time recording before the frac images natural fractures and faults. **During:** Pumping time recording images the microseismically active volume during stimulation. **After:** Quiet time recording post-frac reveals the microseismically active production volume.

For more information: www.globalgeophysical.com/MONITORING or Contact us at MONITORING@globalgeophysical.com

## **Exhibition Highlights**

### **Exhibition Hours**

Location: Exhibition Halls A & B

### **Breakfast Bites With Exhibitors**

Enjoy a break after the Opening Plenary and grab a quick snack with the exhibitors as URTeC opens the Exhibition Hall.

**Monday**......10:00 a.m.-10:40 a.m.

### **Refreshment Breaks**

Grab a beverage with the exhibitors during the breaks in the mornings and afternoons.

**Monday**......3:05 p.m.–3:45 p.m.

Wednesday......10:10 a.m.-10:50 a.m.

### **Opening Reception**

Enjoy a drink and hors d'oeuvres while visiting with exhibitors.

**Monday**.....5:00 p.m.–7:00 p.m.

### **Networking Reception**

Relax with a drink and light snacks while you connect with URTeC Exhibitors.

**Tuesday**......5:00 p.m.-6:00 p.m.

### **ePapers**

In addition to the Oral Presentations, URTeC features ePapers which are an electronic version of a traditional oral presentation in a PowerPoint format available during the conference. Listen to live ePaper presentations or visit the On-Demand station conveniently located inside the Exhibition Hall.

### ePaper Presentation Hours:

Monday	.10:20 a.m11:35 a.m. & 1:50 p.m4:45 p.m.
Tuesday	.10:20 a.m12:00 p.m. & 1:50 p.m4:45 p.m.
Wednesday	.9:30 a.m11:35 p.m.

### ePapers On-Demand Hours:

Monday	10:00 a.m5:10 p.m.
Tuesday	10:00 a.m5:10 p.m.
Wednesday	9:00 a.m12:00 p.m.

### Wi-Fi Hot Spot

Join colleagues in the Wi-Fi Hot Spot and relax and enjoy free internet access. You may access the internet from the comfortable lounge area at no charge.

### **URTeC 2016**

Visit booth 847 and start planning to participate at URTeC 2016. Whether you attend, exhibit and/or sponsor at the fourth annual Unconventional Resources Technology Conference, you'll want to grab materials and visit with URTeC representatives.

## Exhibitor Listing (as of 26 June 2015)

3GIG LP924
American Association of Petroleum Geologists (AAPG)847
aclaro softworks inc
Advanced Frac Systems
ALS Oil & Gas
Amplified Geochemical Imaging1145
Anadarko Petroleum Corporation700
ARCADIS
ASD Inc., A PANalytical Company1027
Bell Geospace401
BHL Consulting1043
Bruker Corporation616
C&J Energy Services263
Calfrac Well Services403
Calsep Inc604
Canadian Discovery Ltd. (CDL)835
Canamera Coring720
Carl Zeiss X-ray Microscopy Inc418
CESE – University of Tulsa826
CESI Chemical, A Flotek Company506
CGG929
Chemostrat151
Chesapeake Energy – Reservoir
Technology Center1019

Chinook Consulting Services	119
Clean Chemistry Inc	1233
Coil Solutions Inc.	1022
Computer Modelling Group Ltd	540
Core Laboratories	1132
D&L Oil Tools	163
Datalog LWT Inc	527
Dawson Geophysical Company	257
dGB Earth Sciences	656
Digi Drill	564
Digital Formation Inc	307
DigitalGlobe	369
Dino-Lite Scopes (BigC)	159
Dolan Integration Group	600
drillMap	117
Dynamic Graphics Inc	841
EGI – Energy & Geoscience Institute	368
Encapso	562
Enercat USA	1241
Energy Careers	447
Energy Navigator LLC	668
Energy Search Associates	641
Entero Corporation	500

Enthought .......320

Enventure Global Technology Inc	935
The EOR Alliance c/o IFP Canada	509
ESG Solutions	275
FairfieldNodal	268
Fairmount Santrol	359
FEI	207
Ferus	1140
Field Geo Services Inc	1150
Fluid Inclusion Technologies	1156
FRACGEO	814
Gems & Crystals Unlimited	728
GEO ExPro Publishing Ltd	612
Geo-Link Inc.	930
Geologic Data Systems	662
geoLOGIC systems	481
Geomage Inc	373
GeoMark Research Ltd	641
GeoMechanics Technologies	519
Geophysical Society of Houston	566
GeoStabilization International	525
GeoSteering LLC	
Geotrace Technologies	313
Global Energy Management Program	504
Global Geophysical Services	341



## **Exhibitor Listing**

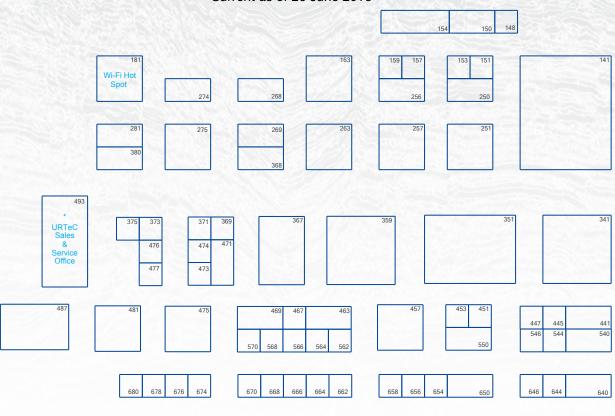
Golder Associates Inc	130
Green Imaging Technologies	900
HARC	743
Hart Energy	220
Horizon Well Logging Inc	221
Horizontal Solutions International (HSI)	1058
Houston Geological Society	1334
HRH Geology	914
Hydrocarbon Data Systems	1051
iBall Instruments	827
IHS	351
IKON Mining & Exploration	256
Ikon Science	126
IMaGE – Itasca Microseismic and Geomechanical Evalua	ation.550
Impac Exploration Services	650
Inflatable Packers International LLC	
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Ingrain	
Intelligent Solutions Inc	
Interfaces SA	
Interra Energy Services	
Intertek Westport Technology Center	
ION	
iReservoir.com Inc.	
Isolation Technologies LLC (ISOTECH)	
KAPPA	
Kinemetrics Inc.	
King Canyon Buffalo Inc.	
KU TORP	
Linde	
LoneStar Geophysical	
Magnum Oil Tools International	
Marathon Oil Corporation	
McAda Fluids Heating	
Merrick Systems	
MICRO-STRAT Inc.	
Micromeritics Instrument Corporation	
MicroSeismic Inc.	
Moblize	
Mountain Supply and Service LLC	
MUD Geochemical Inc	
NAPE Expo	
National Research Council of the National Academies	
Natural Creations	
	T

NCS Multistage	250
Neuralog	269
New England Research	153
NITEC LLC	307
OFI Testing Equipment Inc	815
OGRE Systems Inc.	674
OILGEN	32
Olympus	809
Oxford Instruments Industrial Analysis	900
Paladin Geological Services	716
Pandell	208
PennWell	678
Performance Pulsation Control	646
PES Enterprise Inc	453
Petro Chemical Bio-Diagnostics	407
PetroDE	904
PETROLINK	25
PetroSkills	513
Petrostreamz	52
Petrosys USA	317
PML Exploration Services	72
Praxair Inc.	816
Protek Systems	803
PTTC (Petroleum Technology Transfer Council)	743
RecyClean Services LLC	457
Remote Gas Analysis & Logging Services	664
Research Partnership to Secure Energy for America	743
Resolve GeoSciences Inc.	
Rock Flow Dynamics	114
Rocky Mountain Oil Journal	666
Rogii	644
Roper Pump Company	37
Rose & Associates	670
RPS Knowledge Reservoir	
Safoco	925
Saltel Industries	1340
Saudi Aramco	141
Schlumberger	127
Scott Environmental Services Inc	150
SEIMAX Technologies LP	380
Seismic Exchange Inc	380
Seitel	
Selman & Associates	124
Sercel - GRC	204

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Society of Petroleum Engineers (SPE)	84
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StratoChem Services	114
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Swire Water Solutions	95
TAM International	41:
Task Fronterra Geoscience	80
Tejas Tubular Products Inc	90
Teledyne Isco	68
Tendeka Inc.	83
Terra Guidance	91
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Terracosm Software LLC	65
Terves Inc	15
TETRA Technologies Inc.	36
TGS	32
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Thru Tubing Solutions	42
TIW Corporation	44
Tracerco	95
Tricon Geophysics Inc.	20
Ubiterra Corporation	82
Unimin Energy Services	72
United Oil & Gas Consulting Ltd	14
Varel International Energy Services	70
Weatherford	33
Weatherford Laboratories	53
WellDog	71
WellDrive	105
WellEz	92
Willowstick Technologies	104
World Oil	

## **Exhibition Floor Plan**

Current as of 26 June 2015



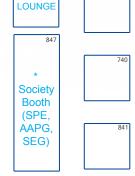
### **Exhibition Hours**

Location: Exhibition Halls A & B Monday .......10:00 a.m.-7:00 p.m. Tuesday ......8:00 a.m.-6:00 p.m. Wednesday ......8:00 a.m.-1:00 p.m



### **No-Electronic Capturing Policy**

Capturing or photographing contents of Oral or ePaper Presentations or exhibition booths via any electronic device or media is strictly prohibited at URTeC.



**MEDIA** 





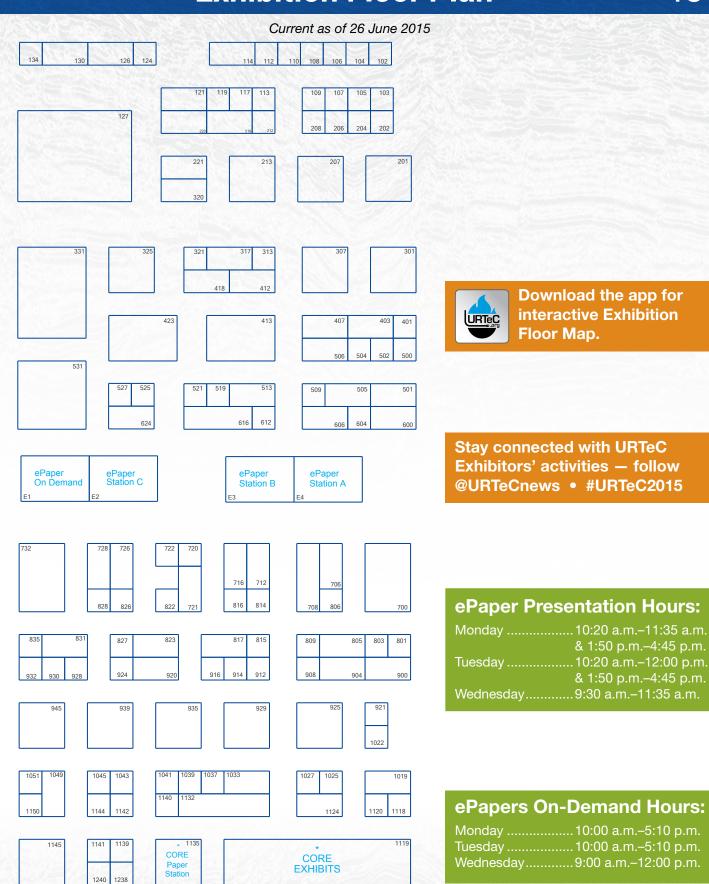
1059	1057
1158	1156

641

743

11	49
1250	1248

1243	1241
	1340



1	235	1233	
	1334	1332	

3GiG LP924	Amplified Geochemical Imaging1145	BHL Consulting 1043
1302 Waugh Drive	210 Executive Drive	4550 Kinsey Drive
		Tyler, Texas 75703
Suite 124	Suite 1	
Houston, Texas	Newark, Delaware 19702	United States
United States	United States	Phone: +1 903 597 4893
Phone: +1 832 531 4079	Phone: +1 302 266 2428	Contact: Dorotha Schmalbach
Contact: Sean Glynn	Fax: +1 302 266 2429	Email: dorotha@bhlboresight.com
Email: sean.glynn@3-gig.com	Contact: Kathy Davis	BHL CONSULTING are recognized experts in
Website: 3-gig.com	Email: davis@agisurveys.net	geosteering with over 100 years of experience.
	Website: www.agisurveys.net	BORESIGHT is the industry leading geosteering
A A DO	AGI provides surface hydrocarbon mapping and	software developed by the geologists of BHL
<b>AAPG</b>	Downhole Geochemical Logging that can be	Consulting.
THE U	used in tandem to provide a 3-D hydrocarbon	
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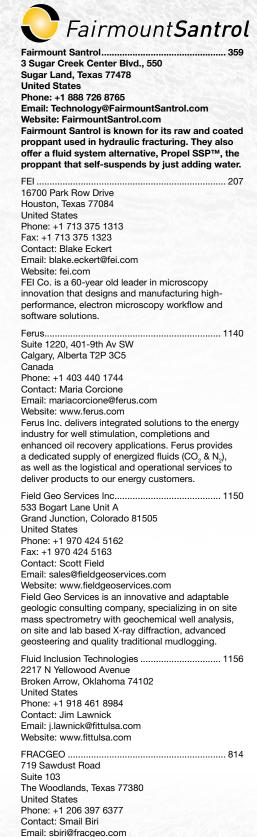
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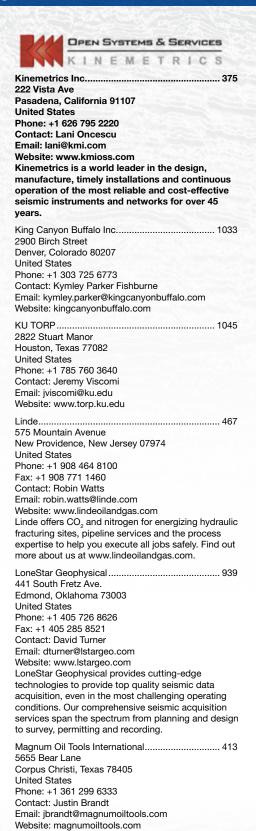
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Willowstick Technologies ..... ..... 1041 132 East 13065 South, Ste 100 Draper, Utah 84020 **United States** Phone: +1 385 228 2249 Fax: +1 801 984 9851 Contact: Leif Law Email: info@willowstick.com Website: www.willowstick.com Willowstick maps preferential groundwater connection paths including flow through fractured rock. We energize the water directly with an electric current and map the resultant magnetic field. This allows us to identify in 2-D and 3-D any subsurface water connection paths. See us at Booth 1041. 2 Greenway Plaza Suite 1020 Houston, Texas 77046 **United States** Phone: +1 713 520 5301 Contact: Gwen Hood Email: gwen.hood@gulfpub.com

### **General Information**

### **Business Center**

The UPS Store

200 E. Market Street, Suite 215 San Antonio, TX 78205 Phone: +1 210 258 8950

Fax: +1 210 258 8951

Email: store4180@theupsstore.com

Website: http://www.theupsstorelocal.com/4180/ Hours: Monday-Friday...... 8:00 a.m.-6:30 p.m. Saturday ...... 9:00 a.m.-5:00 p.m.

Please visit the website to see detailed information.

### Lost and Found

Location: West Registration, Street Level

Items found during the conference should be turned in to the Attendee Services Supervisor. If your lost item has not been turned in you may leave information on how you want to be contacted should the item be found.

### Luggage Check

Location: West Registration, Street Level Wednesday......6:30 a.m.-4:30 p.m.

A luggage check is available at a cost of \$2.00 per item checked.



### No-Electronic Capturing Policy

Capturing or photographing contents of Oral or ePaper Presentations or exhibition booths via any electronic device or media is strictly prohibited at URTeC.

### No Smoking Policy

Smoking is prohibited in the Henry B. Gonzalez Convention Center.

### On-Site Registration Hours

Location: West Registration, Street Level Saturday ......12:00 p.m.-5:00 p.m. **Sunday**......7:30 a.m.-5:00 p.m. Monday.....7:00 a.m.-6:00 p.m. Tuesday ......7:00 a.m.-5:30 p.m. Wednesday......7:00 a.m.-1:00 p.m.

#### **Press Office**

Location: Room 203A

The Press Office is a lounge/working area for editorial personnel covering the conference. Press releases and other announcements for the media are welcome to

Monday.....8:00 a.m.-5:00 p.m. Tuesday ......8:00 a.m.-5:00 p.m. Wednesday......8:00 a.m.-12:00 p.m.

### Social Media & Web / URTeC.org



### Download the URTeC 2015 App Now. URTeC.org

#### **URTeC**

Be sure to like and follow URTec on Facebook, Twitter, LinkedIn and YouTube. Stay connected using the hashtag #URTeC2015. Website: URTeC.org

Stay connected with SPE using the hashtags #SPE #URTeC2015.

Stay connected with AAPG using the hashtags #AAPG #URTeC2015. Website: www.aapg.org

Stay connected with SEG using the hashtags #SEG #URTeC2015. Website: www.seg.org

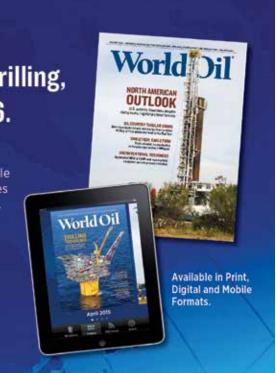
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### **General Information**

### **Speakers Service Center**

Location: Room 102A

### **URTeC Conference Office**

Telephone: +1 210 582 7034

Location: Room 101B

 Saturday
 12:00 p.m.-5:30 p.m.

 Sunday
 8:00 a.m.-5:30 p.m.

 Monday
 7:30 a.m.-5:30 p.m.

 Tuesday
 7:30 a.m.-5:30 p.m.

 Wednesday
 7:30 a.m.-4:30 p.m.

## **Safety and Security**

### **First Aid**

Location: Behind the URTeC Sales Office in Hall A.

 Friday
 8:00 a.m.-5:00 p.m.

 Saturday
 8:00 a.m.-5:00 p.m.

 Sunday
 8:00 a.m.-5:00 p.m.

 Monday
 9:00 a.m.-7:00 p.m.

 Tuesday
 8:00 a.m.-6:00 p.m.

 Wednesday
 8:00 a.m.-6:00 p.m.

### **Security and Emergencies**

Please report security issues or emergencies to one of the following:

- Exhibition Manager located in URTeC Sales Office on Exhibition Floor
- URTeC staff person identifiable by the silver "Show Management" name badge
- Badge checkers/security guards located at entrance to the Exhibition Hall and in the Technical Session areas

### **Badges**

Badges must be worn at all times while attending the conference. For your safety, remove your name badge once you exit the convention center.

### Hotels

You are encouraged to review the safety and security information provided at your hotel.

### **Unattended Items**

For your safety, please do not leave items unattended. Items left unattended will be confiscated and/or destroyed. To report lost or stolen items, please see the Attendee Services Supervisor in the URTeC Registration area located in West Registration, Street Level.



### **About San Antonio**

### **Transportation Airport Information**

San Antonio International Airport (SAT) 9800 Airport Blvd. San Antonio, TX 78216 +1 210 207 3433 http://www.sanantonio.gov/sat

### **Parking**

The City of San Antonio recently announced the launch of a new downtown parking locator app provided by Pango Mobile Parking! The FREE parking locator app helps motorists find a parking space using their Smartphone's location. The app includes parking rate data and current availability capacity for all downtown parking locations. The app is available for iPhone and Andriod and is free and secure. Download it now at http://www.mypango.com/solutions/ smartphone-application/.

### **Bowie & Market Streets**

Flat rate: \$9.00 for up to 3 hours, \$6.00 every additional hour and \$27.00 maximum (per day). Closest parking to Convention Center and Lila Cockrell Theatre

Marina Garage (+1 210 207 8266)

Bowie & Commerce Streets Daily flat rate: \$9.00 Event flat rate: \$11.00 Across street from main entrance to Convention Center and Lila Cockrell Theatre

**Riverbend Garage** (+1 887 717 0004)

Alamo & Market Streets

Daily rates: 0-2 hours/\$10.00; 2-4 hours/\$12.00; 4-24 hours/\$15.00

Overnight rate: \$15.00

Tower of the Americas Parking (+1 210 223 3101)

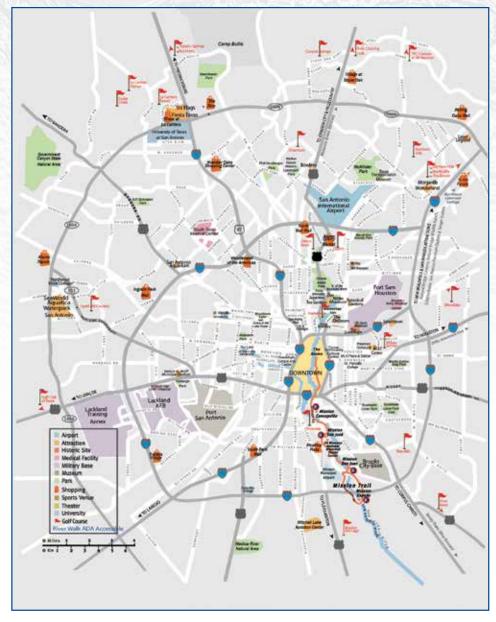
801 Cesar Chavez Blvd. Daily flat rate: \$8.00

### **Public Transportation**

### VIA Metropolitan Transit

VIA Metropolitan Transit is San Antonio's public transportation agency offering service throughout the city including streetcar service within the downtown area. Once in the downtown area, VIA's streetcar service offers stops to or near most hotels, restaurants, the convention center and many visitors hot spots. For more details, visit www.viainfo.net.

### **Hotel Information**

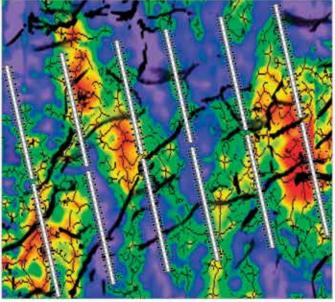


Hotel Name	Address	Telephone #		
Crockett Hotel	320 Bonham, San Antonio, TX 78205	+1 210 225 6500		
Grand Hyatt	600 E Market Street, San Antonio, TX 78205	+1 210 224 1234		
Hilton Palacio del Rio	200 S Alamo Street, San Antonio, TX 78205	+1 210 222 1400		
Hotel Contessa	306 W Market Street, San Antonio TX 78205	+1 210 229 9222		
Hyatt Regency Riverwalk	123 Losoya Street, San Antonio, TX 78205	+1 210 222 1234		
La Quinta Riverwalk	303 Blum Street, San Antonio, TX 78205	+1 210 222 9181		
Menger Hotel	204 Alamo Plaza, San Antonio, TX 78205	+1 210 223 4361		
The Emily Morgan Hotel - A Doubletree by Hilton	705 E Houston Street, San Antonio, TX 78205	+1 210 225 5100		

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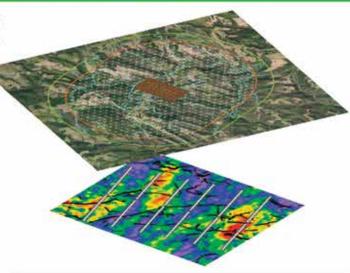
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- Quick delivery of high-resolution fault images and rock property attributes - timely and actionable information
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For more information: www.globalgeophysical.com/DEMANDSEISMIC or Contact us at DEMANDSEISMIC@globalgeophysical.com



Global's innovative seismic acquisition and quick delivery of 3D and ambient seismic attributes provides detailed and actionable information for well planning and completion design.

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