

The integrated event for unconventional resource teams

UNCONVENTIONAL[®]

RESOURCES TECHNOLOGY CONFERENCE

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25-27 August 2014 » Colorado Convention Center » Denver, Colorado

PROGRAM BOOK

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9:25AM

TAKING AN UNCONVENTIONAL APPROACH
TO A HYDROCARBON-RICH ENVIRONMENT

5:25PM

TAKING ADVANTAGE OF SOME DOWN
TIME TO WORK ON MY GOLF SWING



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Core Exhibits



Monday Topical Luncheon



Pocket Guide



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Opening Reception



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MEDIA



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NATURAL RESOURCES

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Integrating Solvent Extraction With Standard Pyrolysis to Better Quantify Thermal Maturity and Hydrocarbon Content in the Oil Window

D.R. Collins, S. Lapierre

Uncharted Waters: What Can We Learn from Waters Produced from Horizontal Wells in the Permian Basin?

M. Laughland, D. Nelson, P. Wilson, E. Eastridge

Rate Step-Down Analysis Improves Placement Efficiency of Stimulation Treatments in Unconventional Resource Play

N.D. Pandya, O. Jaripatke

The Impact of Fault Zone Deformation on Horizontal Well Performance in the Wolfcamp Shale, Midland Basin, West Texas: An Integrated Subsurface Study

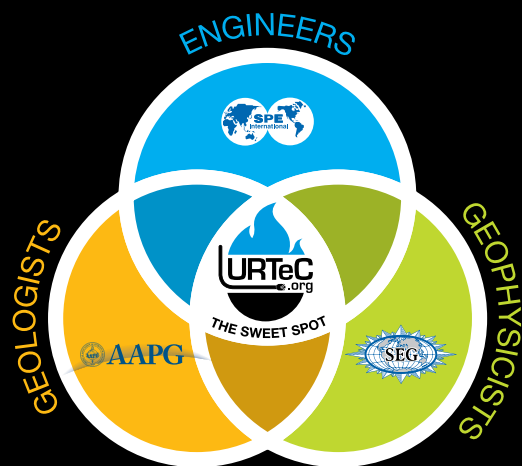
T. White, P. Clarke, A. Stephens, M. Laughland, H. Ye

Join us in our hospitality suite

Tuesday, August 26, 5:30pm - 9:30pm

Top Floor of Euclid Hall Bar and Kitchen, 1317 14th St., Downtown Denver

Network over cocktails and light hors d'oeuvres



A collaborative vision between three of the world's leading oil and gas professional societies – SPE, AAPG and SEG – URTeC is one of the industry's only events providing an integrated technical program that unites key disciplines from the unconventional sector under one roof.

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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NSC Energy Service	Inside Back Cover
Summit Casing Equipment	Back Cover

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Dear Colleagues,

On behalf of the Unconventional Resources Technology Conference (URTeC), its sponsoring organizations and Technical Program Committee, we welcome you to the second edition of this breakthrough, inter-society event focused on the latest technology applied within an asset team environment.

The world's three largest upstream oil and gas societies – Society of Petroleum Engineers (SPE), American Association of Petroleum Geologists (AAPG) and Society of Exploration Geophysicists (SEG), with help from our friends at the American Association of Mechanical Engineers, Petroleum Division (ASME-PD) – have again joined forces to bring industry professionals this science-based event that features topics most relevant to today's scientists, engineers and businesspeople in the oil and gas industry.

The dynamic Opening Plenary Session – Using Science and Integrated Technologies to Develop Unconventional Plays– 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 Richard D. Fritz with SM Energy Company, the panelists include:

- **Robert N. Ryan, Jr.**, Vice President - Global Exploration, Chevron Upstream
- **Brad Holly**, Vice President Rockies, Anadarko Petroleum Corporation
- **Scott Key**, Chief Executive Officer, IHS
- **Jay Ottoson**, President and Chief Operating Officer, SM Energy
- **Tom Petrie**, President, Petrie Partners
- **W. F. "Rick" Bott Jr.**, President and Chief Operating Officer, Continental Resources

New this year, the program features asset team presentations as well as the oral presentations and ePapers. Complimenting the world-class conference, the exhibition showcases the latest technologies and includes a Core Exhibit and plenty of networking events to meet with colleagues and friends.

We are glad you are here and thank you for attending URTeC 2014.

Sincerely,
Luis Baez, BG Americas and Global LNG
R. Randy Ray, R3 Exploration Corporation
Steve Sonnenberg, Colorado School of Mines

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Luis Baez



R. Randy Ray



Steve Sonnenberg

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Plenary and Panel
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Executive Advisory Council

7



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Manager for North American
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Melanie Westergaard
*Geoscience
Development Advisor
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Not Pictured

Melvyn Giles

*Global Theme Leader
Shell*

Henry Jacot

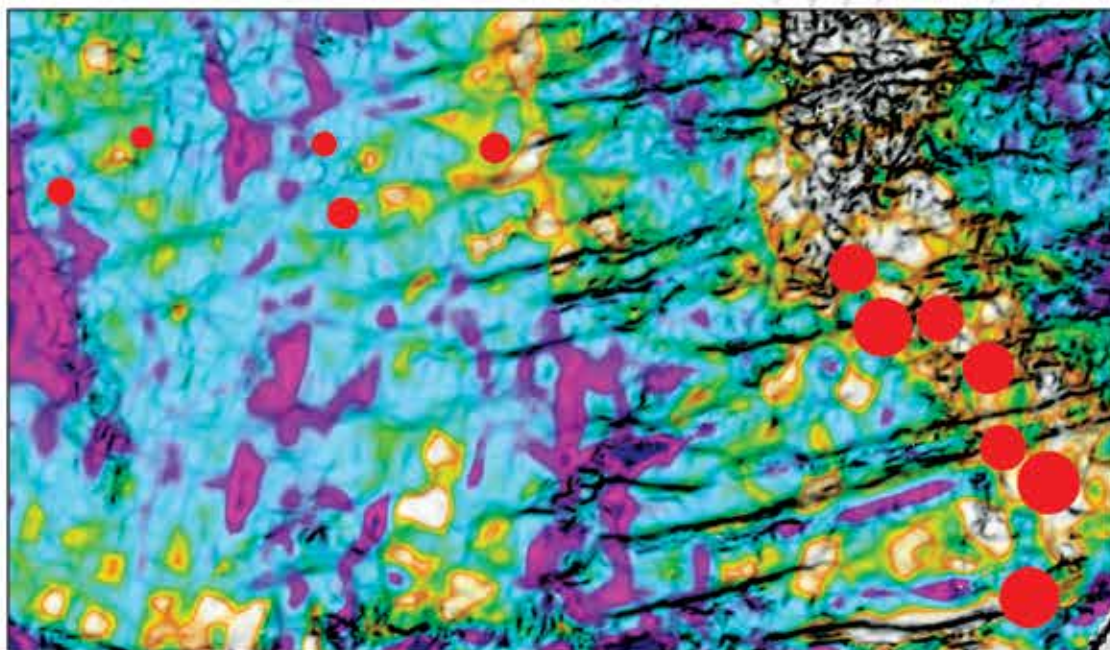
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AREAS OF EXPERTISE

- **Unconventional Reservoirs**
- Challenging Environments
- Complex Geologies
- Basin Exploration
- Reservoir Exploitation



GEOVENTURES®

Saturday		
8:00 a.m.	Pre-Conference Field Trip (Day One): Unconventional Reservoirs and Stratigraphy of the Southern Denver Basin	
8:00 a.m.–5:00 p.m.	Pre-Conference Short Course 1: Petrophysics of Unconventional Reservoirs	Room 103/105
8:00 a.m.–5:00 p.m.	Pre-Conference Short Course 2 (Day One): Forecasting Well Production Data in Unconventional Resources	Room 111/113
12:00 p.m.–5:00 p.m.	Registration	Lobby A & F
Sunday		
7:30 a.m.–5:30 p.m.	Registration	Lobby A & F
8:00 a.m.–5:00 p.m.	Pre-Conference Short Course 2 (Day Two): Forecasting Well Production Data in Unconventional Resources	Room 111/113
8:00 a.m.–5:00 p.m.	Pre-Conference Short Course 3: Introductory Geochemistry for Condensate-Rich Shales and Tight Oil	Room 103/105
8:00 a.m.–5:00 p.m.	Pre-Conference Short Course 4: Microseismic Imaging of Hydraulic Fracturing: Improved Engineering of Unconventional Shale Reservoirs	Room 301/302
8:00 a.m.–5:00 p.m.	Pre-Conference Short Course 5: Hydraulic Fracturing Fundamentals for Unconventional Reservoirs	Room 108/110/112
4:00 p.m.	Pre-Conference Field Trip (Day Two): Unconventional Reservoirs and Stratigraphy of the Southern Denver Basin	
Monday		
7:00 a.m.–6:00 p.m.	Registration	Lobby A & F
8:30 a.m.–12:00 p.m.	Opening Plenary Session: Using Science and Integrated Technologies to Develop Unconventional Plays	Mile High Ballroom 1 & 2
10:00 a.m.–7:00 p.m.	Exhibition	Halls A & F
10:10 a.m.–10:50 a.m.	Breakfast Bites with Exhibitors	Exhibition
12:05 p.m.–1:15 p.m.	Topical Luncheon: Unconventional Reservoir Future: Science, Technology and Economics 	Four Seasons Ballroom 1
12:05 p.m.–1:15 p.m.	Topical Luncheon: Integrating the Different Views of Fractures in Gas Shale: An Elephant Described by an Engineer, a Geologist and a Geophysicist 	Four Seasons Ballroom 4
12:05 p.m.–1:15 p.m.	Topical Luncheon: Re-Fracturing Horizontal Shale Wells: Woodford Case History and Issues 	Mile High Ballroom 3 A/B
1:45 p.m.–5:25 p.m.	Interactive Panel: Nimble Independents: “Moving the Needle” With Innovation and Execution Excellence	Mile High Ballroom 4 D/E/F
1:45 p.m.–5:25 p.m.	Oral Presentations: Four Seasons Ballroom 2 & 3, Mile High Ballroom 4 A/B/C, 200s, 400s	
1:50 p.m.–5:10 p.m.	ePapers	Exhibition
3:05 p.m.–3:45 p.m.	Refreshment Break	Exhibition
5:00 p.m.–7:00 p.m.	Opening Reception	Exhibition
Tuesday		
6:30 a.m.–5:30 p.m.	Registration	Lobby A & F
7:00 a.m.–8:15 a.m.	Topical Breakfast: The Global Shale Revolution: Can We Improve on the North American Experience, Even in North America 	Four Seasons Ballroom 1
7:00 a.m.–8:15 a.m.	Topical Breakfast: Cha-Ching: It's All About the Markets 	Mile High Ballroom 3 A/B
7:00 a.m.–8:15 a.m.	Topical Breakfast: When Technical Competence and Collaboration Aren't Enough – Why Projects Unexpectedly Fail and What Can We Do About It 	Four Seasons Ballroom 4
8:25 a.m.–12:05 p.m.	Interactive Panel: Converting Technology into Dollars	Mile High Ballroom 4 D/E/F
8:25 a.m.–12:05 p.m.	Oral Presentations: Four Seasons Ballroom 2 & 3, Mile High Ballroom 4 A/B/C, 200s, 400s	
9:00 a.m.–6:00 p.m.	Exhibition	Halls A & F
9:30 a.m.–5:10 p.m.	ePapers	Exhibition
9:45 a.m.–10:25 a.m.	Refreshment Break	Exhibition
12:05 p.m.–1:15 p.m.	Topical Luncheon: Sustaining the Unconventional Oil and Gas Revolution 	Four Seasons Ballroom 1
12:05 p.m.–1:15 p.m.	Topical Luncheon: Geochemical Methods for Determining the Origin of Stray Gas in Aquifers Near Oil and Gas Wells 	Mile High Ballroom 3 A/B
12:05 p.m.–1:15 p.m.	Topical Luncheon: Upstream M&A Review and 4th Quarter Expectations 	Four Seasons Ballroom 4
1:45 p.m.–3:05 p.m.	Interactive Panel Session: Water Management and the Link to License to Operate	Mile High Ballroom 4 D/E/F
1:45 p.m.–5:25 p.m.	Oral Presentations: Four Seasons Ballroom 2 & 3, Mile High Ballroom 4 A/B/C, 200s, 400s	
3:05 p.m.–3:45 p.m.	Refreshment Break	Exhibition
3:45 p.m.–5:10 p.m.	Interactive Panel: Emerging International Plays	Exhibition
5:00 p.m.–6:00 p.m.	Networking Reception	Exhibition
Wednesday		
6:30 a.m.–1:00 p.m.	Registration	Lobby A & F
7:00 a.m.–8:15 a.m.	Topical Breakfast: Characterizing Shale Plays – The Importance of Recognizing What You Don't Know 	Four Seasons Ballroom 1
7:00 a.m.–8:15 a.m.	Topical Breakfast: What Have We Learned About Fracturing Shales After 12 Years of Microseismic Mapping 	Four Seasons Ballroom 4
7:00 a.m.–8:15 a.m.	Topical Breakfast: Why Look at Rocks? Integrated Qualitative and Quantitative Approaches for a More Predictive Understanding of Reservoirs 	Mile High Ballroom 3 A/B
8:25 a.m.–12:05 p.m.	Marcellus Shale: “Bottom Up” Integrating Assessment of Future Production and Reserves	
8:25 a.m.–12:05 p.m.	Oral Presentations: Four Seasons Ballroom 2 & 3, Mile High Ballroom 4 A/B/C, 200s, 400s	
9:00 a.m.–1:00 p.m.	Exhibition	Halls A & F
9:30 a.m.–12:00 p.m.	ePapers	Exhibition
9:45 a.m.–10:25 a.m.	Refreshment Break	Exhibition
12:05 p.m.–1:15 p.m.	Topical Luncheon: 2013 Colorado Flood Recovery 	Mile High Ballroom 3 A/B
12:05 p.m.–1:15 p.m.	Topical Luncheon: Geology of the Alberta Oil Sands: Big Challenges, Big Rewards 	Four Seasons Ballroom 1
12:05 p.m.–1:15 p.m.	Topical Luncheon: Pipes and Pumps – Human Coronary Models as Analogs to Oilfield Optimization 	Four Seasons Ballroom 4
1:45 p.m.–3:55 p.m.	Oral Presentations: Four Seasons Ballroom 2 & 3, Mile High Ballroom 4 A/B/C, 200s, 400s	
Thursday		
8:00 a.m.	Post Conference Field Trip: Unconventional Petroleum Systems (continues through Saturday, 30 August, 5:00 p.m.)	
8:00 a.m.–3:30 p.m.	Interactive Forum: Multidisciplinary Assessment in Unconventional Resource Development	Room 301/302

Theme	Session	Day	Time	Type	Location
Panels and Special Sessions	Plenary Session: Using Science and Integrated Technologies to Develop Unconventional Plays	Monday	8:30 a.m.–12:00 p.m.	Oral	Mile High Ballroom 1 & 2
	Nimble Independents: “Moving the Needle” With Innovation and Execution Excellence	Monday	1:45 p.m.–5:25 p.m.	Oral	Mile High Ballroom 4 D/E/F
	Geophysical Strategies and Techniques to Optimize Unconventional Resource Plays – Seismic Playbook for Non-Geophysicists	Tuesday	8:25 a.m.–12:05 p.m.	Oral	Room 405/406/407
	Converting Technology Into Dollars	Tuesday	8:25 a.m.–12:05 p.m.	Oral	Mile High Ballroom 4 D/E/F
	Water Management and the Link to License to Operate	Tuesday	1:45 a.m.–3:05 p.m.	Oral	Mile High Ballroom 4 D/E/F
	Emerging International Plays	Tuesday	3:45 p.m.–5:05 p.m.	Oral	Mile High Ballroom 4 D/E/F
	Marcellus Shale: “Bottom Up” Integrated Assessment of Future Production and Reserves	Wednesday	8:25 a.m.–12:05 p.m.	Oral	Mile High Ballroom 4 D/E/F
Theme 1: Regional Case Studies	Regional Case Studies II: Integrated Technologies That Deliver Bottom Line Results	Monday	1:50 p.m.–3:55 p.m.	ePaper	Exhibition Hall, Station A
	Regional Case Studies I: It Starts With the Rock	Tuesday	8:25 a.m.–12:05 p.m.	Oral	Room 205/207
	Regional Case Studies II: Integrated Technologies That Deliver Bottom Line Results	Tuesday	1:45 p.m.–5:25 p.m.	Oral	Room 205/207
	Regional Case Studies I: It Starts With the Rock	Wednesday	9:30 a.m.–10:20 a.m.	ePaper	Exhibition Hall, Station A
Theme 2: Characterization of Unconventional Reservoirs	Multi-Discipline Data Integration I	Monday	1:45 p.m.–5:25 p.m.	Oral	Room 401/402/403/404
	Formation Evaluation	Monday	1:50 p.m.–4:20 p.m.	ePaper	Exhibition Hall, Station B
	Multi-Discipline Data Integration II	Tuesday	8:25 a.m.–12:05 p.m.	Oral	Room 401/402/403/404
	Drivers for Understanding Reservoir Quality	Tuesday	9:30 a.m.–11:35 a.m.	ePaper	Exhibition Hall, Station A
	Formation Evaluation	Tuesday	1:45 p.m.–5:25 p.m.	Oral	Room 401/402/403/404
	Seismic Attributes for Characterizing Rock Properties and Reservoirs I	Tuesday	1:45 p.m.–5:25 p.m.	Oral	Room 405/406/407
	Multi-Discipline Data Integration III	Tuesday	1:50 p.m.–3:15 p.m.	ePaper	Exhibition Hall, Station A
	Seismic Attributes for Characterizing Rock Properties and Reservoirs II	Wednesday	8:25 a.m.–10:10 a.m.	Oral	Room 401/402/403/404
	Reservoir Types: Shales, Sands and Carbonates	Wednesday	9:30 a.m.–10:20 a.m.	ePaper	Exhibition Hall, Station B
	Optimizing Workflows for Reservoir Types	Wednesday	10:45 a.m.–12:05 p.m.	Oral	Room 401/402/403/404
	Mudrock Reservoir Formation Evaluation	Wednesday	1:45 p.m.–3:30 p.m.	Oral	Mile High Ballroom 4 A/B/C
	Reservoir Types: Shales, Sands and Carbonates	Wednesday	1:45 p.m.–3:55 p.m.	Oral	Room 401/402/403/404
	Understanding Mudrock Plays	Wednesday	1:45 p.m.–3:55 p.m.	Oral	Mile High Ballroom 4 D/E/F
Theme 3: Application and Integration of Well Data	Imaging Unconventional Reservoir Pore Systems	Monday	1:45 p.m.–5:25 p.m.	Oral	Room 201/203
	Shale Core Analysis	Tuesday	9:30 a.m.–10:45 a.m.	ePaper	Exhibition Hall, Station B
	Imaging Unconventional Reservoir Pore Systems	Tuesday	1:50 p.m.–4:45 p.m.	ePaper	Exhibition Hall, Station B
	Shale Core Analysis	Wednesday	8:25 a.m.–12:05 p.m.	Oral	Room 405/406/407
	Characterizing Mudrocks With NMR	Wednesday	9:30 a.m.–11:10 a.m.	ePaper	Exhibition Hall, Station C



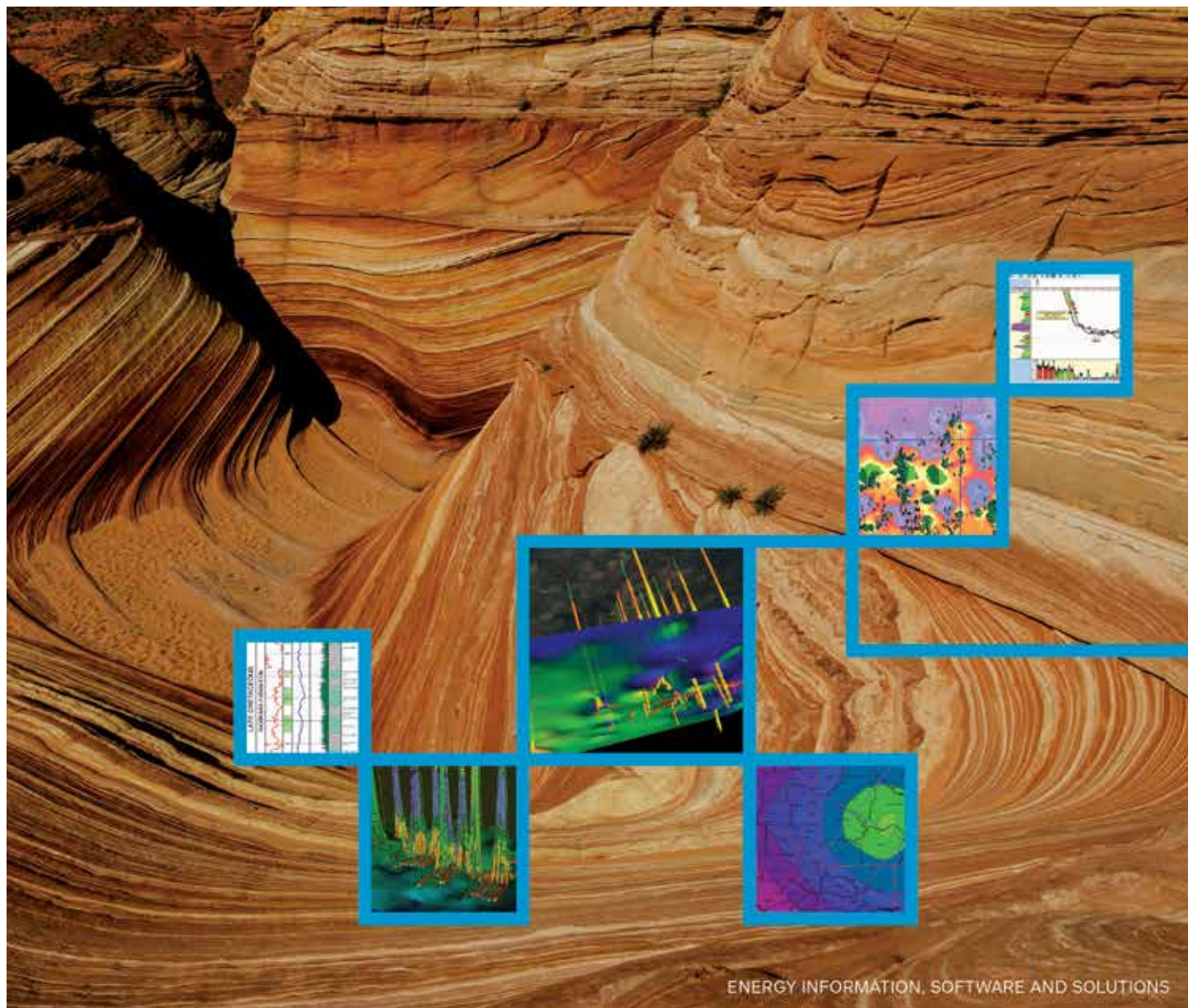
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Theme	Session	Day	Time	Type	Location
Theme 4: Understanding Your Petroleum System	Inorganic Geochemistry	Monday	3:55 p.m.–4:20 p.m.	ePaper	Exhibition Hall, Station A
	Organic Geochemistry	Tuesday	8:25 a.m.–12:05 p.m.	Oral	Room 201/203
	Organic Geochemistry	Tuesday	1:50 p.m.–2:40 p.m.	ePaper	Exhibition Hall, Station C
	Inorganic Geochemistry	Wednesday	1:45 p.m.–3:55 p.m.	Oral	Room 405/406/407
Theme 5: Optimizing Recovery from Unconventional Reservoirs	Completion Techniques	Monday	1:45 p.m.–5:25 p.m.	Oral	Four Seasons Ballroom 2 & 3
	Microseismic Fracture Mapping	Monday	1:45 p.m.–5:25 p.m.	Oral	Room 205/207
	Enhanced Oil Recovery Techniques	Tuesday	8:25 a.m.–12:05 p.m.	Oral	Four Seasons Ballroom 2 & 3
	Optimizing Recovery Using Geomechanics	Tuesday	10:45 a.m.–11:10 a.m.	ePaper	Exhibition Hall, Station B
	Evaluating Stimulation Effectiveness	Tuesday	1:45 p.m.–5:25 p.m.	Oral	Four Seasons Ballroom 2 & 3
	Using Geoscience and Petrophysics Data to Improve Completions	Tuesday	2:40 p.m.–3:30 p.m.	ePaper	Exhibition Hall, Station C
	Optimizing Recovery Using Geomechanics	Wednesday	8:25 a.m.–12:05 p.m.	Oral	Four Seasons Ballroom 2 & 3
	Enhanced Oil Recovery Techniques	Wednesday	10:20 a.m.–11:10 a.m.	ePaper	Exhibition Hall, Station A
	Evaluating Stimulation Effectiveness	Wednesday	11:35 a.m.–12:00 p.m.	ePaper	Exhibition Hall, Station A
	Using Geoscience and Petrophysics Data to Improve Completions	Wednesday	1:45 p.m.–3:55 p.m.	Oral	Four Seasons Ballroom 2 & 3
Theme 6: Optimizing Capital Efficiency	Leveraging Data, Modeling and Analytics	Wednesday	8:25 a.m.–12:05 p.m.	Oral	Room 205/207
	Integrated Approaches and Case Studies	Wednesday	1:45 p.m.–3:55 p.m.	Oral	Room 205/207
Theme 7: Production Performance of Tight Oil and Gas Reservoirs	Analytics and Workflows	Tuesday	9:30 a.m.–9:55 a.m.	ePaper	Exhibition Hall, Station C
	Reservoir Modeling	Tuesday	9:55 a.m.–10:45 a.m.	ePaper	Exhibition Hall, Station C
	Flow and Phase Behavior	Tuesday	3:05 p.m.–4:20 p.m.	ePaper	Exhibition Hall, Station A
	Analytics and Workflows	Wednesday	8:25 a.m.–10:10 a.m.	Oral	Room 201/203
	Flow and Phase Behavior	Wednesday	10:45 a.m.–12:05 p.m.	Oral	Room 201/203
	Reservoir Modeling	Wednesday	1:45 p.m.–3:55 p.m.	Oral	Room 201/203
Theme 8: Social Performance (HSSE)	Water Management and Social License to Operate	Monday	1:50 p.m.–3:05 p.m.	ePaper	Exhibition Hall, Station C
	Water Management and Social License to Operate	Tuesday	1:45 p.m.–5:25 p.m.	Oral	Room 201/203
Theme 9: Reserves Forecasting and Estimation	Reserves Forecasting and Estimation	Monday	1:45 p.m.–5:25 p.m.	Oral	Room 405/406/407
	Reserves Forecasting and Estimation	Wednesday	10:20 a.m.–12:00 p.m.	ePaper	Exhibition Hall, Station B
Theme 10: Long Term Performance	Artificial Lift	Monday	1:45 p.m.–4:35 p.m.	Oral	Mile High Ballroom 4 A/B/C
	Well Integrity and Production Optimization	Tuesday	8:25 a.m.–11:15 a.m.	Oral	Mile High Ballroom 4 A/B/C
Theme 11: Emerging Unconventional Plays	Emerging Plays II: Unconventional Going Global	Monday	3:05 p.m.–5:10 p.m.	ePaper	Exhibition Hall, Station C
	Emerging Plays I: Roadway From Ideas to Sweetspots	Tuesday	1:45 p.m.–5:25 p.m.	Oral	Mile High Ballroom 4 A/B/C
	Emerging Plays II: Unconventional Going Global	Wednesday	8:25 a.m.–12:05 p.m.	Oral	Mile High Ballroom 4 A/B/C
	Emerging Plays I: Roadway From Ideas to Sweetspots	Wednesday	11:10 a.m.–12:00 p.m.	ePaper	Exhibition Hall, Station C



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Opening Plenary Session

Using Science and Integrated Technologies to Develop Unconventional Plays

Time: 8:30 a.m.–12:00 p.m.

Location: Mile High Ballroom 1 & 2

Fee: Included with registration

Moderator: Richard D. Fritz, Senior Geologist, SM Energy Company

The kick-off Plenary Session will feature an exceptional panel of subject matter experts from the industry — one that represents the breadth and diversity of SPE, AAPG and SEG — that will frame up the opportunities and the issues and challenges that must be addressed before returns can be maximized in this new integrated space. The panelists include:

- **Robert N. Ryan Jr.**, Vice President – Global Exploration, Chevron Upstream
- **Brad Holly**, Vice President Rockies, Anadarko Petroleum Corporation
- **Scott Key**, Chief Executive Officer, IHS
- **Jay Ottoson**, President and Chief Operating Officer, SM Energy
- **Tom Petrie**, President, Petrie Partners
- **W. F. “Rick” Bott Jr.**, President and Chief Operating Officer, Continental Resources



This session 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. In recognition of the father of natural gas shale drilling, George Mitchell, a brief highlight of the video tribute honoring George and his work history will be shown at the end of the session. The full video may be viewed in the Exhibition Hall, booth 1308.

George P. Mitchell — A Difference Maker

This 30-minute video depicts the importance George P. Mitchell, the “pioneer of shale”, had on the oil and gas industry and his philanthropic support of many causes, programs and institutions. The founder of Mitchell Energy and Development Corporation, Mitchell pioneered different techniques for hydraulic fracturing of the Barnett Shale, eventually finding the right technique to economically extract natural gas from the formation. He also developed the Woodlands, a timbered, urban environment north of Houston as well as playing a major role in the revitalization of Galveston. His foundation has distributed or pledged over \$400 million in grants with the vast majority of the funds distributed relating to science and environmental sustainability.

Monday Topical Luncheons ▼

Time: 12:05 p.m.–1:15 p.m.

Fee: \$50 per person

A ticket is required for Topical Luncheons admission.

ADMIT ONE



Unconventional Reservoir Future: Science, Technology and Economics

Location: Four Seasons Ballroom 1

Scott W. Tinker, Director, Bureau of Economic Geology, State Geologist of Texas, Professor, Edwin Allday Endowed Chair in Subsurface Geology, Jackson School of Geosciences, The University of Texas at Austin

Results from a three-year, bottom up study of the four most prolific shale gas basins in the U.S. — Barnett, Fayetteville, Haynesville, and Marcellus — will be discussed. A team of engineers, geoscientists and economists examined production from every well in each field and integrated geology and economics into an activity based model that forecasts future production and reserves for each basin. Fields were tiered by well productivity and gas/liquids content allowing future drilling and economics to be examined in a much more granular way than other public studies. The work has been published in peer reviewed literature and a series of *Oil and Gas Journal* articles, and reported broadly in the national media, including the cover of the *Wall Street Journal* and NPR.



Integrating the Different Views of Fractures in Gas Shale: An Elephant Described by an Engineer, a Geologist and a Geophysicist

Location: Four Seasons Ballroom 4

Terry Engelder, Professor of Geosciences, Pennsylvania State

The nature of hydraulic fracture stimulation in gas shale is difficult to know. An engineer's view might start with the bi-wing model and single, parallel fracture zones running outward for more than 1000 feet from perf clusters. Another engineering view is that the stimulated rock volume expands more like the roots of a tree to fill a volume that may be restricted in map view to a few hundred feet. The geophysicist has such tools as Microseismic data which suggest that the stimulated reservoir volume varies in character from stage to stage. The geologist sees the incomplete fracturing of gas shale in outcrop where joints are planar and can extend well beyond the standard spacing of horizontal wells. However, the variation of joint density in outcrops suggests that some stages might not be as productive as others and if two joint sets are present, there is the possibility that fracture stimulations connect much like the roots of a tree.

Monday Topical Luncheons continued



Re-Fracturing Horizontal Shale Wells: Woodford Case History and Issues

Location: Mile High Ballroom 3 A/B

Samual W. French, Senior Reservoir Engineer, BP North America Gas

Mullet-stage horizontal well stimulation treatments have been the key completion approach driving the recent US shale revolution, primarily using Plug & Perf. As many of these shale plays mature, it is becoming increasingly apparent that the majority of the wells have not been effectively stimulated, with high efficiency rarely being achieved resulting in only partial coverage. In fulfilling the desire to complete these wells in a timely manner, it is now apparent that there likely remains a significant portion of un-stimulated pay in a typical well post completion.

Monday Afternoon Technical Program ▼

*Denotes presenter other than first author.

Oral Sessions

Theme 5: Completion Techniques

Four Seasons Ballroom 2 & 3

Co-Chairs: J. Miskimins and J. Wallace

1:45 **Introductory Remarks**

1:50 **Second Generation Testing of Cased Uncemented Multi-Fractured Horizontal Well Technology in the Horn River:** S. Merkle, J. Lehmann*, J. Pyecroft (Nexen Energy ULC)

2:15 **Horizontal Shale Gas Well Frac'ing Unplugged!** J. Lehmann, D. Bearinger, J. Pyecroft, D. Meeks, P. Chernik (Nexen Energy ULC)

2:40 **Extending the Application of Foam Hydraulic Fracturing Fluids:** J. J. McAndrew¹, R. Fan¹, M. Sharma², L. Ribeiro² (1. Air Liquide; 2. University of Texas)

3:05 **Refreshment Break**

3:45 **Optimized Production in the Bakken Shale: South Antelope Case Study:** J. D. Harkrider^{*1}, M. Barham², M. R. Besler³, K. D. Mahrer¹, T. M. Michell^{*1} (1. SigmaCubed; 2. Helis Oil & Gas; 3. FRACN8R Consulting LLC)

4:10 **Examining Innovative Techniques for Matrix Acidizing in Tight Carbonate Formations to Minimize Damage to Equipment and Environment:** F. Markey¹, T. Betz¹, J. Gutaples¹, D. Ackwith², K. Taylor², R. Barati^{*1} (1. The University of Kansas; 2. Earthborn Clean Products)

4:35 **Hydraulic Fracture Stimulation Optimization in Multi-Stage Horizontal Glauconitic Oil Completions, Central Alberta:** M. Reynolds¹, B. Pollock² (1. Ferus Inc; 2. Ravenwood Energy Corp.)

5:00 **A CFD Validation of Historical Production Studies Comparing Plug-and-Perf to Openhole Sleeve Completion Methods in Horizontal Multi-Stage Fractured Wells:** V. Theppornprapakorn, S. Dunn-Norman* (Missouri University of Science and Technology)

Theme 2: Multi-Discipline Data Integration I

Room 401/402/403/404

Co-Chairs: R. Pearson and D. N. Valteau

1:45 **Introductory Remarks**

1:50 **Petrophysical and Geochemical Evaluation of an Avalon Shale Horizontal Well in the Delaware Basin:** K. Schwartz¹, G. Muscio¹, P. Nester¹, I. Easow², M. Javalagi² (1. Chevron; 2. Schlumberger)

2:15 **Toward Understanding Over-Pressure in a Basin With Burial and Uplift: Preliminary Results of a Study Measuring Under-Compaction With DT Logs:** P. E. Devine (WPX Energy)

2:40 **Design, Execution and Evaluation of a Holistic Data Acquisition Program for Utica Shale:** B. Can, C. Gilbert, L. Leal, S. Hirsch, J. Rosenzweig, H. Nathan, S. Rudolph, S. McManus, J. Vines, N. Smith, M. Honarpour, N. Nagarajan, D. Xia (Hess Corporation)

3:05 **Refreshment Break**

3:45 **3-D Integrated Workflow for Understanding the Fracture Interference and its Impact Into the Gas Production of the Woodford Shale:** E. Peza¹, E. Kvale¹, R. Hand¹, W. Harper¹, R. Jayakumar¹, D. Wood¹, E. Wigger², B. Dean², Z. Al-Jalal², S. Ganpule² (1. Devon Energy; 2. Schlumberger)

4:10 **MaxG and MaxBHT Basin Temperature Modelling Using Bottom Hole Temperature Datasets:** I. Deighton, E. Tibocha, P. Dotsey (TGS)

4:35 **Impact of Petroleum—Expulsion Fractures on Productivity of the Bakken Shales: A Geological Interpretation of Pressure Transient Behaviors:** M. Al Duhailan, S. Sonnenberg (Colorado School of Mines)

5:00 **Geomodeling in a Development Play—An Example From the Bakken Shale:** B. Melton, M. Kelley, N. Fishman (Hess Corporation)



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Theme 5: Microseismic Fracture Mapping

Room 205/207

Co-Chairs: S. Maxwell and N. Warpinski**1:45 Introductory Remarks****1:50 Completions Evaluation in the Eagle Ford Shale:** C. W. Neuhaus (MicroSeismic, Inc.)**2:15 The Characterization of Fracture Mechanisms Using a Combination of Surface Microseismic Imaging, Microdeformation Modeling and Downhole Microseismic Mapping: An Examination of the Value of Moment Tensor Migration Imaging:** R. Velasco, K. Chambers, S. A. Wilson (Pinnacle - A Halliburton Service)**2:40 Source Mechanism Characterization of Microseismic Data at Pouce Coupe Field, Alberta, Canada:** M. J. Lee¹, S. Maxwell², T. L. Davis¹ (1. Colorado School of Mines; 2. Schlumberger)**3:05 Refreshment Break****3:45 Integrating Fracture Diagnostics for Improved Microseismic Interpretation and Simulation Modeling:** N. Warpinski, M. Mayerhofer, E. Davis, E. Holley (Halliburton)**4:10 Passive Seismic Monitoring and Integrated Geomechanical Analysis of a Tight-Sand Reservoir During Hydraulic-Fracture Treatment, Flowback and Production:** D. Eaton¹, M. van der Baan², L. Matthews³, E. Caffagni¹ (1. University of Calgary; 2. University of Alberta; 3. ConocoPhillips Canada)**4:35 Identifying Frac Growth in Multiple Horizons Using Integrated Microseismic and Induced Seismic Monitoring Approaches:** T. Urbancic, A. Cochrane, S. Bowman (ESG Solutions)**5:00 Case Study Results From the Integration of MEQ, TFI and Surface Seismic Attributes:** C. J. Sicking¹, J. Vermilye², A. Lacazette², A. Fish² (1. Global Geophysical Services; 2. Global Geophysical Services)


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Theme 9: Reserves Forecasting and Estimation

Room 405/406/407

Chair: T. Collier

1:45 Introductory Remarks

1:50 W. J. Lee (University of Houston)

2:10 Creties Jenkins (Rose and Associates)

2:30 Christopher R. Clarkson (University of Calgary)

2:50 Panel Discussion

3:05 Refreshment Break

3:45 Reserves Estimation in Unconventional Reservoirs Using a New Production-Decline Model: T. Ali, J.J. Sheng, M.Y. Soliman (Texas Tech University)

4:10 Sensitivity Study, History Marching and Economic Optimization for Marcellus Shale: W. Yu, K. Sepehrnoori (The University of Texas at Austin)

4:35 Multi-Disciplinary Integration for Lateral Length, Staging and Well Spacing Optimization in Unconventional Reservoirs:

A. M. Malayalam, A. Bhokare, P. Patricia, H. Sebastian, Y. Abacioglu (BP America)

5:00 Intelligent Rate Transient Analysis for Forecasting Behavior of Shale Gas Wells: W. Pang (Sinopec Research Institute of Petroleum Engineering)

Theme 3: Imaging Unconventional Reservoir Pore Systems

Room 201/203

Co-Chairs: T. Olson and M. Honarpour

1:45 Introductory Remarks

1:50 Micro-CT Analysis of Pores and Organics in Unconventionals Using Novel Contrast Strategies: A. Fogden, T. McKay, M. Turner, R. Marathe, T. Senden (Australian National University)

2:15 Integrated Petrophysical Properties and Multi-Scaled SEM Microstructural Characterization: E. T. Goergen¹, M. Curtis², J. Jernigen², C. Sondergeld², C. Rai² (1. FEI; 2. University of Oklahoma)

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- 2:40 Mapping of Organic Matter Distribution in Shales on the Centimeter Scale With Nanometer Resolution:** M. Curtis¹, E. T. Goergen², J. Jernigen¹, C. Sondergeld¹, C. Rai¹ (1. University of Oklahoma; 2. FEI Company)
- 3:05 Refreshment Break**
- 3:45 Imaging-Based Characterization of Calcite-Filled Fractures and Porosity in Shales:** B. Vega, C. M. Ross, A. Kovscek (Stanford University)
- 4:10 Boquillas Eagle Ford Formation Pore Evolution Results From Laboratory Heating Experiments:** L. Ko, T. Zhang, R. G. Loucks, S. C. Ruppel (The University of Texas at Austin)
- 4:35 Pore Systems of the B-Chalk Zone in the Niobrara Formation, Denver-Julesburg Basin, Colorado:** J. Michaels, D. A. Budd (University of Colorado)
- 5:00 Nano- to Microscale Pore Characterization of the Utica Shale:** A. M. Swift¹, J. Sheets¹, D. R. Cole¹, L. M. Anovitz⁴, S. A. Welch¹, X. Gu⁵, D. F. Mildner³, S. J. Chipera² (1. The Ohio State University; 2. Chesapeake Energy Corporation; 3. NIST Center for Neutron Research; 4. Oak Ridge National Laboratory; 5. Pennsylvania State University)

Theme 10: Artificial Lift

Mile High Ballroom 4 A/B/C

Co-Chairs: M. Sorrell and K. Stephenson

- 1:45 Introductory Remarks**
- 1:50 Considerations for Optimizing Artificial Lift in Unconventionals:** W. Lane, R. Chokshi* (Weatherford)
- 2:15 An Approach of Optimizing the Production From Mature Fields Using Improved Jet Pump Designs and Operational Considerations:** S. Ahmed¹, S. Kumar¹, K. Farouque¹, S. Ali², M. Ahmed² (1. Weatherford Oil Tools; 2. OGDCL Pakistan)
- 2:40 Tubing Anchors Can Reduce Production Rates and Pump Fillage:** J. N. McCoy¹, L. Rowlan¹, C. Taylor^{*1}, T. Podio² (1. Echometer Company; 2. University of Texas)
- 3:05 Refreshment Break**
- 3:45 An Innovative and Cost-Effective Artificial Lift Solution to Revive the Dying Wells in Tight and Marginal Gas Reservoirs — Capillary Soap Injection:** S. Ahmed¹, M. Shahrukh², W. Yousuf³, M. Azhar Khan⁴ (1. Weatherford Oil Tools; 2. NED University of Eng. & Tech.; 3. Texas A&M University; 4. OMV Pakistan)
- 4:10 Well Pad Automation Improves Capital Efficiency and Reduces Fiscal Risk:** M. Machuca (Emerson)

Interactive Panel: Nimble Independents: “Moving the Needle” With Innovation and Execution Excellence

Mile High Ballroom 4 D/E/F

Moderator: Luis Baez, BG Americas and Global LNG

Agile independents continue to be first-order drivers behind the velocity at which industry is climbing the unconventional resources learning curve and new chapters to this “playbook” are being added every day. This accomplished panel will share insights and lessons learned how they’ve created and then weaved their unique matrix of multidisciplinary integration, fit-for-purpose technologies, benchmark best practices and boots-on-the ground execution to lead them to Tier 1 results.

- 1:45 Introductory Remarks**
- 1:50 Doug Hazlett**, Vice President, North America Onshore Exploration, Anadarko Petroleum
- 2:05 Michael Van Horn**, former Vice President Exploration, Newfield Exploration
- 2:20 Joe Frantz**, Vice President Engineering Technology, Range Resources
- 2:35 Trevor Sloan**, Managing Director Energy Research, ITG Investments Research
- 2:50 Joseph DeDominic**, President and Chief Operating Officer, Anschutz Petroleum
- 3:05 Refreshment Break**
- 3:45 Interactive Panel Q&A**
- 4:30 Audience Q&A**

Afternoon ePapers

Theme 1: Regional Case Studies II: Integrated Technologies That Deliver Bottom Line Results

Exhibition Hall, Station A

Co-Chairs: P. M. Basinski and S. Leary

- 1:50 Basin Architecture and Marcellus Resource Potential in the Allegheny National Forest, Pennsylvania:** M. Velasco, H. Snyder*, E. Schnetzler, M. Baber (Neos GeoSolutions)

- 2:15 Evaluating Gas Production Performances in Marcellus Using Data Mining Technologies:** Q. Zhou¹, R. Dilmore², A. Kleit¹, J. Wang¹
(1. The Pennsylvania State University; 2. National Energy Technology Laboratory)
- 2:40 Team Presentation: Optimum Depth of South Bakken Shale Oil in the Great Basin:** A. Chamberlain, K. Bhattacharjee (Cedar Strat Corp)
- 3:30 Detailed Description of Petro-Cycle Solutions Innovative Process for the Remediation, Recycle and Reuse of “Frac Water and Flow Back Water” for the Oil and Gas Industry Across the U.S. and Canada:** H. E. Schachter (Petro Cycle Solutions)

Theme 2: Formation Evaluation

Exhibition Hall, Station B

Co-Chairs: J. O'Brien and N. Fishman

- 1:50 Application of Real-Time Reservoir Navigation and High-Definition Electrical Imaging Services for Enhanced Well Placement and Optimal Completion Design:** M. G. Thomas, R. Gupta, S. D. Hammons, S. J. Martin (Baker Hughes)
- 2:15 A New Approach to Measure Organic Density:** S. T. Dang (University of Oklahoma)
- 2:40 Assessment of the Petroleum Generation Potential of the Neal Shale in the Black Warrior Basin, Alabama:** J. A. Legg, R. Donahoe, R. Martens (The University of Alabama)
- 3:05 Gas Storage Capacity of Iljik and Hasandong Shales in Gyongsang Basin, South Korea:** S. Kang¹, Y. Shinn², I. Akkutlu^{*3} (1. Daewoo International Corporation; 2. KIGAM; 3. Texas A&M University)
- 3:30 An Improved Petrophysical Volume Model for Proximate Analysis in Coalbed Methane Reservoir:** P. Zhao¹, Z. Mao², D. Jin², B. Sun³, X. Pang¹ (1. China University of Petroleum, Beijing; 2. PetroChina Company Ltd., CNPC; 3. China Petroleum Well Logging Company Ltd., CNPC)
- 3:55 Rock Physics Diagnostics and Modeling for Shale Gas Formation Characterization in China:** G. Yu¹, Y. Zhang¹, P. Newton², I. Azizov³ (1. BGP, Inc.; 2. RSI; 3. ConocoPhillips)

Theme 4: Inorganic Geochemistry

Exhibition Hall, Station A

Co-Chairs: S. Rhodes and M. Kendrick

- 3:55 Impact of Hydrothermal Fluid Flow on Mississippian Reservoir Properties, Southern Midcontinent:** R. H. Goldstein, B. D. King (KICC-University of Kansas)

Theme 8: Water Management and Social License to Operate

Exhibition Hall, Station C

Co-Chairs: K. J. Nygaard and K. M. Jones

- 1:50 Mitigation of Natural Gas Through Heterogeneous Sandy Soils Affected by Atmospheric Boundary Conditions:** A. Esposito, T. Illangasekare, K. Smits (Colorado School of Mines)
- 2:15 Team Presentation: Rational Development of Green Carriers for Viscosity Modifiers in Fracturing Fluids:** S. Risser, J. Elhard, M. Moore, B. Moore, O. Koper (Battelle)
- 2:40 Development and Validation of an Acid Mine Drainage Water Treatment Process for Source Water:** A. Lane¹, T. Beers², R. Peterson¹ (1. Battelle; 2. Winner Water Services)

Theme 11: Emerging Plays II: Unconventional Going Global

Exhibition Hall, Station C

Co-Chairs: P. Collins and J. Bamberger

- 3:05 Unconventional Prospectivity Evaluation of Kidson Sub-Basin, Canning Superbasin, Western Australia — Sleeping Giant?:** O. Omotoye, J. Redfern (University of Manchester)
- 3:55 Hydrocarbon Plays and Unconventional Hydrocarbon Distribution in Lacustrine Basins in China:** H. Wang, Z. Wang, G. Zhu (Research Institute of Petroleum Exploration & Development (RIPEd), Petrochina)
- 4:20 Geological Conditions of Tight Gas in Chaco Basin:** L. Zhang (RIPEd)
- 4:45 Sedimentary Pozzolanite Tuffite: An Important Kind of Rock Storing Oil and Gas Resources in Middle Permian Lucaogou Formation in North Xinjiang Province, China:** J. Zhang, G. Zhu, G. Yao (PetroChina Hangzhou Research Institute of Geology)



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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.

ADMIT ONE



The Global Shale Revolution: Can We Improve on the North American Experience, Even in North America

Location: Four Seasons Ballroom 1

David Paddock, Worldwide Geophysical Technical Advisor, Schlumberger Unconventional Resources

Shale exploration is growing dramatically on every continent. Many operators are committed to maturing their understanding and producing resources with smaller footprints than has been the case in the United States. Establishing economic viability, optimizing pilot well locations, evaluating acreage, optimizing landing / drill well design / fracking, and optimizing production all present opportunities to reduce capital and time. With a modest bias toward the geoscientist's view, examples in this presentation show how better results can be achieved with less.



Cha-Ching: It's All About the Markets

Location: Mile High Ballroom 3 A/B

Michelle Michot Foss, Chief Energy Economist and Program Manager, Bureau of Economic Geology's Center for Energy Economics, The University of Texas at Austin

Oil and gas market dynamics are particularly dynamic and volatile, with implications especially for unconventional resource plays and projects. This breakfast discussion will focus on short- and long-term factors and drivers impacting the suite of hydrocarbon commodities and indicators of forward patterns and trends.



When Technical Competence and Collaboration Aren't Enough — Why Projects Unexpectedly Fail and What We Can Do About It

Location: Four Seasons Ballroom 4

Creties Jenkins, Partner, Rose and Associates

Why is it that some companies have made billions of dollars in unconventional while others have lost billions? Part of the answer is rooted in technical competence and collaboration, but other factors, particularly cognitive biases, cause companies to create unrealistic expectations and disregard the real possibility of failure. This talk, richly-illustrated with examples, examines how and why we've stumbled and provides some recommendations for doing a better job of quantifying uncertainty, risk and results for our unconventional projects.

Tuesday Morning Technical Program ▼

*Denotes presenter other than first author.

Oral Sessions

Theme 5: Enhanced Oil Recovery Techniques

Four Seasons Ballroom 2 & 3

Co-Chairs: M. Sharma and H. Kazemi

8:25 Introductory Remarks

8:30 A Review of Enhanced Oil Recovery Methods Applied in Williston Basin: K. Ling¹, J. He¹, Z. Shen², G. Han³ (1. University of North Dakota; 2. Weatherford; 3. China University Petroleum)

8:55 EOS Modeling and Reservoir Simulation Study of Bakken Gas Injection Improved Oil Recovery in the Elm Coulee Field, Montana: W. Pu, T. Hoffman* (Colorado School of Mines)

9:20 Impact of Light Component Stripping During CO₂ Injection in Bakken Formation: V. A. Fai-Yengo¹, H. Rahnema¹, M. Alfi² (1. New Mexico Tech; 2. Texas A&M)

9:45 Refreshment Break

10:25 Flow Rate Behavior and Imbibition Comparison Between Bakken and Niobrara Formations: D. Wang¹, J. Zhang¹, R. Butler¹, A. Clark², R. Rabun², D. Koskella² (1. University of North Dakota; 2. Noble Energy Inc.)

10:50 Experimental Investigation of Surfactant Flooding in Shale Oil Reservoirs: Dynamic Interfacial Tension, Adsorption and Wettability: V. Mirchi, S. Saraji, L. Goual, M. Piri (University of Wyoming)

11:15 An Evaluation of the EOR Potential in Shale Oil Recovery by Cyclic Natural Gas Injection: T. Gamadi, J. J. Sheng (Texas Tech. University)

11:40 The Benefits of Reinjecting Instead of Flaring Produced Gas in Unconventional Oil Reservoirs: T. Hoffman, S. Sonnenberg, K. Hossein (Colorado School of Mines)

Theme 2: Multi-Discipline Data Integration II

Room 401/402/403/404

Co-Chairs: C. Miller and O. Quezada

8:25 Introductory Remarks

8:30 Relevance of Static Geomodels in Shale Plays — South Texas Eagle Ford Shale: A. L. McGeer, A. Cadena*, J. Womack (Marathon Oil)

8:55 Real-Time Estimation of Hydraulic Fracture Characteristics From Production Data: M. Tarrahi, S. Gonzales, E. Gildin (Texas A&M University)

9:20 Multiphase Flow in Porous Rocks: Dynamic Pore-Scale Imaging and Direct Numerical Simulations: S. Berg¹, R.T. Armstrong¹, H. Ott¹, A. Georgiadis¹, S. A. Klapp¹, A. Schwing¹, R. Neiteler¹, N. Brussee¹, A. Makurat¹, C. van Kruijsdijk¹, M.T. Myers², L. Hathon², H. de Jong², L. Liu², F. Enzmann³, J. Schwarz³, M. Wolf³, F. Khan³, M. Kersten³, S. Irvine⁴, M. Stampanoni⁴, D. D. Koroteev⁵, O. Dinariev⁵, N. Evseev⁵, S. Safonov⁵, 6. D. Klemm⁶, A. Nadeev⁶, O. Gurpinar⁷ (1. Shell Global Solutions International; 2. Shell; 3. Geosciences Institute; 4. Swiss Light Source; 5. Schlumberger Moscow Research; 6. Schlumberger Reservoir Laboratories; 7. Schlumberger Reservoir Characterization Group)

9:45 Refreshment Break

10:25 Sequence Stratigraphy, Geomechanics, Microseismicity and Geochemistry Relationships in Unconventional Resource Shales: R. M. Slatt¹, Y. Abousleiman¹, P. Philp¹, J. D. Amoroso², C. Cabarcas³ (1. University of Oklahoma; 2. ConocoPhillips; 3. Hilcorp Energy Corp.)

10:50 Integrating Surface Seismic, Microseismic, Rock Properties and Mineralogy in the Haynesville Shale: N. Peake, G. Castillo, N. Van de Coevering, S. Voisey, A. Bouziat, K. Chesser, G. Oliver, C. Vinh Ly, R. Mayer* (CGG)

11:15 Fault and Fracture Characterization From an Integrated Subsurface and Seismic Dataset: Impact on Well Performance of the Wolfcamp Shale, Midland Basin, West Texas: T. White, P. Clarke, A. Stephens, M. M. Laughland, H. Ye (Pioneer Natural Resources)

11:40 The Greeley 3-D Seismic Survey: One of the Nation's Largest Urban Survey Leads to Niobrara and Codell Horizontal Activity
Horizontal Activity: J. M. Wiener¹, T. Galikeev², C. Richardson³ (1. Halliburton; 2. Unified Geosystems; 3. MRI)

Theme 1: Regional Case Studies I: It Starts With the Rock

Room 205/207

Co-Chairs: P. M. Basinski and T. Collier

8:25 Introductory Remarks

8:30 Geologic Controls on Production of Shale Play Resources: Case of Eagle Ford, Bakken and Niobrara: M. Pathak¹, M. Deo¹, J. Craig², R. Levey³ (1. University of Utah; 2. Eni; 3. Energy & Geoscience Institute)

8:55 Shale-Gas Reservoir Potential of the Lower Cretaceous Skull Creek Shale in Niobrara County, Wyoming: R. G. Loucks, H. D. Rowe (University of Texas)

9:20 Integrating Outcrop and Subsurface Data to Evaluate Data-Poor Shale Plays: The Devonian Canol Formation, Northwest Territories, Canada: R. Jonk¹, K. Potma², K. Bohacs¹, D. Advocate², P. Starich² (1. ExxonMobil; 2. Imperial Oil Resources)

9:45 Refreshment Break

10:25 Developing an Outcrop Reservoir Analog for the Williston Bakken Formation With the Sappington Formation of South-Central Montana: T. Doughty¹, J. Hohman², J. Guthrie², A. Rodriguez³, G. Grader¹, K. Wells² (1. PRISEM Geoconsulting; 2. HESS Energy; 3. University of Idaho)

10:50 Examination of the Depositional Setting and Geochemistry of Upper Tyler Formation (Pennsylvanian) Source Rocks Within Southwestern North Dakota: T. Nesheim, S. H. Nordeng (North Dakota Geological Survey)

11:15 Early Entry Play Analysis: Geologic Controls on Lower Smackover Brown Dense Deliverability: K. Brown (WhitMar Exploration)

11:40 Team Presentation: Thickness of South Bakken Shale Oil of the Great Basin: A. Chamberlain, K. Bhattacharjee (Cedar Strat Corp)



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Special Session: Geophysical Strategies and Techniques to Optimize Unconventional Resource Plays — Seismic Playbook for Non-Geophysicists

Room 405/406/407

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

- 8:25** **Introductory Remarks**
- 8:30** **Practical Application of Seismic Data for Drilling and Completions Optimization: Examples From Eagleford, Bakken/Three Forks and Midcontinent Mississippian Lime Plays:** M. Roth, M. Roth (Drilling Info)
- 8:55** **Niobrara Horizontal Well Planning Using 3-D Seismic Data: A Key Technology for Accurate Lateral Placement, Completion Optimization & Maximizing Production, Wattenberg Field, DJ Basin Colorado:** J. Wiener (Halliburton)
- 9:20** **Oil Production Estimates in Unconventional Resource Plays Using 3-D Seismic: A Bakken Case Study:** G. M. Johnson, P. Miller, D. Phillips, J. Young (Schlumberger)
- 9:45** **Refreshment Break**
- 10:25** **3-D Seismic Data's Role in the Engineering and Economic Evaluation of the Vaca Muerta Shale, Neuquen Basin, Argentina:** M. S. Purcell¹, D. Kirkwood¹, S. Natali¹, R. Cidale² (1. WPX Energy; 2. Apco International)
- 10:50** **Maximizing Recovery Efficiency in Unconventional Oil Development Projects in the Bakken and Niobrara Formations:** M. Williams (Whiting Petroleum Corp.)
- 11:15** **Understanding, Evaluating and Maximizing the Value of a Microseismic Program:** R. Pearson, A. Martinez (Anadarko Petroleum Corporation)
- 11:40** **Confessions of an Engineer: What Do I Do With This Seismic Stuff in My Unconventional Reservoir?:** J. R. Gilman, R. J. Michelena, H. Z. Meng (iReservoir.com, Inc.)

Theme 4: Organic Geochemistry

Room 201/203

Co-Chairs: M. M. Laughland and C. Laughrey

- 8:25** **Introductory Remarks**
- 8:30** **Toward Successful Petroleum Production From Unconventional and Conventional Reservoirs in the Central Alaska North Slope:** A. Hosford Scheirer¹, L. B. Magoon², K. J. Bird³, E. Duncan⁴, K. E. Peters⁵ (1. Geomodeling Solutions LLC; 2. Petroleum System LLC; 3. Consultant; 4. Great Bear Petroleum; 5. Schlumberger)
- 8:55** **Beyond TMAX Thermal Maturity: Introducing an Original Method for Analyzing Source-Rock Pyrolysis Data to Predict Transformation Ratio and Retention Ratio in Resource-Play Evaluations:** P. E. Devine (WPX Energy)
- 9:20** **Niobrara Maturity Goes Up, Resistivity Goes Down; What's Going On?:** S. Cumella¹, M. Al Duhaian² (1. Endeavour; 2. Colorado School of Mines)
- 9:45** **Refreshment Break**
- 10:25** **Utilizing Hydrocarbon Yield Determinations to Evaluate Source/Reservoir Relationships in the Bakken/Three Forks of the Williston Basin, ND:** M. Millard¹, T. Ruble² (1. SM Energy Company; 2. Weatherford Laboratories)
- 10:50** **Evolution of the Molecular and Stable Isotope Composition of Headspace Gas Desorbing From Drill Cuttings Collected in Sealed Jars:** N. A. Rosenau, J. Strauss, P. Travers, A. Schaiberger, M. Dolan (Dolan Integration Group)
- 11:15** **Petroleum Geochemistry of Upper Jurassic Bazhenov Shale Source Rocks and Corresponding Crude Oils, West Siberian Basin, Russia:** J. E. Zumberge¹, J. B. Curtis², S. W. Brown¹ (1. GeoMark Research, Ltd.; 2. Colorado School of Mines)
- 11:40** **Petroleum Systems Charge Analysis for Liquid-Rich Unconventional Plays:** M. A. Abrams (Apache Corporation)

Theme 10: Well Integrity and Production Optimization

Mile High Ballroom 4 A/B/C

Co-Chairs: K. Stephenson and A. Nall

- 8:25** **Introductory Remarks**
- 8:30** **The Development of a Tool and Methods to be Used in Flow Path Detection Behind Casing for Use in the Fayetteville Shale:** N. K. Combs¹, L. Watters¹, J. McDaniel¹, V. Maki², C. Hall³ (1. CSI Technologies; 2. The Measurement Group; 3. Southwestern Energy)
- 8:55** **Zonal Isolation Assurance: Relating Cement Mechanical Properties to Mechanical Durability:** J. McDaniel, N. K. Combs, L. Watters (CSI Technologies, LLC)
- 9:20** **A Hole in Your Pocket; Mitigating Corrosion Perforations of Well Casings in Corrosive Formations With Advanced Technology Epoxies:** J. McDonald (Hempel USA)
- 9:45** **Refreshment Break**
- 10:25** **Multi-Well Facility Optimization:** T. Farley, T. Hutchinson* (Halker Consulting)
- 10:50** **A New Analytical Model for Liquid Loading in Shale Gas Reservoirs:** J. Shi², X. Li², Y. Pu², W. Yu¹ (1. The University of Texas at Austin; 2. China University of Petroleum)

Interactive Panel: Converting Technology Into Dollars

Mile High Ballroom 4 D/E/F

Moderator: Doug Valleau, Director Unconventional Tech Onshore, Hess Corporation

Shy of two decades since the Barnett shale became a commercial reality for Mitchell, we are still coming up with new innovative ways to “unlock the rock” from its precious hydrocarbons. While offshore conventional reservoirs have been producing over 50 years and every day we come up with new innovative ways to improve our recovery efficiencies in those systems, we are still in stages of infancy when it comes to understanding tight reservoirs. This distinguished panel will explore how top-tier organizations lead the way by rapidly improving and deploying unconventional resource technologies and incorporating new learnings across their organizations.

8:25 Introductory Remarks

8:30 D. Nathan Meehan, Senior Executive Advisor, Baker Hughes Inc.

8:45 Bob Hardage, Senior Research Scientist, Bureau of Economic Geology

9:00 Mark Sonnenfeld, Vice President Geosciences, Whiting Petroleum

9:15 Dennis Degner, Director of Operations, Range Resources

9:30 Jeff Meisenholder, Vice President, Unconventional Resources, Schlumberger

9:45 Refreshment Break

10:25 Michael Ming, General Manager Oil & Gas Technology Center, GE Global Research

10:40 Interactive Panel Q & A

11:20 Audience Q & A

Morning ePapers

Theme 2: Drivers for Understanding Reservoir Quality

Exhibition Hall, Station A

Co-Chairs: E. Michael and R. Harris

9:30 Isolated-Cell Pressure Decay Testing for Fast Characterization of Ultra-Low Rock Permeability and Gas Slippage Effects: M. Chertov, R. Suarez-Rivera (Schlumberger)

9:55 Better Exploitation of Granitic Reservoirs: Understanding the Role of Stress Regime and Fractures: D. Lirong¹, C. Shrivastava², D. Chuanshu¹, W. Jingchun¹, N. Hammond^{*2}, C. Anoliefo², D. Lei², M. Siddick¹ (1. Chinese National Petroleum Corporation (CNPC) International (Chad) Limited; 2. Schlumberger)

10:20 The Avalon Shale: Tying Geologic Variability to Productivity in a Burgeoning Shale Play in the Delaware Basin of Southeast New Mexico: P. Nester, K. Schwartz, J. Bishop, M. Garcia-Barriuso (Chevron)

10:45 Effect of Stress, Creep and Fluid Type on Steady State Permeability Measurements in Tight Liquid Unconventional Reservoirs: S. S. Chhatre¹, S. Sinha¹, E. M. Braun², W. L. Esch¹, M. D. Determan¹, Q. R. Passey¹, S. A. Leonardi¹, T. E. Zirkle¹, A. C. Wood¹, J. A. Boros¹, R. A. Kudva¹ (1. ExxonMobil Upstream Research Company; 2. Contractor)

11:10 Matrix-Fracture Connectivity in Eagle Ford Shale: C. J. Landry, A. Tokan-Lawal, M. Prodanovic, P. Eichhubl (University of Texas at Austin)

Theme 3: Shale Core Analysis

Exhibition Hall, Station B

Co-Chairs: M. Mullen and P. Connolly

9:30 Calculation of Rock Compressibility by Use of Pressure Buildup in Permeability Experiment: J. He, K. Ling, P. Pei (University of North Dakota)

9:55 Experimental Assessment of Elastic Properties and Minimum Horizontal Stress in the Haynesville Shale Gas Formation: C. Chen Valdes, Z. Heidari* (Texas A&M University)

10:20 Probabilistic Facies Assignments in the La Luna Formation, Middle Magdalena Basin, Colombia, From Standard Well Logs Using Whole Core CT Scan Data as Initialization Input: E. Eslinger², M. Cantisano³, N. Marfisi³, R. M. Slatt¹, Z. Pachon⁴ (1. University of Oklahoma; 2. EGI; 3. Ecopetrol; 4. Colombian Petroleum Institute of Ecopetrol)

Theme 5: Optimizing Recovery Using Geomechanics

Exhibition Hall, Station B

Co-Chairs: B. A. Tocher and A. N. Tutuncu

10:45 Effects of Variations of Stress-Dependent Hydraulic Properties of Proppant Packs on the Productivity Indices of the Hydraulically Fractured Shale Gas Reservoirs: A. Takbiri Borujeni (West Virginia University)

Theme 7: Analytics and Workflows

Exhibition Hall, Station C

Co-Chairs: H. Xiong and F. Cornell**9:30 A Workflow for Flowback Data Analysis — Creating Value Out of Chaos:** O. Ezulike, H. Dehghanpour (University of Alberta)**Theme 7: Reservoir Modeling**

Exhibition Hall, Station C

Co-Chairs: H. Kalaei and M. D. Wilkins**9:55 Development of Semi-Analytical Model for Simulation of Gas Production in Shale Gas Reservoirs:** W. Yu, K. Sepehrnoori (The University of Texas at Austin)**10:20 Optimum Fracture Spacing in the Eagle Ford Gas Condensate Window:** A. Sanaei, A. Jamili, J. Callard (University of Oklahoma)**Tuesday Topical Luncheons ▼****Time:** 12:05 p.m.–1:15 p.m.
Fee: \$50 per person

A ticket is required for Topical Luncheon admission.

ADMIT ONE**Sustaining the Unconventional Oil and Gas Revolution****Location:** Four Seasons Ballroom 1**Philip H. "Pete" Stark, Senior Research Director and Advisor, IHS Energy Corporation**

The unconventional oil and gas revolution has delivered dramatic increases in U.S. oil and gas resources and supplies. The magnitude of the shale and tight gas resource is huge and capable of meeting anticipated natural gas demand for many decades. The identified tight oil resource base is substantial but oil supplies could reach a plateau within ten years or less at projected drilling rates. Sustaining the tight oil revolution is a challenge to the petroleum industry. This presentation examines key geoscience and technology challenges and factors that will dictate the shape of the future oil supply curve.

**Geochemical Methods for Determining the Origin of Stray Gas in Aquifers Near Oil and Gas Wells****Location:** Mile High Ballroom 3 A/B**Mark McCaffrey, Geoscience Manager of Interpretive Services, Weatherford Laboratories**

As the pace of drilling in the United States has increased, so has the number of alleged incidents of stray natural gas migration to shallow aquifer systems. Using examples from the Barnett and Marcellus gas resource play areas, this talk presents the geochemical methodology for determining if gas in an aquifer is, or is not, related to petroleum development activities.

**Upstream M&A Review and 4th Quarter Expectations****Location:** Four Seasons Ballroom 4**Tim Sulser, Director, Investment Banking, Tudor, Pickering, Holt, & Co.**

The talk will discuss the broader 2014 M&A market and relevant unconventional transactions showing how the deal market has evolved specifically in the Bakken, DJ-Niobrara, Powder River, Permian and Eagle Ford unconventional resource plays. A comparison and contrast of the valuation frameworks and what differentiate core acreage metrics in each of the plays will be reviewed. Activity in the market is a barometer of the constant advance of technical development and industry's perspective on future value.

Tuesday Afternoon Technical Program ▼

*Denotes presenter other than first author.

Oral Sessions**Theme 5: Evaluating Stimulation Effectiveness**

Four Seasons Ballroom 2 & 3

Co-Chairs: M. Honarpour and S. Sturm**1:45 Introductory Remarks****1:50 Flow Modeling in Multi-Stage Hydraulic Fracturing Patterns to Optimize Shale Reservoir Production:** A. Almulhim, A. N. Tutuncu, H. Kazemi (Colorado School of Mines)**2:15 Effect of Acid on Productivity of Fractured Shale Reservoirs:** M. Pournik, D. Tripathi (University of Oklahoma)

- 2:40 Mechanical Analysis of Interaction Between Hydraulic and Natural Fractures in Shale Reservoirs:** K. Wu, J. Olson (The University of Texas at Austin)
- 3:05 Refreshment Break**
- 3:45 Creating, Calibrating and Testing a Hydraulic Fracture Model for Optimized Williston Basin Completions:** J. Barhaug, H. Harper, A. Southcott (WPX Energy)
- 4:10 Integration of Distributed Temperature and Distributed Acoustic Survey Results With Hydraulic Fracture Modeling: A Case Study in the Woodford Shale:** J. Miskimins¹, B. E. Wheaton^{2*}, D. Wood², T. Lowe², R. Barree¹ (1. Barree & Associates; 2. Devon Energy Corporation)
- 4:35 Microseismicity and Geomechanics: Modeling and Comparisons:** S. Johnson, R. R. Settgaest, P. Fu, S. Walsh (Lawrence Livermore National Laboratory)
- 5:00 A Hydraulic Fracture Network Propagation Model in Shale Gas Reservoirs: Model Development and Parametric Studies:** C. Ahn¹, R. Dillmore², J. Wang¹, O. Chang¹ (1. Penn State University; 2. U.S. Department of Energy)

Theme 2: Formation Evaluation

Room 401/402/403/404

Co-Chairs: A. N. Tutuncu and D. L. Hall

- 1:45 Introductory Remarks**
- 1:50 A Formation Evaluation of the Middle Bakken Member Using a Multimineral Petrophysical Analysis Approach:** R. Klenner, J. R. Braunberger, J. A. Sorensen, K. E. Eylands, A. Azenkeng, S. A. Smith (University of North Dakota)
- 2:15 Improved Constant Rate of Strain Consolidation Test on Stiff Shale:** D. Katsuki, M. Gutierrez, A. N. Tutuncu (Colorado School of Mines)
- 2:40 Assessment of Micro-Fracture Density Using Combined Interpretation of NMR Relaxometry and Electromagnetic Logs:** L. Chi, M. Elliot, Z. Heidari*, M. Everett (Texas A&M University)
- 3:05 Refreshment Break**
- 3:45 Well-Log-Based Assessment of Elastic Properties in Organic-Shale Formations:** A. Aranibar, C. Chen Valdés, Z. Heidari* (Texas A&M University)
- 4:10 Discrete Fracture Network Simulation of Production Data From Unconventional Wells:** T. Doe, C. Shi, C. Knitter, C. Enachescu, S. Rohs (Golder Associates)
- 4:35 A Practical Method to Predict Deliverability and Water-Cut in the Granite Wash Formation, Anadarko Basin, USA, Using Pseudo-Capillary Pressure Curves From NMR Data:** C. Mardi, R. A. Pour, D. Spain, C. Morton (BP America)
- 5:00 A Pore Scale Analysis of Restricted Diffusion in Shale Gas Media:** A. Mehmani¹, J. Chen², D. Georgi², M. Prodanovic¹, C. Edwards³ (1. The University of Texas at Austin; 2. Aramco Services Company & Aramco Research Centers; 3. Baker Hughes)

Theme 1: Regional Case Studies II: Integrated Technologies That Deliver Bottom Line Results

Room 205/207

Co-Chairs: P. M. Basinski and T. Collier

- 1:45 Introductory Remarks**
- 1:50 Importance of Structural and Tectonic Inheritance for Unconventional Basin Play Prospectivity: An Example From the Powder River Basin:** M. Tischer, G. Zimbrick, M. Dolan (Dolan Integration Group)
- 2:15 Shale Resource Assessment & Development — A Full Life Cycle Integrated Approach:** P. K. Pande (Anadarko Petroleum)
- 2:40 Effect of Mineralogy on NMR, Sonic, and Resistivity: A Case Study of the Monterey Formation:** S. Rivera, M. Prasad (Colorado School of Mines)
- 3:05 Refreshment Break**
- 3:45 Team Presentation: The Duvernay Formation: Integrating Sedimentology, Sequence Stratigraphy and Geophysics to Identify Sweet Spots in a Liquids-Rich Shale Play, Kaybob Alberta:** L. Dunn, J. A. Humenjuk (Athabasca Oil Corp)
- 4:10 Regional Modeling of the Late Devonian Duvernay Formation, Western Alberta, Canada:** P. A. Fothergill, D. Boskovic, P. Murphy, M. Mukati, N. Schoellkopf (Schlumberger)
- 4:35 Using Microseismicity to Understand Subsurface Fracture Systems and to Optimize Completions: Eagle Ford Shale, TX:** J. Detring, M. Grealy* (MicroSeismic Inc.)
- 5:00 Rate Step-Down Analysis Improves Placement Efficiency of Stimulation Treatments in Unconventional Resource Play:** N. D. Pandya, O. Jaripatke (Pioneer Natural Resources)

Theme 2: Seismic Attributes for Characterizing Rock Properties and Reservoirs I

Room 405/406/407

Co-Chairs: D. Wilson and M. Van Horn


- 1:45 Introductory Remarks**
- 1:50 Understanding Rock Quality Heterogeneity Using Combined Multicomponent Seismic Inversion and Well Log Cluster Analysis. Montney Shale Reservoir, Pouce Coupe Field, Alberta, Canada:** C. J. Duenas¹, T. Davis¹, D. D'Amico² (1. Colorado School of Mines; 2. Talisman)

- 2:15 Integrated Interpretation of Seismically Derived Rock and Fracture Attributes for Shale Gas Reservoir Characterization:** G. Yu¹, Y. Zhang¹, X. Liang², U. Strecker³, M. Smith³ (1. BGP, Inc.; 2. Zhejiang Oilfield; 3. RSI)
- 2:40 Utilizing Ant-Tracking to Identify Slowly Slipping Faults in the Barnett Shale:** N. Farghal, M. Zoback (Stanford University)
- 3:05 Refreshment Break**
- 3:45 Geomechanical and Flow Simulation of Hydrofracs Using High-Resolution Passive Seismic Images:** A. Lacazette¹, W. Dershowitz², J. Vermilye¹ (1. Global Geophysical Services; 2. Golder Associates)
- 4:10 3-D Seismic Characterization of the Niobrara Formation, Silo Field, Laramie County, Wyoming:** E. Finley, S. Sonnenberg (Colorado School of Mines)
- 4:35 An Efficient Optimization Workflow for Field-Scale In-Situ Upgrading Developments:** G. Gao, J. C. Vink, F. O. Alpak, W. Mo (Shell)
- 5:00 Geomodeling Unconventional Plays: Improved Selection of Uncertainty Cases:** M. L. Belobraydic, P. Kaufman (Schlumberger)

Theme 8: Water Management and Social License to Operate

Room 201/203


Co-Chairs: A. Wharton and K. M. Jones

- 1:45 Introductory Remarks**
- 1:50 Geologic and Reservoir Assessment for Brine Disposal in the Northern Appalachian Basin:** J. Sminchak, N. Gupta*, M. Moody, J. Miller (Battelle)
- 2:15 Using Stable Isotopes and Water Quality to Investigate Sources of Stray Gas in the Wattenberg Field of Colorado:** J. Strauss¹, A. Schaiberger¹, N. A. Rosenau¹, P. Travers¹, O. Sherwood², M. Dolan¹ (1. Dolan Integration Group; 2. University of Colorado)
- 2:40 Toxic Metals in Shales: Questions and Methods for a Better Management of Flow-Back Waters:** E. C. Gaucher¹, J. Lerat², J. Sterpenich², R. Mosser-Ruck², J. Pironon² (1. TOTAL; 2. University of Lorraine)
- 3:05 Refreshment Break**
- 3:45 Not Accounting for a Potential Water Hammer Pressure Surge in Shale Stimulation Designs Can Increase Your Over-Pressure Risk:** S. Stephenson, J. Beisel, B. Bull (Halliburton)
- 4:10 Interlinking Engineering and Social Performance Into Sustainability Using the Triple Bottom Line Principal:** J. Bell (Elements Offshore)
- 4:35 Demonstrating Social Responsibility in Water Management Decisions:** T. L. Taylor¹, E. Bergeron¹, C. Mulligan², B. Bourque¹ (1. Golder Associates Inc.; 2. Concordia University)
-  **5:00 Team Presentation: Impacts That Non-Technical Risk Assessments and Mitigation Plans Can Have in Mitigating Risks and Avoiding Delays to Unconventional Oil and Gas Projects:** J. Belcher¹, F. Perez² (1. HBW Resources, LLC; 2. Sfile)

Theme 11: Emerging Plays I: Roadway From Ideas to Sweetspots

Mile High Ballroom 4 A/B/C

Co-Chairs: B. Driskill and J. Bell

- 1:45 Introductory Remarks**
- 1:50 Technical Aspects Controlling the Emerging Eagle Ford Play East of the San Marcos Arch:** R. McLean, D. Miertschin, K. Owen, N. Winters, N. Whitman (Halcon Resources)
- 2:15 Understanding and Updating the Eagle Ford East-Eaglebine:** T. D. Bowman (ZaZa Energy Corp)
- 2:40 Aptian 'Shale Gas' Prospectivity in the Downip Mississippi Interior Salt Basin, Gulf Coast, USA:** P. Hackley, B. J. Valentine, C. B. Enomoto, C. D. Lohr, K. R. Scott, F. T. Dulong, A. M. Bove (USGS MS 956)
- 3:05 Refreshment Break**
-  **3:45 Team Presentation: North American Ordovician Unconventional Oil Potential:** T. D. Bowman¹, P. Mukhopadhyay² (1. ZaZa Energy Corp; 2. Global Geoenergy Research Ltd)
- 4:10 More Efficient and Cost Effective Ways of Evaluating and High Grading Unconventional Plays:** J. Edman¹, E. Sprunt², J. Newman³ (1. Edman Geochemical Consulting, LLC; 2. Eve Sprunt and Associates; 3. Newman Energy Research Ltd)
- 4:35 An Innovative Workflow to Refine Exploration Phase Assessment of Unconventional Prospects; Using Xrf Analysis and 3-D Geo-Modeling Techniques:** F. Marechal (Quicksilver Resources Canada Inc.)
- 5:00 An Exploration Workflow to Improve Success Rate in Prospecting in Unconventional Emerging Plays:** R. Salter, J. Meisenhelder, I. D. Bryant, C. Wagner (Schlumberger)



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Interactive Panel: Water Management and the Link to License to Operate

Mile High Ballroom 4 D/E/F

Moderator: Andrew Wharton, General Manager HSSE, BG Group

The use of technology to improve the efficiency of how water is transported and used in unconventional resources development is, and will increasingly be, critical to the future of the unconventional hydrocarbon resources industry. Demonstrating continuous improvement in water management will lead to an increase in operational performance and help ensure water is appropriately managed to meet industry needs as well as the needs of other stakeholders. "License to Operate" is the broad recognition, on the part of stakeholders in each place where unconventional resource development may occur, that this development is legitimate and brings a positive contribution to all concerned. The panel will cover examples of where technology advances in water management are improving the way water is transported and used, and how this in turn can help the unconventional hydrocarbon resources industry demonstrate its "license to operate" to a range of stakeholders.

1:45 Introductory Remarks

1:50 Pete Miller, Water Resources Manager, Range Resources

2:00 Carl E. Adams Jr., Principal, ENVIRON

2:10 Stephen Jester, Senior Principal Environmental Engineer, ConocoPhillips

2:20 Interactive Panel Q & A

2:45 Audience Q & A

Interactive Panel: Emerging International Plays

Mile High Ballroom 4 D/E/F

Moderator: Luis Baez, BG Americas and Global LNG

The development of onshore unconventional resources in North America has shifted the future of U.S. natural gas and oil supplies and has dramatically changed the game in domestic exploration, drilling and production for decades to come. The question is if this will have the same effect globally. How do we effectively transport the skills sets we have acquired to the international scene? As little as we know about the potential of these global unconventional plays, we need to answer what will be the most effective and commercially attractive ways to unlock these reservoirs. This expert panel will share their experiences, strategies and key challenges to achieving these goals to present on plays from Europe, Latin America, Middle East and Australia.

3:45 Introductory Remarks

3:50 Brian Gratto, Manager, Unconventional Resource Exploration, Saudi Aramco

4:00 Andrew Quarles, Technical Director, Cuadrilla Resources

4:10 Ray Johnson Jr., Principal, Unconventional Reservoir Solutions

4:20 Mark Ian Smithard, Business Development Manager (Unconventionals), Chevron Africa & Latin America E&P

4:30 Interactive Panel Q & A

4:50 Audience Q & A

Afternoon ePapers

Theme 2: Multi-Discipline Data Integration III

Exhibition Hall, Station A

Co-Chairs: L. Shannon and M. Kendrick

1:50 Understanding Tortuosity and Permeability Variations in Naturally Fractured Reservoirs: Niobrara Formation: A. Tokan-Lawal, C. J. Landry, M. Prodanovic, P. Eichhubl (The University of Texas at Austin)

2:15 Quantification of Total Organic Carbon Content in Shale Source Rocks: An Eagle Ford Case Study: A. A. Alqahtani, A. N. Tutuncu (Colorado School of Mines)

2:40 Team Presentation: Reservoir Characterization of the Bakken Petroleum System – A Regional Data Analysis Method (Phase I of II): K. Gangiredla, D. Westacott (Halliburton)

Theme 3: Imaging Unconventional Reservoir Pore Systems

Exhibition Hall, Station B

Co-Chairs: T. Olson and M. Mullen

- 1:50 Multiscale (Nano to mm) Porosity in the Eagle Ford Shale: Changes as a Function of Maturity:** L. M. Anovitz¹, D. R. Cole², A. M. Swift², J. Sheets², H. W. Elston², S. A. Welch², S. J. Chipera³, K. C. Littrell¹, D. F. Mildner⁴, M. Wasbrough⁴ (1. Oak Ridge National Laboratory; 2. Ohio State University; 3. Chesapeake Energy; 4. NIST Center for Neutron Research)
- 2:15 Characterizing Unconventional Resource Potential in Colombia: A Digital Rock Physics Project:** J. D. Walls¹, J. Anderson¹, E. Diaz² (1. Ingrain; 2. Shell Exploration and Production)
- 2:40 High-Resolution Three-Dimensional Characterization of Pore Networks in Shale Reservoir Rocks:** S. Saraji, M. Piri (University of Wyoming)
- 3:05 Characterization of cm-Scale Heterogeneities in a Tight Oil Reservoir Using X-Ray Computed Tomography, Profile Permeability Measurements and 3-D Image Analysis:** N. A. Solano, F. F. Krause, C. R. Clarkson (University of Calgary)
- 3:30 A Multi-Scale Framework for Digital Core Analysis of Gas Shale at Millimeter Scales:** J. Ma, G. Couples, Z. Jiang, R. van Dijke (Heriot-Watt University)
- 3:55 Protocol for Finalizing Locations for FIB/SEM Cubes on Shale Samples: General Guidelines With Up Scaling in Mind:** K. N. Hooghan¹, M. L. Dixon¹, L. Hathon² (1. Weatherford Labs; 2. Shell)
- 4:20 Organic and Inorganic Pore Structure Analysis in Shale Matrix With Superposition Method:** C. Wang¹, J. Yao², K. Wu³, Z. Chen¹, H. Sun², Y. Yang² (1. University of Calgary; 2. China University of Petroleum (East China); 3. China University of Petroleum (Beijing))

Theme 4: Organic Geochemistry

Exhibition Hall, Station C

Co-Chairs: M. Laughland and C. Laughrey

- 1:50 A Quantitative Study of Hydrocarbon Generation & Expulsion of Lower Silurian Longmaxi Shale in the Southern Sichuan Basin:** X. Chen, J. Li, T. Yang, W. Yan (Research Institute of Petroleum Exploration & Development, Petrochina)
- 2:15 Distribution of Polycyclic Aromatic Hydrocarbons and Heterocyclic Compounds in Kolmani River-1 Well, Upper Benue Trough, Nigeria: Implications on Depositional Environments and Thermal Maturity of Organic Matter:** T. A. Adedosu¹, R. T. Ajayi², X. Yongqiang³, L. Yun³, F. Chenchen³, C. Yuan³, A. Akinlua⁴ (1. Ladoke Akintola University of Technology Ogbomoso Nigeria; 2. Obafemi Awolowo University; 3. Guangzhou Institute of Geochemistry, Chinese Academy of Sciences; 4. Obafemi Awolowo University)

Theme 5: Using Geoscience and Petrophysics Data to Improve Completions

Exhibition Hall, Station C

Co-Chairs: D. Hume and B. A. Tocher

- 2:40 Cross Correlation of Wire Line Data and SEM Based Mineralogical and Textural Vertical Well Data: A New Tool for Intelligent Completion Designs and Better Production Predictions:** M. Mulkern¹, C. Cunningham¹, C. V. Ly², G. Spence², G. Oliver², J. K. Flavin³, C. Jackson³, S. Centurion³ (1. EdgeMarc Energy Holdings LLC; 2. CGG; 3. Baker Hughes Inc.)
- 3:05 Optimizing Lateral Completions When Limited or No Log Data is Available:** B. Scanlan (NuTech Energy Alliance)

Theme 7: Flow and Phase Behavior

Exhibition Hall, Station A

Co-Chairs: M. Sharma and T. Ellison

- 3:05 Modeling Gas Transport in Shale Reservoir — Conservation Laws Revisited:** W. Xu (Schlumberger)
- 3:30 Nanotomography of Spontaneous Imbibition in Shale:** M. Akbarabadi, M. Piri (University of Wyoming)
- 3:55 Apparent Permeability for Gas Flow in Shale Reservoirs Coupling Effects of Gas Diffusion and Desorption:** K. Wu¹, X. Li¹, C. Wang², W. Yu³, Z. Chen² (1. China University of Petroleum; 2. University of Calgary; 3. The University of Texas at Austin)



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Wednesday Topical Breakfasts ▼

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

A ticket is required for Topical Breakfasts admission.

ADMIT ONE



Characterizing Shale Plays — The Importance of Recognizing What You Don't Know

Location: Four Seasons Ballroom 1

Brad Berg, Reservoir Engineering Manager for U.S. Onshore Exploration, Anadarko Petroleum Corporation

Unconventional resource plays typically exhibit much more uncertainty in individual well performance than conventional reservoirs, particularly during the exploration drilling phase when one has relatively few wells on which to base decisions. A systematic approach to understanding and managing this uncertainty can be used to address key questions during this phase, including “how many wells do I need to drill before I have confidence in the results?” and “does the well performance I’ve seen to date provide the encouragement needed to keep drilling?”. Understanding this uncertainty in well performance, and planning for it, will lead to more efficient exploration activity and better informed decision-making.



What Have We Learned About Fracturing Shales After 12 Years Of Microseismic Mapping

Location: Four Seasons Ballroom 4

Shawn Maxwell, President and CTO, IMaGE

Effective hydraulic fracture stimulation is critical for shale development and Microseismic is the only technology able to map the growth of these hydraulic fracture networks. Since the advent of commercial mapping in the Barnett Shale in 2000, Microseismic has been used to investigate hydraulic fracture treatments around the globe. Microseismic images of complex fracture networks have fundamentally changed the conceptual view of hydraulic fractures and offer promise to estimate the effective propped volume of the fracture network.



Why Look at Rocks? Integrating Qualitative and Quantitative Approaches for a More Predictive Understanding of Reservoirs

Location: Mile High Ballroom 3 A/B

Kitty Milliken, Senior Research Scientist at the Bureau of Economic Geology in the Jackson School of Geosciences, University of Texas at Austin

This talk will examine how the “soft” qualitative approaches to rock description can be combined with “hard” quantitative measurements to yield rock-property models of considerable predictive value. Historical examples from conventional reservoirs will be contrasted with our rapidly evolving understanding of fine-grained sedimentary systems. There is great opportunity for combining qualitative and quantitative approaches in the quest to gain predictive powers over unconventional reservoirs.

Wednesday Morning Technical Program ▼

*Denotes presenter other than first author.

Oral Sessions

Theme 5: Optimizing Recovery Using Geomechanics

Four Seasons Ballroom 2 & 3

Co-Chairs: A. N. Tutuncu and J. Frantz

8:25 **Introductory Remarks**

8:30 **Natural-Hydraulic Fracture Interaction: Microseismic Observations and Geomechanical Predictions:** J. Huang¹, R. Safari¹, K. Burns¹, I. Geldmacher¹, U. Mutlu¹, M. McClure², S. Jackson³ (1. Weatherford; 2. University of Texas at Austin; 3. S2S Systems International Inc.)

8:55 **A Comprehensive Methodology of Evaluation of the Fracability of a Shale Gas Play:** K. Su, A. Onaisi, A. Garnier (TOTAL EP)

9:20 **Integration of Core Data With Well Logs for Geomechanical Property Determination and Monitoring in the Argentinean Vaca Muerta Shale Formation:** M. Willis, A. N. Tutuncu (Colorado School of Mines)

9:45 **Refreshment Break**

10:25 **Simulation of Hydraulic Fracture Networks in Three Dimensions Utilizing Massively Parallel Computing Resources:** R. R. Settigast, S. Johnson, P. Fu, S. Walsh, J. White (Lawrence Livermore National Laboratory)

10:50 **Predicting Microseismicity From the Geomechanical Modeling of Multiple Hydraulic Fractures Interacting With Natural Fractures — Application to the Marcellus and Eagle Ford:** Y. E. Aimene¹, J. A. Nairn¹, A. Boudjema² (1. Oregon State University; 2. Go Geoengineering)

11:15 **Dependence of Micro-Mechanical Properties on Lithofacies: Indentation Experiments on Marcellus Shale:** J. Mason¹, J. Carloni^{*2}, S. Baker², A. Zehnder³, T. Jordan¹ (1. Cornell University; 2. Cornell University; 3. Cornell University)

11:40 **Where Did the Proppant Go?:** J. P. McKenna (MicroSeismic, Inc.)

Theme 2: Seismic Attributes for Characterizing Rock Properties and Reservoirs II

Room 401/402/403/404

Co-Chairs: B. A. Tocher and S. Obkircher

8:25 **Introductory Remarks**

8:30 **Multi-Focusing 3-D Diffraction Imaging for Detection of Fractured Zones in Mudstone Reservoirs:** A. Schoepp¹, E. Landa², S. Labonte¹
(1. Shell Canada; 2. Advisory Board, Geomage)

8:55 **Comparison of Marcellus Fracturing Using Azimuthal Seismic Attributes Versus Published Data From Outcrop Studies:** T. L. Inks¹, T. Engelder², J. S. Hocum³, B. Golob³, D. O'Brien⁴ (1. IS Interpretation Services, Inc.; 2. Pennsylvania State University; 3. ION GXT; 4. Solutions Engineering)

9:20 **Fracture Detection Through Multi-Focusing Diffraction Imaging, Case Studies:** M. Rauch-Davies, D. Pelman, K. Deev (Geomage Ltd.)

9:45 **Rock-Fluid Interaction Impact on Geomechanical and Acoustic Properties in Shale Reservoirs: Anisotropic Grain Contact Adhesion Model:** B. T. Bui, A. N. Tutuncu (Colorado School of Mines)

Theme 2: Optimizing Workflows for Reservoir Types

Room 401/402/403/404

Co-Chairs: B. A. Tocher and S. Obkircher

10:45 **Introductory Remarks**

10:50 **Advanced Core Analysis Methodologies Quantify and Characterize Liquid Hydrocarbons in the Vaca Muerta Shale:** R. Williams, D. Willberg, D. Handwerger, D. Ekart, J. Petriello, R. Suarez-Rivera (Schlumberger)

11:15 **Production Acceleration Through Managed Annular Flow Operations:** J. E. Chirinos (Talisman Energy USA)

11:40 **3-D Seismic Proves Its Value in Bakken Geosteering:** A. Southcott, H. Harper (WPX Energy)

Theme 6: Leveraging Data, Modeling and Analytics

Room 205/207

Co-Chairs: K. J. Nygaard and S. Reeves

8:25 **Introductory Remarks**

8:30 **Application of Artificial Intelligence on Black Shale Lithofacies Prediction in Marcellus Shale, Appalachian Basin:** G. Wang¹, Y. Ju¹, T.R. Carr², C. Li¹, G. Cheng³ (1. University of Chinese Academy of Sciences; 2. West Virginia University; 3. Xi'an Shiyou University)

8:55 **Optimization of Well Spacing for Bakken Tight Oil Reservoirs:** W. Yu, K. Sepehrnoori (The University of Texas at Austin)

9:20 **Shale Development: Using Imagery and Digital Elevation Models to Improve Operational Efficiency:** J. A. Parker (Spatial Energy)

9:45 **Refreshment Break**

10:25 **The Long-Term Economic Value of Curable Resin-Coated Proppant Tail-In to Prevent Flowback and Reduce Workover Cost:** K. Greff, S. Greenbauer, K. Huebinger, B. Goldfaden (Santrol)

10:50 **Understanding the Trade Offs in Drilling the Perfect Horizontal Well:** K. Oren (GeoStar Solutions)

11:15 **A Stochastic Approach to Shale Well Completion Design:** M. A. Miller (Promethean Technologies Group LLC)

11:40 **Developing Reliability in Hydraulic Stimulation Operations:** J. Pitcher, J. Painter, A. Heitsch, L. Turpin (Cameron)

Theme 3: Shale Core Analysis

Room 405/406/407

Co-Chairs: P. Connolly and M. Mullen

8:25 **Introductory Remarks**

8:30 **The Effect of CO₂ Adsorption on Permeability Anisotropy in the Eagle Ford Shale:** M. Al Ismail, J. S. Reece, S. Hol, M. Zoback (Stanford University)

8:55 **Core Hardness Testing and Data Integration for Unconventionals:** E. Ritz, M. Honarpour¹, W.F. Dula¹, J.P. Dvorkin² (1. Hess Corporation; 2. Stanford University)

9:20 **Characterization and Measurement of Multi-Scale Gas Transport in Shale Core Samples:** K. R. Alnoaimi, C. Duchateau, A. Kovscek (Stanford University)

9:45 **Refreshment Break**

10:25 **Clay Typing, Mineralogy, Kerogen Content and Kerogen Characterization From DRIFTS Analysis of Cuttings or Core:** M. Herron, M. Loan, A. Charsky, S. L. Herron, A. E. Pomerantz, M. Polyakov (Schlumberger-Doll Research)

10:50 **Integrating Solvent Extraction With Standard Pyrolysis to Better Quantify Thermal Maturity and Hydrocarbon Content in the Oil Window:** D. R. Collins, S. Lapierre (Pioneer Natural Resource)

11:15 **Variations in Shale Pore Types and Their Measurement:** R. Slatt¹, N. O'Brien² (1. University of Oklahoma; 2. State University of New York at Potsdam)

- 11:40 Pore Accessibility and Connectivity of Mineral and Kerogen Phases for Shales:** Q. Hu¹, X. Gao¹, Z. Gao¹, R. Ewing², S. Dultz³, J. Kaufmann⁴ (1. University of Texas at Arlington; 2. Iowa State University; 3. Leibniz University of Hannover; 4. Swiss Federal Laboratories for Materials Testing and Research)

Theme 7: Analytics and Workflows

Room 201/203

Co-Chairs: H. Xiong, M. Sharma and F. Cornell

8:25 Introductory Remarks

8:30 Generative Models for Production Forecasting in Unconventional Oil and Gas Plays: H. A. Kuzma¹, N. S. Arora¹, K. Farid² (1. BetaZi LLC; 2. Merrick Systems Inc.)

8:55 Estimating Reservoir Pressure From Early Flowback Data: R. S. Jones, B. Pownall, J. Franke (Newfield Exploration Company)

9:20 Dynamic Characterization of Unconventional Gas Reservoirs: Field Cases: J. A. Arevalo¹, F. Castellanos¹, F. Pumar-Martínez² (1. Pemex E&P; 2. CBM)

9:45 Leveraging the Power of Public Data to Solve Multiple Challenges in Unconventional Reservoirs: S. Gupta, R. Banerjee (Schlumberger)

Theme 7: Flow and Phase Behavior

Room 201/203

Co-Chairs: M. Sharma and T. Ellison

10:45 Introductory Remarks

10:50 A Unified Leak-Off and Flow-Back Model for Fractured Reservoirs: D. Copeland (Halliburton)

11:15 Shale PVT Estimation Based on Readily Available Field Data: T. Yang, R. Basquet, A. Callejon, J. Roosmalen, B. Bartusiak (Statoil)

11:40 Accounting for Remaining Injected Fracturing Fluid in Shale Gas Wells: Y. Zhang, C. Ehlig-Economides (Texas A&M University)

The Long-Term Economic Value of Curable Resin-Coated Proppant Tail-In to Prevent Flowback and Reduce Workover Cost

Theme 6

Room 205/207

August 27

10:25 a.m.

Please attend this technical presentation by lead author Keith Greff. After the presentation, Keith will be in Santrol booth 1343 to answer additional questions.



BOOTH 1343

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Theme 11: Emerging Plays II: Unconventional Going Global

Mile High Ballroom 4 A/B/C

Co-Chairs: P. Collins and J. Bamberger**8:25 Introductory Remarks****8:30 Total Play Fairway Analyses and Recommendations of Hydrocarbon Volume in Unconventional Cretaceous Plays in the Eastern Cordillera, Colombia: A New Frontier:** J. E. Leonard, F. R. Marcano* (Platte River Associates, Inc.)**8:55 Regional Sequence Stratigraphy of the Upper Cretaceous La Luna Formation in the Magdalena Valley Basin, Colombia:** H. A. Galvis-Portilla¹, I. Higuera-Díaz¹, S. Cespedes¹, C. Ballesteros¹, S. Forero¹, N. Marfisi¹, M. Cantisano¹, E. Pineda¹, Z. Pachon¹, R. M. Slatt², R. Ramirez³, G. Guzman³, A. Torres³ (1. Ecopetrol; 2. University of Oklahoma; 3. Genesis Consulting)**9:20 Resource Potential of the Alum Shale in Denmark:** D. Gautier¹, N. Schovsbo² (1. U.S. Geological Survey; 2. Geological Survey of Denmark and Greenland)**9:45 Refreshment Break****10:25 Team Presentation: Vaca Muerta Stratigraphy in Central Neuquen Basin: Impact on Emergent Unconventional Project:** M. Fantin, F. Gonzalez Tomassini, H. Reijenstein, L. Christopher, L. Crousse, S. Cuervo, D. Vallejo (Chevron)**10:50 Offshore Unconventional Oil From the Kimmeridge Clay Formation of the North Sea: A Technical and Economic Case:** C. Cornford¹, B. Birdsong¹, M. Groves-Gidney² (1. Extract Petroleum Ltd; 2. Trap Oil Ltd.)**11:15 Potential for Basin-Centered Gas in Saudi Arabia: Southwest Ghawar Basin – A Case Study:** M. Al Duhailan¹, M. J. Al Mahmoud², M. G. Al Otaibi² (1. Colorado School of Mines; 2. Saudi Aramco)**11:40 Analysis of Liquid Resource Play Potential in China:** N. J. Smith, L. J. Robinson, L. A. Cowley (NefteX)**Panel: Marcellus Shale: “Bottom Up” Integrated Assessment of Future Production and Reserves**

Mile High Ballroom 4 D/E/F

Moderator: Scott W. Tinker, Director, Bureau of Economic Geology, State Geologist of Texas, Professor, Edwin Allday Endowed Chair in Subsurface Geology, Jackson School of Geosciences, The University of Texas at Austin

A team of engineers, geoscientists and economists have spent the last three years studying four of the most prolific shale gas basins in the United States. The interdisciplinary study was focused on how much natural gas will be produced from the major shale gas plays by 2030. Field-wide mapping of key geologic parameters and a “bottom up” look at the estimated ultimate recovery of each well in each basin allow a comprehensive assessment of well economics and the construction of a production outlook model. Original gas in place, technically recoverable reserves and a range of estimated actual production using 5 p.m. - Monte Carlo simulation were determined for each of the four shale gas basins. Results from the Barnett, Fayetteville and Haynesville studies have been presented and published. This panel will present for the first time results from the Marcellus Shale.

8:25 Introductory Remarks**8:30 Geological Analysis of the Marcellus Shale for “Bottom Up” Production Forecasting and Resource Estimation:** Katie M. Smye, Eric Potter, Susan Horvath, and Scott W. Tinker**8:55 Forecast of Gas Production from Wells in the Marcellus Shale Using Scaling Methods:** Frank Male, Tad Patzek, Amin Ettehad, John Browning, Svetlana Ikonnikova, and Michael Marder**9:20 Fieldwide Assessment of Technically Recoverable Reserves for Marcellus Shale:** Svetlana Ikonnikova, John Browning, Frank Male, Tad Patzek, Michael Marder**9:45 Refreshment Break****10:25 Well Economics and Production Outlook of the Marcellus Shale Gas Play:** Svetlana Ikonnikova, Gürcan Gülen, John Browning, Eric Potter, and Scott W. Tinker**10:50 Constraints, Sensitivities, and Geographic Differences in the Marcellus Production Outlook:** Gürcan Gülen, Svetlana Ikonnikova, John Browning, and Scott W. Tinker**11:15 Consolidated Production Outlooks for Marcellus, Barnett, Fayetteville and Haynesville Shales:** John Browning, Svetlana Ikonnikova, Scott W. Tinker, Gürcan Gülen, Eric Potter, Katie M. Smye, Frank Male, Tad Patzek, Susan Horvath, and Qilong Fu**11:40 Discussion / Audience Q & A**

Morning ePapers

Theme 1: Regional Case Studies I: It Starts With the Rock

Exhibition Hall, Station A

Co-Chairs: P. M. Basinski and F. Arasteh

9:30 Anticosti Island, Quebec: Compelling Data for Deep Fairway Utica-Equivalent Oil: J. Marcil, P. K. Dorrins, J. Lavoie, N. Mechti (Junex)

9:55 The Upper Bakken Shale Resource Play, Williston Basin: S. Sonnenberg (Colorado School of Mines)

Theme 2: Reservoir Types: Shales, Sands and Carbonates

Exhibition Hall, Station B

Co-Chairs: D. N. Valteau and J. O'Brien

9:30 Reconstruction of Shale Based on Dual-Region Strategy and Very Fast Simulated Annealing Algorithm: M. Zou, W. Sui, X. Wang, S. Zhang (China University of Petroleum Beijing)

Theme 3: Characterizing Mudrocks With NMR

Exhibition Hall, Station C

Co-Chairs: H. Daigle and T. Olson

9:30 Porosity Evaluation of Shales Using NMR Secular Relaxation: H. Daigle, A. Johnson, J. P. Gips, M. Sharma (University of Texas at Austin)

9:55 Characterization of Free and Bound Fluids in Hydrocarbon Bearing Shales Using NMR and Py GC-MS: J. P. Gips, H. Daigle, M. Sharma (University of Texas-Austin)

10:20 Porosity and Pore Size Distribution in Mudrocks: A Comparative Study for Haynesville, Niobrara, Monterey and Eastern European Silurian Formations: M. Saidian, L. J. Godinez, S. Rivera, M. Prasad (Colorado School of Mines)

10:45 Characterization of Shale Oil Rocks Using Retort and Nuclear Magnetic Resonance: B. Zhang, J. Chen (Baker Hughes)

Theme 5: Enhanced Oil Recovery Techniques

Exhibition Hall, Station A

Co-Chairs: M. Ahmadi and T. Hoffman

10:20 Viscosity-Stabilized, High-Temperature, Low-Loading Fracturing Fluids in Hard Water: L. Li, Q. Qu, H. Sun, J. Zhou (Baker Hughes)

10:45 Chemically Induced Pressure Pulse to Increase Stimulated Reservoir Volume in Unconventional Reservoirs: A. Al-Nakhli, H. Abass (Saudi Aramco)

Theme 5: Evaluating Stimulation Effectiveness

Exhibition Hall, Station A

Co-Chairs: F. Arasteh and R. Fulks

11:35 Simulation of Multiple-Stage Fracturing in Quasibrittle Shale Formations Using Pore Pressure Cohesive Zone Model: M. Haddad, K. Sepehrnoori (The University of Texas at Austin)


Theme 9: Reserves Forecasting and Estimation

Exhibition Hall, Station B

Co-Chairs: L. Baez and T. Collier

10:20 Uncertainty in Quantification and Ranking of Stock Tank Oil Initially in Place (STOIIP) in OA Field, Niger Delta: O. A. Ehinola, O. Akinbodewa (University of Ibadan)

10:45 A New Method for Leak Detection in Gas Pipelines: K. Ling, J. He (University of North Dakota)

 **11:10 Team Presentation: Optimizing CBM PSC Exploration Wells for POD and Reserves Booking Using GIS Spatial Method, Case Study: South Sumatera Field, Indonesia:** F. S. Drajat, B. Sinaga, W. Adrian (PT PERTAMINA)

11:35 Using Technology to Avoid Trespass Liability Based on Subsurface Intrusions of Hydraulic Fractures: A. Dahi Taleghani, K. Hall* (Louisiana State University)

Theme 11: Emerging Plays I: Roadway From Ideas to Sweetspots

Exhibition Hall, Station C

Co-Chairs: B. Driskill and J. Bell

11:10 Vaca Muerta Formation: An Example of Shale Heterogeneities Controlling Hydrocarbon Accumulations: L. P. Stinco, S. P. Barredo (ITBA - UBA)

11:35 The Codell Sandstone Resource Play of the Northern Denver Basin: S. Sonnenberg (Colorado School of Mines)

Wednesday Topical Luncheons ▼

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

A ticket is required for Topical Luncheons admission.

ADMIT ONE



2013 Colorado Flood Recovery

Location: Mile High Ballroom 3 A/B

Shane Fross, General Manager – Rockies Completions, Anadarko Petroleum Corporation

In September, 2013 the Colorado front range received historic levels of rainfall resulting in flooding along the Platte and its associated tributaries. Oil and gas operations have been active in the DJ basin for many years and were affected by the 500 year flood event.

Industry was affected directly by the flooding and will continue to be impacted for many months after. This is the story of how industry approached the oncoming flood, how it worked the issues during the flood, and the efforts by industry to help that portion of the state outside of industry both during and after the crises. Specific lessons learned from Anadarko's operations will also be discussed.



Geology of the Alberta Oil Sands: Big Challenges, Big Rewards

Location: Four Seasons Ballroom 1

Fran Hein, Chief Geologist, Alberta Energy Regulator, President, Energy Minerals Division, A Division of American Association of Petroleum Geologists

This talk will cover the latest and greatest issues regarding the development of the vast oil-sands deposits of Alberta, including the geology, recovery methods, reserves estimates, and factors affecting sustainable development of these important hydrocarbon resources. This talk will highlight some of the major multidisciplinary issues that came out in the 2013 AAPG Studies in Geology 64 on heavy oil and oil sands.



Pipes and Pumps — Human Coronary Models as Analogs to Oilfield Optimization

Location: Four Seasons Ballroom 4

Alan B. Lumsden, MD, The Walter W. Fondren III Distinguished Endowed Chair, Medical Director Houston Methodist DeBakey Heart & Vascular Center, Houston Methodist Hospital

Much like the O&G Industry uses high-definition LWD/MWD to assess well drilling and reservoir geometry, interventional cardiologists use intravascular ultrasound and optical coherence tomography to visualize coronary artery (pipe) disease location and severity, and to assess treatment 'completion' and blood 'flow assurance'. Miniature drilling devices and filters may also be used to unclog blocked vessels. This talk will highlight the Pumps & Pipes Program a unique collaborative initiative between energy, medicine, aerospace and academia — Houston's largest industries — to identify and develop innovative crossover ideas and technologies by exploring the other guy's toolkit.

Wednesday Afternoon Technical Program ▼

*Denotes presenter other than first author.

Oral Sessions

Theme 5: Using Geoscience and Petrophysics Data to Improve Completions

Four Seasons Ballroom 2 & 3

Co-Chairs: D. Hume and B. A. Tocher

1:45 Introductory Remarks

1:50 Application of Lithofacies Modelling in Enhancing the Well Productivity; An Example From Eagle Ford Shale: A. K. Sahoo, R. Mukherjee, A. Mukherjee, D. Mukherjee, M. Srivastava (Reliance Industries Ltd)

2:15 Determination of Wellbore Orientation in the Utica Shale of Southeast Ohio: B. Bacon¹, J. Smith¹, A. Vizurraga¹, E. Rodgers¹, J. Dumoit² (1. PDC Energy Inc; 2. Baker Hughes)

2:40 Efficient Completions in Anisotropic Shale Gas Formations: S. Mighani, C. Sondergeld, C. Rai (University of Oklahoma)

3:05 Uncharted Waters: What Can We Learn From Waters Produced From Horizontal Wells in the Permian Basin?: M. M. Laughland, D. E. Nelson, P. Wilson, E. Eastridge (Pioneer Natural Resources USA Inc.)

3:30 Horizontal Lateral Image Analysis Applied to Fracture Stage Optimization in Eastern Barnett Shale, Tarrant and Dallas Counties, Texas: T. N. Olsen¹, M. P. Germinario¹, R. Reinmiller², D. Martinez², R. Parker² (1. Beacon E&P; 2. Fronterra Geosciences)



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Theme 2: Reservoir Types: Shales, Sands and Carbonates

Room 401/402/403/404

Co-Chairs: R. R. Ray and J. Anderson

- 1:45** **Introductory Remarks**
- 1:50** **Upper Cretaceous Niobrara Chalk in Buck Peak Field, Sand Wash Basin, NW Colorado: Depositional Setting, Lithofacies and Nanopore Network:** R. G. Loucks, H. D. Rowe (University of Texas)
- 2:15** **Combining Sonic Velocity and Characterization of Pore Architecture to Develop a Proxy for Reservoir Permeability in Unconventional Carbonates: An Example From the Mid-Continent Mississippian Limestone:** B. Vanden Berg, G. Grammer (Oklahoma State University)
- 2:40** **Statistical Characterization and Geological Correlation of Wells Using Automatic Learning Gaussian Mixture Models:** D. Lubo, V. Jayaram, K. Marfurt (University of Oklahoma)
- 3:05** **Integrated Subsurface and Outcrop Sedimentological, Mineralogical and Geochemical Characterization of Late Cretaceous Mancos Shale, Southwestern Piceance Basin, Southern Douglas Creek Arch, and Southeastern Uinta Basin, Colorado and Utah:** R. Cole, W. Hood (Colorado Mesa University)
- 3:30** **Understanding Geological Heterogeneity to Customize Field Development: An Example From the Vaca Muerta Unconventional Play, Argentina:** G. Sagasti, M. Foster, D. Hryb, A. Ortiz, V. Lazzari (YPF S.A.)

Theme 6: Integrated Approaches and Case Studies

Room 205/207

Co-Chairs: R. Fulks and R. R. Pharis

- 1:45** **Introductory Remarks**
- 1:50** **Team Presentation: An Integrated Approach to Development Optimization in Seven Generations' Kakwa Liquids Rich Montney Play:** R. Schmitz, G. Nevokshonoff*, S. Haysom (Seven Generations Energy Ltd)
- 2:15** **Fractured Reservoir Characterization: Integrating Production and Seismic Data to Optimize Well Placement in Bluebell Field, Uinta Basin, NE Utah:** S. L. Adams¹, J. Schuelke², D. Shannon¹, J. Kuciewicz¹, C. Latkiewicz¹ (1. Devon Energy Corporation; 2. Apache Corporation)
- 2:40** **Probabilistic Resource Costs of Continuous Oil Resources in the Bakken and Three Forks Formations, North Dakota and Montana:** J. H. Schuenemeyer¹, D. Gautier² (1. Southwest Statistical Consulting, LLC; 2. Geological Consultant)
- 3:05** **Vertical Integration Across Key Service Lines Has Enabled Southwestern Energy to Accelerate Resource Development and Shareholder Value:** K. Clay¹, L. J. Laviolette² (1. Southwestern Energy; 2. The Highland Group)
- 3:30** **Evaluation Tool for Wastewater Treatment Technologies for Shale Gas Operations in Ohio:** A. Lane, R. Peterson (Battelle)

Theme 4: Inorganic Geochemistry

Room 405/406/407

Co-Chairs: S. Rhodes and M. Kendrick

- 1:45** **Introductory Remarks**
- 1:50** **Geochemical Evaluation of the Tyler Formation, North Dakota Using Rare Earth Elements (REE) and Kinetics:** I. M. Stevanovic¹, D. M. Patrick² (1. South Dakota School of Mines & Technology; 2. Richard Stockton College)
- 2:15** **Uses and Limitation of Elemental Analysis for the Eagle Ford Mudstone in the Maverick Basin, TX:** J. Madren, J. Schubert (Anadarko Petroleum Corporation)
- 2:40** **Inorganic Geochemistry of the Trenton Limestone-Utica Shale Contact Based on XRF Data:** S. Saboda¹, G. Lash² (1. American Energy Partners; 2. SUNY Fredonia)
- 3:05** **On-Site XRF Analysis of Drill Cuttings in the Williston Basin:** N. Lentz¹, R. Carr¹, L. Yarbrough¹, K. Neset², B. Lucero³, T. Kirst³ (1. University of North Dakota; 2. Neset Consulting Service; 3. Hess Corporation)
- 3:30** **Application of Inorganic Geochemical Studies for Characterization of Bakken Shales, Williston Basin, North Dakota and Montana:** D. Nandy, S. Sonnenberg, J. D. Humphrey (Colorado School of Mines)

Theme 7: Reservoir Modeling

Room 201/203

Co-Chairs: H. Kalaei and M. D. Wilkins

- 1:45** **Introductory Remarks**
- 1:50** **Coupled Geomechanics and Pore Confinement Effects for Modeling Unconventional Shale Reservoirs:** Y. Xiong, P. Winterfeld, Y. Wu (Colorado School of Mines)
- 2:15** **Three-Phase Flow Simulation in Ultra-Low Permeability Organic Shale Via a Multiple Permeability Approach:** M. Alfi, B. Yan, Y. Cao, Y. Wang, J. E. Killough (Texas A&M University)
- 2:40** **Compositional Modeling of the Diffusion Effect on EOR Process in Fractured Shale Oil Reservoirs by Gas Flooding:** T. Wan, J. J. Sheng, M. Watson (Texas Tech University)

- 3:05 Efficient Proxies for Numerical Simulation of Unconventional Resources:** V. Artus, O. Houzé (KAPPA)
- 3:30 The Mechanistic Modeling of Fluid Flow in Shale:** R. Ghanbarnezhad Moghanloo, S. Hosseinipoor (The University of Oklahoma)

Theme 2: Mudrock Reservoir Formation Evaluation

Mile High Ballroom 4 A/B/C

Co-Chairs: S. A. Sonnenberg and R. Cluff

- 1:45 Introductory Remarks**
- 1:50 Correlation of Rebound-Hammer Rock Strength With Core and Sonic-Log Derived Mechanical Rock Properties in Cretaceous Niobrara and Frontier Formation Cores, Piceance Basin, Colorado:** G. A. McClave (Endeavour International)
- 2:15 Core-Based Structural Fabrics in Mudstones of the WCSB: "PSF" and Cleavage:** D. Hume¹, G. Davies^{2*}, A. Fox¹, M. Fockler¹ (1. Canadian Discovery Ltd; 2. GDGC)
- 2:40 The Calcites of Shale Plays: Why Moving Beyond Quantitative Mineralogy Will Improve Project Economics:** B. Hart (Statoil North America, Inc.)
- 3:05 Production Analysis and Forecasting of Vaca Muerta Shale in Argentina: Case History-Based Approach:** L. Maschio, S. Maria, F. Herrero (Pluspetrol)

Theme 2: Understanding Mudrock Plays

Mile High Ballroom 4 D/E/F

Co-Chairs: R. Fritz and J. Spaid

- 1:45 Introductory Remarks**
- 1:50 Lifecycle Optimization of Unconventional Plays — A Bakken Case Study:** M. Roth, M. Roth* (DrillingInfo)
- 2:15 An Interpretation of the Depositional Environment and Facies of the Eagle Ford Shale From Karnes-Maverick County, Texas:** H. A. McGarity¹, J. P. Bhattacharya², R. E. Lamond¹ (1. Murphy Exploration and Production; 2. McMaster University)
- 2:40 Niobrara Analogue Study:** S. K. Huisman (ConocoPhillips)
- 3:05 Accelerating Shale Asset Success Through Applied Reservoir Understanding:** R. G. Dusterhoft¹, J. Dahl², J. Spaid², B. McDaniel¹, B. Grieser¹, B. Johnson¹ (1. Halliburton; 2. Devon Energy)



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Speaker Cross Reference

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	NAME	DAY	TIME	LOCATION	SESSION TITLE
A	Abrams, Michael	Tue.	11:40 AM	Room 201/203	Theme 4: Organic Geochemistry
	Adams, Carl E.	Tue.	2:00 PM	Mile High Ballroom 4 D/E/F	Panel: Water Management and the Link to License to Operate
	Adams, Steven	Wed.	2:15 PM	Room 205/207	Theme 6: Integrated Approaches and Case Studies
	Adedosu, Taofik	Tue.	2:15 PM	Exhibition Hall, Station C	Theme 4: Organic Geochemistry
	Ahmed, Sheraz	Mon.	2:15 PM	Mile High Ballroom 4 A/B/C	Theme 10: Artificial Lift
	Ahmed, Sheraz	Mon.	3:45 PM	Mile High Ballroom 4 A/B/C	Theme 10: Artificial Lift
	Ahn, Chong Hyun	Tue.	5:00 PM	Four Seasons Ballroom 2 & 3	Theme 5: Evaluating Stimulation Effectiveness
	Aimene, Yamina	Wed.	10:50 AM	Four Seasons Ballroom 2 & 3	Theme 5: Optimizing Recovery Using Geomechanics
	Akbarabadi, Morteza	Tue.	3:30 PM	Exhibition Hall, Station A	Theme 7: Flow and Phase Behavior
	Akkutlu, I. Yucel	Mon.	3:05 PM	Exhibition Hall, Station B	Theme 2: Formation Evaluation
	Al Duhailan, Mohammed	Mon.	4:35 PM	Room 401/402/403/404	Theme 2: Multi-Discipline Data Integration I
	Al Duhailan, Mohammed	Wed.	11:15 AM	Mile High Ballroom 4 A/B/C	Theme 11: Emerging Plays II: Unconventional Going Global
	Al Ismail, Maytham	Wed.	8:30 AM	Room 405/406/407	Theme 3: Shale Core Analysis
	Alfi, Masoud	Wed.	2:15 PM	Room 201/203	Theme 7: Reservoir Modeling
	Ali, Tariq	Mon.	3:45 PM	Room 405/406/407	Theme 9: Reserves Forecasting and Estimation
	Almulhim, Abdulraof	Tue.	1:50 PM	Four Seasons Ballroom 2 & 3	Theme 5: Evaluating Stimulation Effectiveness
	Al-Nakhli, Ayman	Wed.	10:45 AM	Exhibition Hall, Station A	Theme 5: Enhanced Oil Recovery Techniques
	Alnoaimi, Khalid	Wed.	9:20 AM	Room 405/406/407	Theme 3: Shale Core Analysis
	Alqahtani, Adel	Tue.	2:15 PM	Exhibition Hall, Station A	Theme 2: Multi-Discipline Data Integration III
	Anovitz, Lawrence	Tue.	1:50 PM	Exhibition Hall, Station B	Theme 3: Imaging Unconventional Reservoir Pore Systems
	Arevalo, Jorge	Wed.	9:20 AM	Room 201/203	Theme 7: Analytics and Workflows
	Artus, Vincent	Wed.	3:05 PM	Room 201/203	Theme 7: Reservoir Modeling
B	Bacon, Brad	Wed.	2:15 PM	Four Seasons Ballroom 2 & 3	Theme 5: Using Geoscience and Petrophysics Data to Improve Completions
	Barati, Reza	Mon.	4:10 PM	Four Seasons Ballroom 2 & 3	Theme 5: Completion Techniques
	Barhaug, Jessica	Tue.	3:45 PM	Four Seasons Ballroom 2 & 3	Theme 5: Evaluating Stimulation Effectiveness
	Belcher, Jack	Tue.	5:00 PM	Room 201/203	Theme 8: Water Management and Social License to Operate
	Bell, Jennifer	Tue.	4:10 PM	Room 201/203	Theme 8: Water Management and Social License to Operate
	Belobraydic, Matthew	Tue.	5:00 PM	Room 405/406/407	Theme 2: Seismic Attributes for Characterizing Rock Properties and Reservoirs I
	Bott Jr., W.F. "Rick"	Mon.	8:30 AM	Mile High Ballroom 1 & 2	Plenary: Using Science and Integrated Technologies to Develop Unconventional Plays
	Bowman, Thomas	Tue.	2:15 PM	Mile High Ballroom 4 A/B/C	Theme 11: Emerging Plays I: Roadway From Ideas to Sweetspots
	Bowman, Thomas	Tue.	3:45 PM	Mile High Ballroom 4 A/B/C	Theme 11: Emerging Plays I: Roadway From Ideas to Sweetspots
	Brown, Kevin	Tue.	11:15 AM	Room 205/207	Theme 1: Regional Case Studies I: It Starts With the Rock
	Browning, John	Wed.	11:15 AM	Mile High Ballroom 4 D/E/F	Panel: Marcellus Shale: "Bottom Up" Integrated Assessment of Future Production and Reserves
	Bui, Binh	Wed.	9:45 AM	Room 401/402/403/404	Theme 2: Seismic Attributes for Characterizing Rock Properties and Reservoirs II
C	Cadena, Andrea	Tue.	8:30 AM	Room 401/402/403/404	Theme 2: Multi-Discipline Data Integration II
	Can, Bunyamin	Mon.	2:40 PM	Room 401/402/403/404	Theme 2: Multi-Discipline Data Integration I
	Carloni, Joseph	Wed.	11:15 AM	Four Seasons Ballroom 2 & 3	Theme 5: Optimizing Recovery Using Geomechanics
	Chamberlain, Alan	Mon.	2:40 PM	Exhibition Hall, Station A	Theme 1: Regional Case Studies II: Integrated Technologies That Deliver Bottom Line Results
	Chamberlain, Alan	Tue.	11:40 AM	Room 205/207	Theme 1: Regional Case Studies I: It Starts With the Rock
	Chen, Xiaoming	Tue.	1:50 PM	Exhibition Hall, Station C	Theme 4: Organic Geochemistry
	Chertov, Maxim	Tue.	9:30 AM	Exhibition Hall, Station A	Theme 2: Drivers for Understanding Reservoir Quality
	Chhatre, Shreerang	Tue.	10:45 AM	Exhibition Hall, Station A	Theme 2: Drivers for Understanding Reservoir Quality
	Chirinos, Jose	Wed.	11:15 AM	Room 401/402/403/404	Theme 2: Optimizing Workflows for Reservoir Types
	Chokshi, Rajan	Mon.	1:50 PM	Mile High Ballroom 4 A/B/C	Theme 10: Artificial Lift
	Clarkson, Christopher R.	Mon.	2:30 PM	Room 405/406/407	Theme 9: Reserves Forecasting and Estimation
	Clay, Keith	Wed.	3:05 PM	Room 205/207	Theme 6: Integrated Approaches and Case Studies
	Cole, Rex	Wed.	3:05 PM	Room 401/402/403/404	Theme 2: Reservoir Types: Shales, Sands and Carbonates

Speaker Cross Reference

	NAME	DAY	TIME	LOCATION	SESSION TITLE
	Collins, Dylan	Wed.	10:50 AM	Room 405/406/407	Theme 3: Shale Core Analysis
	Combs, Nathan	Tue.	8:30 AM	Mile High Ballroom 4 A/B/C	Theme 10: Well Integrity and Production Optimization
	Copeland, Dylan	Wed.	10:50 AM	Room 201/203	Theme 7: Flow and Phase Behavior
	Cornford, Chris	Wed.	10:50 AM	Mile High Ballroom 4 A/B/C	Theme 11: Emerging Plays II: Unconventional Going Global
	Cumella, Stephen	Tue.	9:20 AM	Room 201/203	Theme 4: Organic Geochemistry
	Curtis, John	Tue.	11:15 AM	Room 201/203	Theme 4: Organic Geochemistry
	Curtis, Mark	Mon.	2:40 PM	Room 201/203	Theme 3: Imaging Unconventional Reservoir Pore Systems
D	Daigle, Hugh	Wed.	9:30 AM	Exhibition Hall, Station C	Theme 3: Characterizing Mudrocks With NMR
	Dang, Son	Mon.	2:15 PM	Exhibition Hall, Station B	Theme 2: Formation Evaluation
	Davies, Graham	Wed.	2:15 PM	Mile High Ballroom 4 A/B/C	Theme 2: Mudrock Reservoir Formation Evaluation
	DeDominic, Joseph	Mon.	2:50 PM	Mile High Ballroom 4 D/E/F	Panel: Nimble Independents: “Moving the Needle” With Innovation and Execution Excellence
	Degner, Dennis	Tue.	9:15 AM	Mile High Ballroom 4 D/E/F	Panel: Converting Technology Into Dollars
	Deighton, Ian	Mon.	4:10 PM	Room 401/402/403/404	Theme 2: Multi-Discipline Data Integration I
	Devine, Paul	Mon.	2:15 PM	Room 401/402/403/404	Theme 2: Multi-Discipline Data Integration I
	Devine, Paul	Tue.	8:55 AM	Room 201/203	Theme 4: Organic Geochemistry
	Doe, Thomas	Tue.	4:10 PM	Room 401/402/403/404	Theme 2: Formation Evaluation
	Doughty, Ted	Tue.	10:25 AM	Room 205/207	Theme 1: Regional Case Studies I: It Starts With the Rock
	Drajat, Febi	Wed.	11:10 AM	Exhibition Hall, Station B	Theme 9: Reserves Forecasting and Estimation
	Duenas, Claudia	Tue.	1:50 PM	Room 405/406/407	Theme 2: Seismic Attributes for Characterizing Rock Properties and Reservoirs I
	Dunn, Lindsay	Tue.	3:45 PM	Room 205/207	Theme 1: Regional Case Studies II: Integrated Technologies That Deliver Bottom Line Results
	Dunn-Norman, Shari	Mon.	5:00 PM	Four Seasons Ballroom 2 & 3	Theme 5: Completion Techniques
	Dusterhoft, Ronald	Wed.	3:05 PM	Mile High Ballroom 4 D/E/F	Theme 2: Understanding Mudrock Plays
E	Eaton, David	Mon.	4:10 PM	Room 205/207	Theme 5: Microseismic Fracture Mapping
	Edman, Janell	Tue.	4:10 PM	Mile High Ballroom 4 A/B/C	Theme 11: Emerging Plays I: Roadway From Ideas to Sweetspots
	Ehinola, Olugbenga	Wed.	10:20 AM	Exhibition Hall, Station B	Theme 9: Reserves Forecasting and Estimation
	Eslinger, Eric	Tue.	10:20 AM	Exhibition Hall, Station B	Theme 3: Shale Core Analysis
	Esposito, Ariel	Mon.	1:50 PM	Exhibition Hall, Station C	Theme 8: Water Management and Social License to Operate
	Ezulike, Obinna	Tue.	9:30 AM	Exhibition Hall, Station C	Theme 7: Analytics and Workflows
F	Fai-Yengo, Vanessa	Tue.	9:20 AM	Four Seasons Ballroom 2 & 3	Theme 5: Enhanced Oil Recovery Techniques
	Fantin, Manuel	Wed.	10:25 AM	Mile High Ballroom 4 A/B/C	Theme 11: Emerging Plays II: Unconventional Going Global
	Farghal, Noha	Tue.	2:40 PM	Room 405/406/407	Theme 2: Seismic Attributes for Characterizing Rock Properties and Reservoirs I
	Finley, Elena	Tue.	4:10 PM	Room 405/406/407	Theme 2: Seismic Attributes for Characterizing Rock Properties and Reservoirs I
	Fogden, Andrew	Mon.	1:50 PM	Room 201/203	Theme 3: Imaging Unconventional Reservoir Pore Systems
	Fothergill, Patrick	Tue.	4:10 PM	Room 205/207	Theme 1: Regional Case Studies II: Integrated Technologies That Deliver Bottom Line Results
	Frantz, Joe	Mon.	2:20 PM	Mile High Ballroom 4 D/E/F	Panel: Nimble Independents: “Moving the Needle” With Innovation and Execution Excellence
G	Galvis-Portilla, Henry	Wed.	8:55 AM	Mile High Ballroom 4 A/B/C	Theme 11: Emerging Plays II: Unconventional Going Global
	Gamadi, Talal	Tue.	11:15 AM	Four Seasons Ballroom 2 & 3	Theme 5: Enhanced Oil Recovery Techniques
	Gangiredla, Kaushik	Tue.	2:40 PM	Exhibition Hall, Station A	Theme 2: Multi-Discipline Data Integration III
	Gao, Guohua	Tue.	4:35 PM	Room 405/406/407	Theme 2: Seismic Attributes for Characterizing Rock Properties and Reservoirs I
	Gaucher, Eric	Tue.	2:40 PM	Room 201/203	Theme 8: Water Management and Social License to Operate
	Gautier, Donald	Wed.	9:20 AM	Mile High Ballroom 4 A/B/C	Theme 11: Emerging Plays II: Unconventional Going Global
	Ghanbarnezhad Moghanloo, Rouzbeh	Wed.	3:30 PM	Room 201/203	Theme 7: Reservoir Modeling
	Gilman, James	Tue.	11:40 AM	Room 405/406/407	Special Session: Geophysical Strategies and Techniques to Optimize Unconventional Resource Plays – Seismic Playbook for Non Geophysicists

Speaker Cross Reference

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	NAME	DAY	TIME	LOCATION	SESSION TITLE
H	Gips, Jameson	Wed.	9:55 AM	Exhibition Hall, Station C	Theme 3: Characterizing Mudrocks With NMR
	Goergen, Eric	Mon.	2:15 PM	Room 201/203	Theme 3: Imaging Unconventional Reservoir Pore Systems
	Goldstein, Robert	Mon.	3:55 PM	Exhibition Hall, Station A	Theme 4: Inorganic Geochemistry
	Gratto, Brian	Tue.	3:50 PM	Mile High Ballroom 4 D/E/F	Panel: Emerging International Plays
	Grealy, Michael	Tue.	4:35 PM	Room 205/207	Theme 1: Regional Case Studies II: Integrated Technologies That Deliver Bottom Line Results
	Greff, Keith	Wed.	10:25 AM	Room 205/207	Theme 6: Leveraging Data, Modeling and Analytics
	Gulen, Gurcan	Wed.	10:50 AM	Mile High Ballroom 4 D/E/F	Panel: Marcellus Shale: "Bottom Up" Integrated Assessment of Future Production and Reserves
	Gupta, Neeraj	Tue.	1:50 PM	Room 201/203	Theme 8: Water Management and Social License to Operate
	Gupta, Siddhartha	Wed.	9:45 AM	Room 201/203	Theme 7: Analytics and Workflows
	Hackley, Paul	Tue.	2:40 PM	Mile High Ballroom 4 A/B/C	Theme 11: Emerging Plays I: Roadway From Ideas to Sweetspots
H	Haddad, Mahdi	Wed.	11:35 AM	Exhibition Hall, Station A	Theme 5: Evaluating Stimulation Effectiveness
	Hall, Keith	Wed.	11:35 AM	Exhibition Hall, Station B	Theme 9: Reserves Forecasting and Estimation
	Hammond, Nidra	Tue.	9:55 AM	Exhibition Hall, Station A	Theme 2: Drivers for Understanding Reservoir Quality
	Hardage, Bob	Tue.	8:45 AM	Mile High Ballroom 4 D/E/F	Panel: Converting Technology Into Dollars
	Hart, Bruce	Wed.	2:40 PM	Mile High Ballroom 4 A/B/C	Theme 2: Mudrock Reservoir Formation Evaluation
	Hazlett, Doug	Mon.	1:50 PM	Mile High Ballroom 4 D/E/F	Panel: Nimble Independents: "Moving the Needle" With Innovation and Execution Excellence
	He, Jun	Tue.	9:30 AM	Exhibition Hall, Station B	Theme 3: Shale Core Analysis
	Heidari, Zoya	Tue.	9:55 AM	Exhibition Hall, Station B	Theme 3: Shale Core Analysis
	Heidari, Zoya	Tue.	2:40 PM	Room 401/402/403/404	Theme 2: Formation Evaluation
	Heidari, Zoya	Tue.	3:45 PM	Room 401/402/403/404	Theme 2: Formation Evaluation
H	Herron, Michael	Wed.	10:25 AM	Room 405/406/407	Theme 3: Shale Core Analysis
	Hoffman, Todd	Tue.	8:55 AM	Four Seasons Ballroom 2 & 3	Theme 5: Enhanced Oil Recovery Techniques
	Hoffman, Todd	Tue.	11:40 AM	Four Seasons Ballroom 2 & 3	Theme 5: Enhanced Oil Recovery Techniques
	Holly, Brad	Mon.	8:30 AM	Mile High Ballroom 1 & 2	Plenary: Using Science and Integrated Technologies to Develop Unconventional Plays
	Hooghan, Kultaransingh	Tue.	3:55 PM	Exhibition Hall, Station B	Theme 3: Imaging Unconventional Reservoir Pore Systems
	Hosford Scheirer, Allegra	Tue.	8:30 AM	Room 201/203	Theme 4: Organic Geochemistry
	Hu, Qinhong	Wed.	11:40 AM	Room 405/406/407	Theme 3: Shale Core Analysis
	Huang, Jian	Wed.	8:30 AM	Four Seasons Ballroom 2 & 3	Theme 5: Optimizing Recovery Using Geomechanics
	Huisman, Samuel	Wed.	2:40 PM	Mile High 4 D/E/F	Theme 2: Understanding Mudrock Plays
	Hutchinson, Travis	Tue.	10:25 AM	Mile High 4 A/B/C	Theme 10: Well Integrity and Production Optimization
I	Ikonnikova, Svetlana	Wed.	9:20 AM	Mile High Ballroom 4 D/E/F	Panel: Marcellus Shale: "Bottom Up" Integrated Assessment of Future Production and Reserves
	Inks, Tanya	Wed.	8:55 AM	Room 401/402/403/404	Theme 2: Seismic Attributes for Characterizing Rock Properties and Reservoirs II
J	Jenkins, Creties	Mon.	2:10 PM	Room 405/406/407	Theme 9: Reserves Forecasting and Estimation
	Jester, Stephen	Tue.	2:10 PM	Mile High Ballroom 4 D/E/F	Panel: Water Management and the Link to License to Operate
	Johnson Jr., Ray	Tue.	4:10 PM	Mile High Ballroom 4 D/E/F	Panel: Emerging International Plays
	Johnson, Greg	Tue.	9:20 AM	Room 405/406/407	Special Session: Geophysical Strategies and Techniques to Optimize Unconventional Resource Plays – Seismic Playbook for Non-Geophysicists
	Johnson, Scott	Tue.	4:35 PM	Four Seasons Ballroom 2 & 3	Theme 5: Evaluating Stimulation Effectiveness
	Jones, R.	Wed.	8:55 AM	Room 201/203	Theme 7: Analytics and Workflows
	Jonk, Rene	Tue.	9:20 AM	Room 205/207	Theme 1: Regional Case Studies I: It Starts With the Rock

	NAME	DAY	TIME	LOCATION	SESSION TITLE
K	Katsuki, Daisuke	Tue.	2:15 PM	Room 401/402/403/404	Theme 2: Formation Evaluation
	Key, Scott	Mon.	8:30 AM	Mile High Ballroom 1 & 2	Plenary: Using Science and Integrated Technologies to Develop Unconventional Plays
	Klenner, Robert	Tue.	1:50 PM	Room 401/402/403/404	Theme 2: Formation Evaluation
	Ko, Lucy (Tingwei)	Mon.	4:10 PM	Room 201/203	Theme 3: Imaging Unconventional Reservoir Pore Systems
	Koroteev, Dmitry	Tue.	9:20 AM	Room 401/402/403/404	Theme 2: Multi-Discipline Data Integration II
	Kuzma, Heidi	Wed.	8:30 AM	Room 201/203	Theme 7: Analytics and Workflows
L	Lacazette, Alfred	Tue.	3:45 PM	Room 405/406/407	Theme 2: Seismic Attributes for Characterizing Rock Properties and Reservoirs I
	Landry, Christopher	Tue.	11:10 AM	Exhibition Hall, Station A	Theme 2: Drivers for Understanding Reservoir Quality
	Lane, Ann	Mon.	2:40 PM	Exhibition Hall, Station C	Theme 8: Water Management and Social License to Operate
	Lane, Ann	Wed.	3:30 PM	Room 205/207	Theme 6: Integrated Approaches and Case Studies
	Laughland, Matthew	Wed.	3:05 PM	Four Seasons Ballroom 2 & 3	Theme 5: Using Geoscience and Petrophysics Data to Improve Completions
	Lee, Matthew	Mon.	2:40 PM	Room 205/207	Theme 5: Microseismic Fracture Mapping
	Lee, W. J.	Mon.	1:50 PM	Room 405/406/407	Theme 9: Reserves Forecasting and Estimation
	Legg, Joel	Mon.	2:40 PM	Exhibition Hall, Station B	Theme 2: Formation Evaluation
	Lehmann, Jurgen	Mon.	1:50 PM	Four Seasons Ballroom 2 & 3	Theme 5: Completion Techniques
	Lehmann, Jurgen	Mon.	2:15 PM	Four Seasons Ballroom 2 & 3	Theme 5: Completion Techniques
	Lentz, Nicholas	Wed.	3:05 PM	Room 405/406/407	Theme 4: Inorganic Geochemistry
	Li, Leiming	Wed.	10:20 AM	Exhibition Hall, Station A	Theme 5: Enhanced Oil Recovery Techniques
	Ling, Kegang	Tue.	8:30 AM	Four Seasons Ballroom 2 & 3	Theme 5: Enhanced Oil Recovery Techniques
	Ling, Kegang	Wed.	10:45 AM	Exhibition Hall, Station B	Theme 9: Reserves Forecasting and Estimation
	Loucks, Robert	Tue.	8:55 AM	Room 205/207	Theme 1: Regional Case Studies I: It Starts With the Rock
	Loucks, Robert	Wed.	1:50 PM	Room 401/402/403/404	Theme 2: Reservoir Types: Shales, Sands and Carbonates
	Lubo, David	Wed.	2:40 PM	Room 401/402/403/404	Theme 2: Reservoir Types: Shales, Sands and Carbonates
	Ly, Chi	Tue.	2:40 PM	Exhibition Hall, Station C	Theme 5: Using Geoscience and Petrophysics Data to Improve Completions
M	Ma, Jingsheng	Tue.	3:30 PM	Exhibition Hall, Station B	Theme 3: Imaging Unconventional Reservoir Pore Systems
	Machuca, Michael	Mon.	4:10 PM	Mile High Ballroom 4 A/B/C	Theme 10: Artificial Lift
	Madren, Jonathan	Wed.	2:15 PM	Room 405/406/407	Theme 4: Inorganic Geochemistry
	Malayalam, Atif	Mon.	4:35 PM	Room 405/406/407	Theme 9: Reserves Forecasting and Estimation
	Male, Frank	Wed.	8:55 AM	Mile High Ballroom 4 D/E/F	Panel: Marcellus Shale: "Bottom Up" Integrated Assessment of Future Production and Reserves
	Marcano, Fernando	Wed.	8:30 AM	Mile High Ballroom 4 A/B/C	Theme 11: Emerging Plays II: Unconventional Going Global
	Marcil, Jean-Sebastien	Wed.	9:30 AM	Exhibition Hall, Station A	Theme 1: Regional Case Studies I: It Starts With the Rock
	Mardi, Chrystianto	Tue.	4:35 PM	Room 401/402/403/404	Theme 2: Formation Evaluation
	Marechal, Francois	Tue.	4:35 PM	Mile High Ballroom 4 A/B/C	Theme 11: Emerging Plays I: Roadway From Ideas to Sweetspots
	Maschio, Leonardo	Wed.	3:05 PM	Mile High Ballroom 4 A/B/C	Theme 2: Mudrock Reservoir Formation Evaluation
	Mayer, Rob	Tue.	10:50 AM	Room 401/402/403/404	Theme 2: Multi-Discipline Data Integration II
	McAndrew, James	Mon.	2:40 PM	Four Seasons Ballroom 2 & 3	Theme 5: Completion Techniques
	McClave, Graham	Wed.	1:50 PM	Mile High Ballroom 4 A/B/C	Theme 2: Mudrock Reservoir Formation Evaluation
	McDaniel, Jessica	Tue.	8:55 AM	Mile High Ballroom 4 A/B/C	Theme 10: Well Integrity and Production Optimization
	McDonald, James	Tue.	9:20 AM	Mile High Ballroom 4 A/B/C	Theme 10: Well Integrity and Production Optimization
	McGarity, Heather	Wed.	2:15 PM	Mile High Ballroom 4 D/E/F	Theme 2: Understanding Mudrock Plays
	McKenna, Jonathan	Wed.	11:40 AM	Four Seasons Ballroom 2 & 3	Theme 5: Optimizing Recovery Using Geomechanics
	McLean, Richard	Tue.	1:50 PM	Mile High Ballroom 4 A/B/C	Theme 11: Emerging Plays I: Roadway From Ideas to Sweetspots
	Meehan, D. Nathan	Tue.	8:30 AM	Mile High Ballroom 4 D/E/F	Panel: Converting Technology Into Dollars
	Mehmani, Ayaz	Tue.	5:00 PM	Room 401/402/403/404	Theme 2: Formation Evaluation
	Meisenhelder, Jeff	Tue.	9:30 AM	Mile High Ballroom 4 D/E/F	Panel: Converting Technology Into Dollars
	Melton, Brad	Mon.	5:00 PM	Room 401/402/403/404	Theme 2: Multi-Discipline Data Integration I

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	NAME	DAY	TIME	LOCATION	SESSION TITLE
	Michaels, Julian	Mon.	4:35 PM	Room 201/203	Theme 3: Imaging Unconventional Reservoir Pore Systems
	Micheli, Tyler	Mon.	3:45 PM	Four Seasons Ballroom 2 & 3	Theme 5: Completion Techniques
	Mighani, Saied	Wed.	2:40 PM	Four Seasons Ballroom 2 & 3	Theme 5: Using Geoscience and Petrophysics Data to Improve Completions
	Millard, Mark	Tue.	10:25 AM	Room 201/203	Theme 4: Organic Geochemistry
	Miller, Mark	Wed.	11:15 AM	Room 205/207	Theme 6: Leveraging Data, Modeling and Analytics
	Miller, Pete	Tue.	1:50 PM	Mile High Ballroom 4 D/E/F	Panel: Water Management and the Link to License to Operate
	Ming, Michael	Tue.	10:25 AM	Mile High Ballroom 4 D/E/F	Panel: Converting Technology Into Dollars
	Mirchi, Vahideh	Tue.	10:50 AM	Four Seasons Ballroom 2 & 3	Theme 5: Enhanced Oil Recovery Techniques
N	Nandy, Dipanwita	Wed.	3:30 PM	Room 405/406/407	Theme 4: Inorganic Geochemistry
	Nesheim, Timothy	Tue.	10:50 AM	Room 205/207	Theme 1: Regional Case Studies I: It Starts With the Rock
	Nester, Peter	Tue.	10:20 AM	Exhibition Hall, Station A	Theme 2: Drivers for Understanding Reservoir Quality
	Neuhaus, Carl	Mon.	1:50 PM	Room 205/207	Theme 5: Microseismic Fracture Mapping
	Nevokshonoff, Glen	Wed.	1:50 PM	Room 205/207	Theme 6: Integrated Approaches and Case Studies
O	Olsen, Thomas	Wed.	3:30 PM	Four Seasons Ballroom 2 & 3	Theme 5: Using Geoscience and Petrophysics Data to Improve Completions
	Omotoye, Olusola	Mon.	3:05 PM	Exhibition Hall, Station C	Theme 11: Emerging Plays II: Unconventional Going Global
	Oren, Keith C.	Wed.	10:50 AM	Room 205/207	Theme 6: Leveraging Data, Modeling and Analytics
	Ottoson, Jay	Mon.	8:30 AM	Mile High Ballroom 1 & 2	Plenary: Using Science and Integrated Technologies to Develop Unconventional Plays
P	Pande, Pankaj	Tue.	2:15 PM	Room 205/207	Theme 1: Regional Case Studies II: Integrated Technologies That Deliver Bottom Line Results
	Pandya, Nimish	Tue.	5:00 PM	Room 205/207	Theme 1: Regional Case Studies II: Integrated Technologies That Deliver Bottom Line Results
	Pang, Wei	Mon.	5:00 PM	Room 405/406/407	Theme 9: Reserves Forecasting and Estimation
	Parker, Julie	Wed.	9:20 AM	Room 205/207	Theme 6: Leveraging Data, Modeling and Analytics
	Pathak, Manas	Tue.	8:30 AM	Room 205/207	Theme 1: Regional Case Studies I: It Starts With the Rock
	Pearson, Robin	Tue.	11:15 AM	Room 405/406/407	Special Session: Geophysical Strategies and Techniques to Optimize Unconventional Resource Plays – Seismic Playbook for Non-Geophysicists
	Petrie, Tom	Mon.	8:30 AM	Mile High Ballroom 1 & 2	Plenary: Using Science and Integrated Technologies to Develop Unconventional Plays
	Peza, Eva	Mon.	3:45 PM	Room 401/402/403/404	Theme 2: Multi-Discipline Data Integration I
	Pitcher, Jason	Wed.	11:40 AM	Room 205/207	Theme 6: Leveraging Data, Modeling and Analytics
	Pournik, Maysam	Tue.	2:15 PM	Four Seasons Ballroom 2 & 3	Theme 5: Evaluating Stimulation Effectiveness
	Purcell, Mary Sue	Tue.	10:25 AM	Room 405/406/407	Special Session: Geophysical Strategies and Techniques to Optimize Unconventional Resource Plays – Seismic Playbook for Non-Geophysicists
	Quarles, Andrew	Tue.	4:00 PM	Mile High Ballroom 4 D/E/F	Panel: Emerging International Plays
	Rauch-Davies, Marianne	Wed.	9:20 AM	Room 401/402/403/404	Theme 2: Seismic Attributes for Characterizing Rock Properties and Reservoirs II
	Reynolds, Murray	Mon.	4:35 PM	Four Seasons Ballroom 2 & 3	Theme 5: Completion Techniques
	Risser, Steven	Mon.	2:15 PM	Exhibition Hall, Station C	Theme 8: Water Management and Social License to Operate
R	Ritz, Elizabeth	Wed.	8:55 AM	Room 405/406/407	Theme 3: Shale Core Analysis
	Rivera, Saul	Tue.	2:40 PM	Room 205/207	Theme 1: Regional Case Studies II: Integrated Technologies That Deliver Bottom Line Results
	Rosenau, Nicholas	Tue.	10:50 AM	Room 201/203	Theme 4: Organic Geochemistry
	Roth, Michael	Wed.	1:50 PM	Mile High Ballroom 4 D/E/F	Theme 2: Understanding Mudrock Plays

	NAME	DAY	TIME	LOCATION	SESSION TITLE
	Roth, Murray	Tue.	8:30 AM	Room 405/406/407	Special Session: Geophysical Strategies and Techniques to Optimize Unconventional Resource Plays – Seismic Playbook for Non-Geophysicists
	Ryan Jr., Robert N.	Mon.	8:30 AM	Mile High Ballroom 1 & 2	Plenary: Using Science and Integrated Technologies to Develop Unconventional Plays
S	Saboda, Steve	Wed.	2:40 PM	Room 405/406/407	Theme 4: Inorganic Geochemistry
	Sagasti, Guillermina	Wed.	3:30 PM	Room 401/402/403/404	Theme 2: Reservoir Types: Shales, Sands and Carbonates
	Sahoo, Ajit	Wed.	1:50 PM	Four Seasons Ballroom 2 & 3	Theme 5: Using Geoscience and Petrophysics Data to Improve Completions
	Saidian, Milad	Wed.	10:20 AM	Exhibition Hall, Station C	Theme 3: Characterizing Mudrocks With NMR
	Salter, Richard	Tue.	5:00 PM	Mile High Ballroom 4 A/B/C	Theme 11: Emerging Plays I: Roadway From Ideas to Sweetspots
	Sanaei, Alireza	Tue.	10:20 AM	Exhibition Hall, Station C	Theme 7: Reservoir Modeling
	Saraji, Soheil	Tue.	2:40 PM	Exhibition Hall, Station B	Theme 3: Imaging Unconventional Reservoir Pore Systems
	Scanlan, Bill	Tue.	3:05 PM	Exhibition Hall, Station C	Theme 5: Using Geoscience and Petrophysics Data to Improve Completions
	Schachter, Howard	Mon.	3:30 PM	Exhibition Hall, Station A	Theme 1: Regional Case Studies II: Integrated Technologies That Deliver Bottom Line Results
	Schoepp, Alana	Wed.	8:30 AM	Room 401/402/403/404	Theme 2: Seismic Attributes for Characterizing Rock Properties and Reservoirs II
	Schuenemeyer, John	Wed.	2:40 PM	Room 205/207	Theme 6: Integrated Approaches and Case Studies
	Schwartz, Kenneth	Mon.	1:50 PM	Room 401/402/403/404	Theme 2: Multi-Discipline Data Integration I
	Settgast, Randolph	Wed.	10:25 AM	Four Seasons Ballroom 2 & 3	Theme 5: Optimizing Recovery Using Geomechanics
	Shi, Juntao	Tue.	10:50 AM	Mile High Ballroom 4 A/B/C	Theme 10: Well Integrity and Production Optimization
	Sicking, Charles	Mon.	5:00 PM	Room 205/207	Theme 5: Microseismic Fracture Mapping
	Slatt, Roger	Tue.	10:25 AM	Room 401/402/403/404	Theme 2: Multi-Discipline Data Integration II
	Slatt, Roger	Wed.	11:15 AM	Room 405/406/407	Theme 3: Shale Core Analysis
	Sloan, Trevor	Mon.	2:35 PM	Mile High Ballroom 4 D/E/F	Panel: Nimble Independents: “Moving the Needle” With Innovation and Execution Excellence
	Smith, Natasha	Wed.	11:40 AM	Mile High Ballroom 4 A/B/C	Theme 11: Emerging Plays II: Unconventional Going Global
	Smithard, Mark	Tue.	4:20 PM	Mile High Ballroom 4 D/E/F	Panel: Emerging International Plays
	Smye, Katie	Wed.	8:30 AM	Mile High Ballroom 4 D/E/F	Panel: Marcellus Shale: “Bottom Up” Integrated Assessment of Future Production and Reserves
T	Snyder, Horace	Mon.	1:50 PM	Exhibition Hall, Station A	Theme 1: Regional Case Studies II: Integrated Technologies That Deliver Bottom Line Results
	Solano, Nisael	Tue.	3:05 PM	Exhibition Hall, Station B	Theme 3: Imaging Unconventional Reservoir Pore Systems
	Sonnenberg, Steve	Wed.	9:55 AM	Exhibition Hall, Station A	Theme 1: Regional Case Studies I: It Starts With the Rock
	Sonnenberg, Steve	Wed.	11:35 AM	Exhibition Hall, Station C	Theme 11: Emerging Plays I: Roadway From Ideas to Sweetspots
	Sonnenfeld, Mark	Tue.	9:00 AM	Mile High Ballroom 4 D/E/F	Panel: Converting Technology Into Dollars
	Southcott, Angie	Wed.	11:40 AM	Room 401/402/403/404	Theme 2: Optimizing Workflows for Reservoir Types
	Stephenson, Stan	Tue.	3:45 PM	Room 201/203	Theme 8: Water Management and Social License to Operate
	Stevanovic, Ivana	Wed.	1:50 PM	Room 405/406/407	Theme 4: Inorganic Geochemistry
	Stinco, Luis	Wed.	11:10 AM	Exhibition Hall, Station C	Theme 11: Emerging Plays I: Roadway From Ideas to Sweetspots
	Strauss, Josiah	Tue.	2:15 PM	Room 201/203	Theme 8: Water Management and Social License to Operate
	Su, Kun	Wed.	8:55 AM	Four Seasons Ballroom 2 & 3	Theme 5: Optimizing Recovery Using Geomechanics
	Swift, Alexander	Mon.	5:00 PM	Room 201/203	Theme 3: Imaging Unconventional Reservoir Pore Systems
	Takbiri Borujeni, Ali	Tue.	10:45 AM	Exhibition Hall, Station B	Theme 5: Optimizing Recovery Using Geomechanics
	Tarrahi, Mohammadali	Tue.	8:55 AM	Room 401/402/403/404	Theme 2: Multi-Discipline Data Integration II
	Taylor, Carrie-Anne	Mon.	2:40 PM	Mile High Ballroom 4 A/B/C	Theme 10: Artificial Lift
	Taylor, Tekla	Tue.	4:35 PM	Room 201/203	Theme 8: Water Management and Social License to Operate
	Thomas, Mark	Mon.	1:50 PM	Exhibition Hall, Station B	Theme 2: Formation Evaluation
	Tischer, Michael	Tue.	1:50 PM	Room 205/207	Theme 1: Regional Case Studies II: Integrated Technologies That Deliver Bottom Line Results
	Tokan-Lawal, Adenike	Tue.	1:50 PM	Exhibition Hall, Station A	Theme 2: Multi-Discipline Data Integration III

Speaker Cross Reference

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	NAME	DAY	TIME	LOCATION	SESSION TITLE
U	Urbancic, Ted	Mon.	4:35 PM	Room 205/207	Theme 5: Microseismic Fracture Mapping
V	Van Horn, Michael	Mon.	2:05 PM	Mile High Ballroom 4 D/E/F	Panel: Nimble Independents: "Moving the Needle" With Innovation and Execution Excellence
	Vanden Berg, Beth	Wed.	2:15 PM	Room 401/402/403/404	Theme 2: Reservoir Types: Shales, Sands and Carbonates
	Vega, Bolivia	Mon.	3:45 PM	Room 201/203	Theme 3: Imaging Unconventional Reservoir Pore Systems
	Velasco, Raquel	Mon.	2:15 PM	Room 205/207	Theme 5: Microseismic Fracture Mapping
W	Walls, Joel	Tue.	2:15 PM	Exhibition Hall, Station B	Theme 3: Imaging Unconventional Reservoir Pore Systems
	Wan, Tao	Wed.	2:40 PM	Room 201/203	Theme 7: Reservoir Modeling
	Wang, Chenchen	Tue.	4:20 PM	Exhibition Hall, Station B	Theme 3: Imaging Unconventional Reservoir Pore Systems
	Wang, Dongmei	Tue.	10:25 AM	Four Seasons Ballroom 2 & 3	Theme 5: Enhanced Oil Recovery Techniques
	Wang, Guochang	Wed.	8:30 AM	Room 205/207	Theme 6: Leveraging Data, Modeling and Analytics
	Wang, Hongjun	Mon.	3:55 PM	Exhibition Hall, Station C	Theme 11: Emerging Plays II: Unconventional Going Global
	Warpinski, Norman	Mon.	3:45 PM	Room 205/207	Theme 5: Microseismic Fracture Mapping
	Wheaton, Bill	Tue.	4:10 PM	Four Seasons Ballroom 2 & 3	Theme 5: Evaluating Stimulation Effectiveness
	White, Trey	Tue.	11:15 AM	Room 401/402/403/404	Theme 2: Multi-Discipline Data Integration II
	Wiener, Jack	Tue.	8:55 AM	Room 405/406/407	Special Session: Geophysical Strategies and Techniques to Optimize Unconventional Resource Plays – Seismic Playbook for Non-Geophysicists
	Wiener, Jack	Tue.	11:40 PM	Room 401/402/403/404	Theme 2: Multi-Discipline Data Integration II
	Williams, Mark	Tue.	10:50 AM	Room 405/406/407	Special Session: Geophysical Strategies and Techniques to Optimize Unconventional Resource Plays – Seismic Playbook for Non-Geophysicists
	Williams, Ryan	Wed.	10:50 AM	Room 401/402/403/404	Theme 2: Optimizing Workflows for Reservoir Types
	Willis, Maxwell	Wed.	9:20 AM	Four Seasons Ballroom 2 & 3	Theme 5: Optimizing Recovery Using Geomechanics
	Wu, Kan	Tue.	2:40 PM	Four Seasons Ballroom 2 & 3	Theme 5: Evaluating Stimulation Effectiveness
	Wu, Keliu	Tue.	3:55 PM	Exhibition Hall, Station A	Theme 7: Flow and Phase Behavior
X	Xiong, Yi	Wed.	1:50 PM	Room 201/203	Theme 7: Reservoir Modeling
	Xu, Wenye	Tue.	3:05 PM	Exhibition Hall, Station A	Theme 7: Flow and Phase Behavior
Y	Yang, Tao	Wed.	11:15 AM	Room 201/203	Theme 7: Flow and Phase Behavior
	Yu, Gang	Mon.	3:55 PM	Exhibition Hall, Station B	Theme 2: Formation Evaluation
	Yu, Gang	Tue.	2:15 PM	Room 405/406/407	Theme 2: Seismic Attributes for Characterizing Rock Properties and Reservoirs I
	Yu, Wei	Mon.	4:10 PM	Room 405/406/407	Theme 9: Reserves Forecasting and Estimation
	Yu, Wei	Tue.	9:55 AM	Exhibition Hall, Station C	Theme 7: Reservoir Modeling
	Yu, Wei	Wed.	8:55 AM	Room 205/207	Theme 6: Leveraging Data, Modeling and Analytics
Z	Zhang, Boyang	Wed.	10:45 AM	Exhibition Hall, Station C	Theme 3: Characterizing Mudrocks With NMR
	Zhang, Jie	Mon.	4:45 PM	Exhibition Hall, Station C	Theme 11: Emerging Plays II: Unconventional Going Global
	Zhang, Lei	Mon.	4:20 PM	Exhibition Hall, Station C	Theme 11: Emerging Plays II: Unconventional Going Global
	Zhang, Yannan	Wed.	11:40 AM	Room 201/203	Theme 7: Flow and Phase Behavior
	Zhao, Pei-Qiang	Mon.	3:30 PM	Exhibition Hall, Station B	Theme 2: Formation Evaluation
	Zhou, Qiumei	Mon.	2:15 PM	Exhibition Hall, Station A	Theme 1: Regional Case Studies II: Integrated Technologies That Deliver Bottom Line Results
	Zou, Mengfei	Wed.	9:30 AM	Exhibition Hall, Station B	Theme 2: Reservoir Types: Shales, Sands and Carbonates

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Schedule: (Subject to change)

Monday

- 10:10 a.m.–10:50 a.m. Advanced Core Analysis in Unconventional Reservoirs – Joe Ramoin, Core Lab
- 3:05 p.m.–3:45 p.m. Core Lab Regional Study Approach: Benefits and Evaluation – Williston Basin
- 4:00 p.m.– 5:00 p.m. Depositional Implications of Museum-Quality Terrestrial Ferns in Deep Water Wolfcamp Formation (Midland Basin, West Texas) – Erik Kvale, Devon Energy

Tuesday

- 9:45 a.m.–10:25 a.m. Advancements in Computed Tomography – AJ Kumar, Core Lab
- 3:05 p.m.–3:45 p.m. Core Lab Regional Study Approach: Benefits and Evaluation – Powder River Basin
- 4:00 p.m.–5:00 p.m. Facies and Depositional Environment of the Buda to Eagle Ford Transition (Carol Well, Lavaca County) – David Hull, Devon Energy



Pre-Conference Short Course 1 Petrophysics of Unconventional Reservoirs

American Association of Petroleum Geologists (AAPG)

Date: Saturday
Time: 8:00 a.m.–5:00 p.m.
Location: Colorado Convention Center, Room 103/105
Instructor: Michael Holmes (Digital Formation, Denver, Colorado)
Fee: \$895
Includes: Digital course notes and refreshments
Content: .75 CEU
Limit: 50 people

Pre-Conference Short Course 2 Forecasting Well Production Data in Unconventional Resources

Society of Petroleum Engineers (SPE)

Date: Saturday – Sunday
Time: 8:00 a.m.–5:00 p.m.
Location: Colorado Convention Center, Room 111/113
Instructor: Dilhan Ilk (DeGolyer and MacNaughton, Dallas, Texas)
Fee: \$1,400 member (SPE, AAPG, SEG), \$1,800 nonmember
Includes: Printed and electronic course materials, light breakfast, lunch and afternoon refreshments
Limit: 30 people

Pre-Conference Short Course 3 Introductory Geochemistry for Condensate-Rich Shales and Tight Oil

American Association of Petroleum Geologists (AAPG)

Date: Sunday
Time: 8:00 a.m.–5:00 p.m.
Location: Colorado Convention Center, Room 103/105
Instructor: Christopher D. Laughrey (Weatherford Labs, Golden, Colorado)
Fee: \$895
Includes: Digital course notes and refreshments
Content: .75 CEU
Limit: 50 people

Pre-Conference Short Course 4 Microseismic Imaging of Hydraulic Fracturing: Improved Engineering of Unconventional Shale Reservoirs

Society of Exploration Geophysicists (SEG)

Date: Sunday
Time: 8:00 a.m.–5:00 p.m.
Location: Colorado Convention Center, Room 301/302
Instructor: Shawn Maxwell (IMaGE, Calgary, Alberta, Canada)
Fee: \$695
Includes: Course materials, continental breakfast and coffee breaks
Content: .7 CEU
Limit: 50 people

Pre-Conference Short Course 5 Hydraulic Fracturing Fundamentals for Unconventional Reservoirs

Society of Petroleum Engineers (SPE)

Date: Sunday
Time: 8:00 a.m.–5:00 p.m.
Location: Colorado Convention Center, Room 108/110/112
Instructor: Steve Hennings (Consultant, Source Rock Engineering, Littleton, Colorado)
Fee: \$750 member (SPE/AAPG/SEG), \$950 nonmember
Includes: Instructor materials, light breakfast, lunch and refreshments
Limit: 25 people

Pre-Conference Field Trip Unconventional Reservoirs and Stratigraphy of the Southern Denver Basin: Graneros, Greenhorn, Carlile and Niobrara Formations

Sponsored by Petroleum Technology Transfer Council (PTTC)

Date: Saturday – Sunday
Times: 8:00 a.m.–4:00 p.m.
Leaders: Jeffrey A. May (Geologic Consultant, Littleton, Colorado) and Tofer Lewis (Enerplus, Denver, Colorado)
Fee: \$525/per person
Includes: Guidebook, transportation, lunch, refreshments and one overnight accommodation in Pueblo, Colorado
Location: Departs and returns to the Colorado Convention Center
Limit: 27 people

Post-Conference Field Trip Unconventional Petroleum Systems: A Geologic Transect Across Colorado, USA

Sponsored by Petroleum Technology Transfer Council (PTTC)

Date: Thursday – Saturday
Times: 8:00 a.m.–5:00 p.m.
Leaders: Stephen A. Sonnenberg, Jeremy Boak, Larry Meckel (Colorado School of Mines, Golden, Colorado)
Fee: \$750 per person
Includes: Guidebook, transportation, lodging, breakfasts and lunch
Location: Departs and returns at the Table Mountain Inn, Golden Colorado. This trip will start in the Denver Basin and end in the Piceance Basin of Colorado. The geology of northern Colorado will be discussed along the field trip route.
Limit: 40 people

Post-Conference Interactive Forum Multidisciplinary Assessment in Unconventional Resource Development

Presented by SPE/SEG Cooperation Committee

Date: Thursday
Time: 8:00 a.m.–3:30 p.m.
Location: Colorado Convention Center, Room 301/302
Fee: URTEC Registrants \$175; Non-registered Professionals \$350; Students \$75
Includes: Lunch and refreshments
Limit: Open



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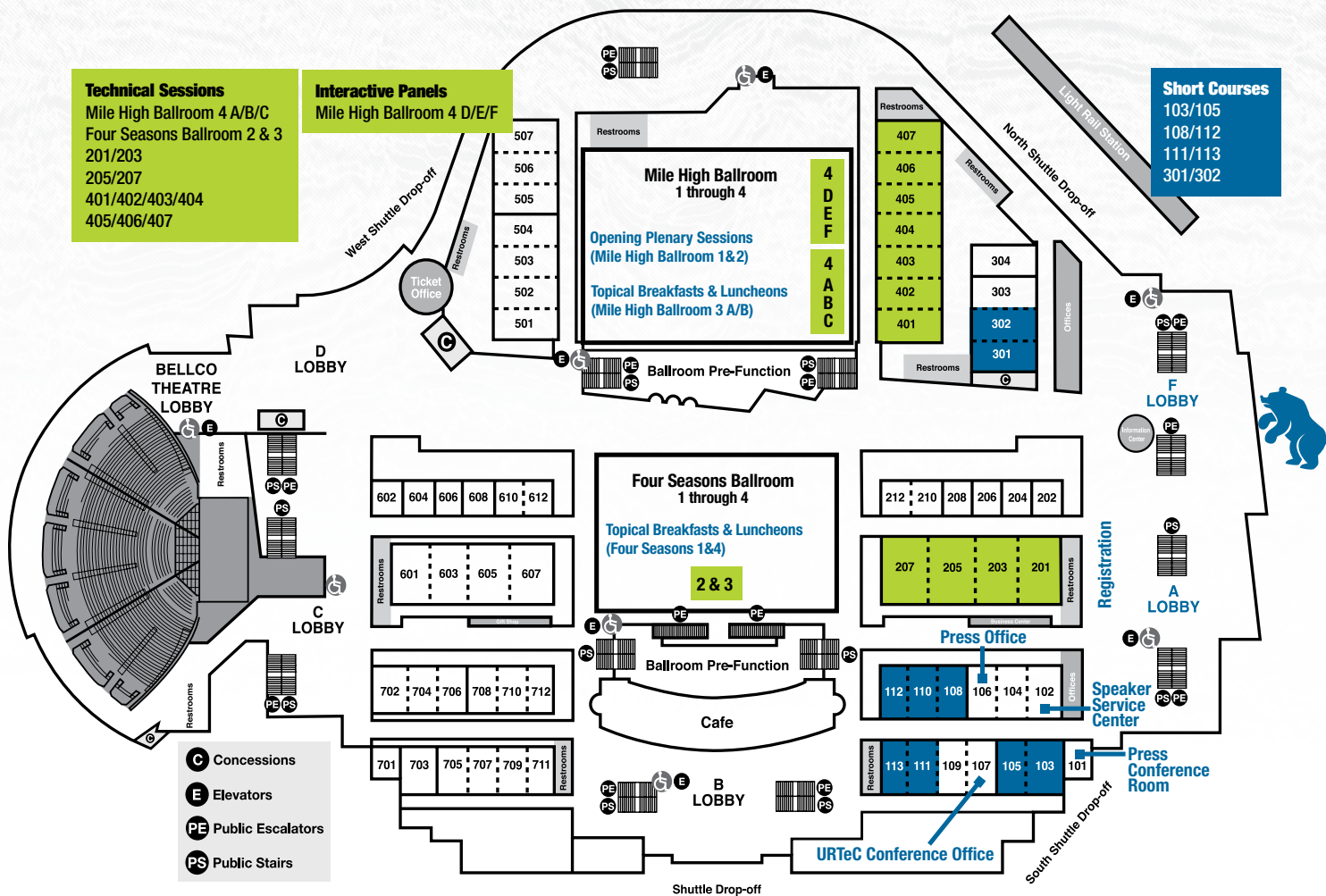
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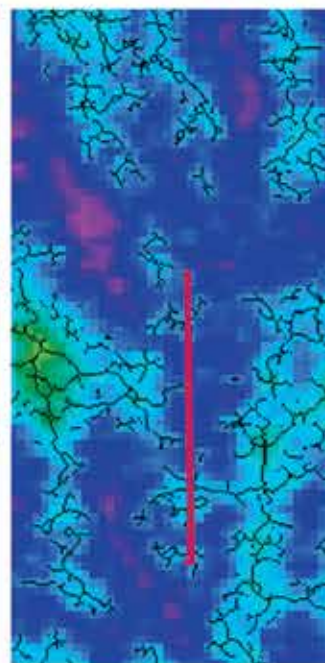
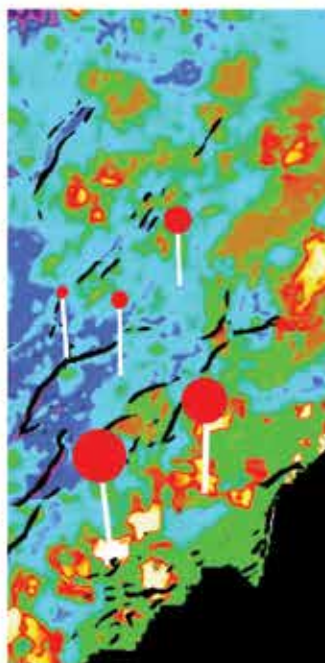
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Exhibition Hours

Location: Exhibition Halls A & F

Monday 10:00 a.m.–7:00 p.m.

Tuesday 9:00 a.m.–6:00 p.m.

Wednesday 9:00 a.m.–1:00 p.m.

Breakfast Bites With Exhibitors

Stretch your legs during the Opening Plenary session and come grab a quick snack as we open the Exhibition Hall Monday morning.

Monday: 10:00 a.m.–10:50 a.m.

Refreshment Breaks

Grab a cup of coffee or tea with the exhibitors during the breaks in the morning and afternoons.

Monday 3:05 p.m.–3:45 p.m.

Tuesday 9:45 a.m.–10:25 a.m. and 3:05 p.m.–3:45 p.m.

Wednesday 9:45 a.m.–10:25 a.m.

Opening Reception

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

Monday: 5:00 p.m.–7:00 p.m.

Networking Reception

Network with colleagues and exhibitors with a drink and light snacks.

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 a live ePaper presentation or visit the On-Demand station conveniently located inside the Exhibition Hall.

Monday 1:50 p.m.–5:10 p.m.

Tuesday 9:30 a.m.–5:10 p.m.

Wednesday 9:30 a.m.–12:00 p.m.

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URTeC 2015

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George P. Mitchell — A Difference Maker

Location: Exhibition Hall, booth 1308

This 30-minute video depicts the importance George P. Mitchell, the “pioneer of shale”, had on the oil and gas industry and his philanthropic support of many causes, programs and institutions. The founder of Mitchell Energy and Development Corporation, Mitchell pioneered different techniques for hydraulic fracturing of the Barnett Shale, eventually finding the right technique to economically extract natural gas from the formation. He also developed the Woodlands, a timbered, urban environment north of Houston as well as playing a major role in the revitalization of Galveston. His foundation has distributed or pledged over \$400 million in grants with the vast majority of the funds distributed relating to science and environmental sustainability.

Exhibitor Listing (as of 7/17/14)

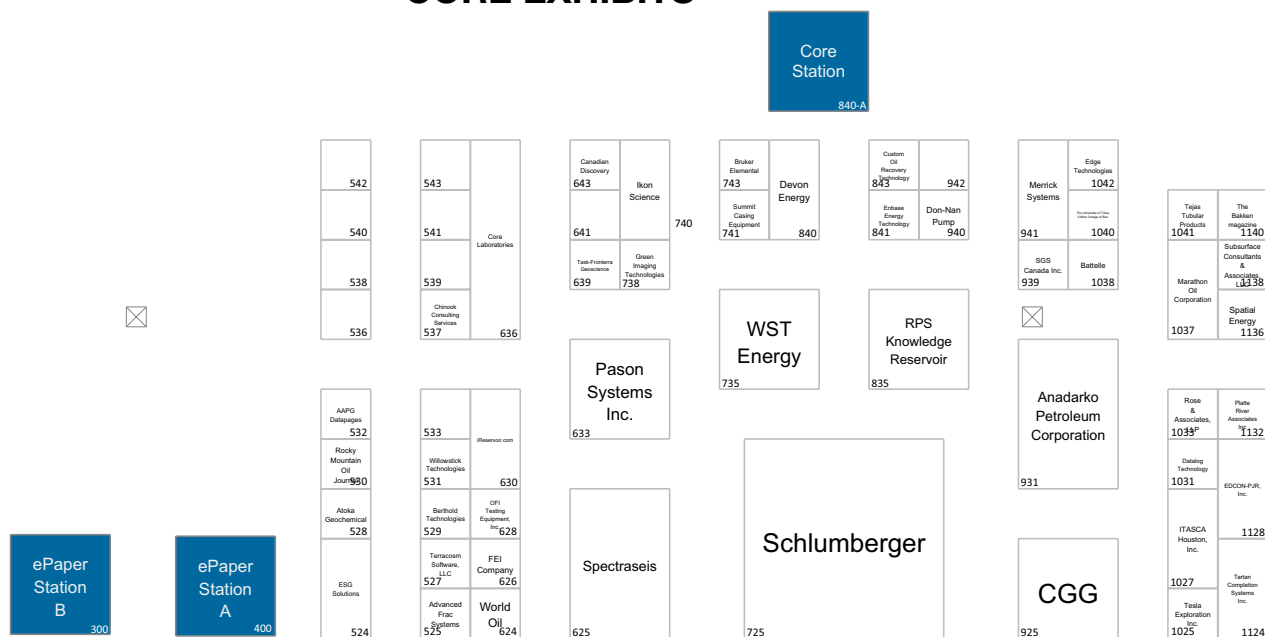
AAPG Datapages.....	532	Berthold Technologies USA, LLC.....	529	Chinook Consulting Services.....	537
Absolute Control.....	501	BHL Boresight.....	1911	Columbine Logging.....	612
Advanced Frac Systems.....	525	BOS Solutions, Inc.....	2015	Computer Modelling Group.....	1709
Allied-Horizontal Wireline Services.....	509	Bowler Petrophysics, Inc.....	911	ConocoPhillips.....	1431
ALS Oil & Gas.....	1233	Brown Technical Book Shop.....	1239	Core Laboratories.....	636
Altira Group LLC.....	700	Bruker.....	743	Custom Oil Recovery Technology.....	843
American Association of Petroleum Geologists.....	1839	BUCHI Corporation.....	800	Datalog Technology.....	1031
American Institute of Professional Geologists.....	905	C & J Energy Services.....	1731	Dawson Geophysical Company.....	1814
Amplified Geochemical Imaging.....	1331	Calfrac Well Services.....	1639	Denver Geophysical Society.....	705
Anadarko Petroleum Corporation.....	931	Canadian Discovery, LTD.....	643	Devon Energy.....	840
Atoka Geochemical.....	528	Carl Zeiss X-ray Microscopy.....	1441	DHI Services Inc.....	508
Baker Hughes.....	1303	CESI Chemical, a Flotek company.....	1710	Digital Formation.....	1825
Bakken Oil Business Journal.....	1801	CGG.....	925	Dino-Lite Scopes (BigC).....	605
Barree & Associates, LLC.....	1705	Chem Rock Technologies.....	1738	Dolan Integration Group, LLC.....	812
Battelle.....	1038	Chemostrat.....	1511	Don-Nan Pump.....	940
Beaver Creek Archaeology.....	504	Chesapeake Energy.....	1241	Drillinginfo.....	1208
Bell Geospace Inc.....	1719	Chevron Lubricants.....	1903	drillMap.....	1539

Exhibitor Listing (as of 7/17/14)

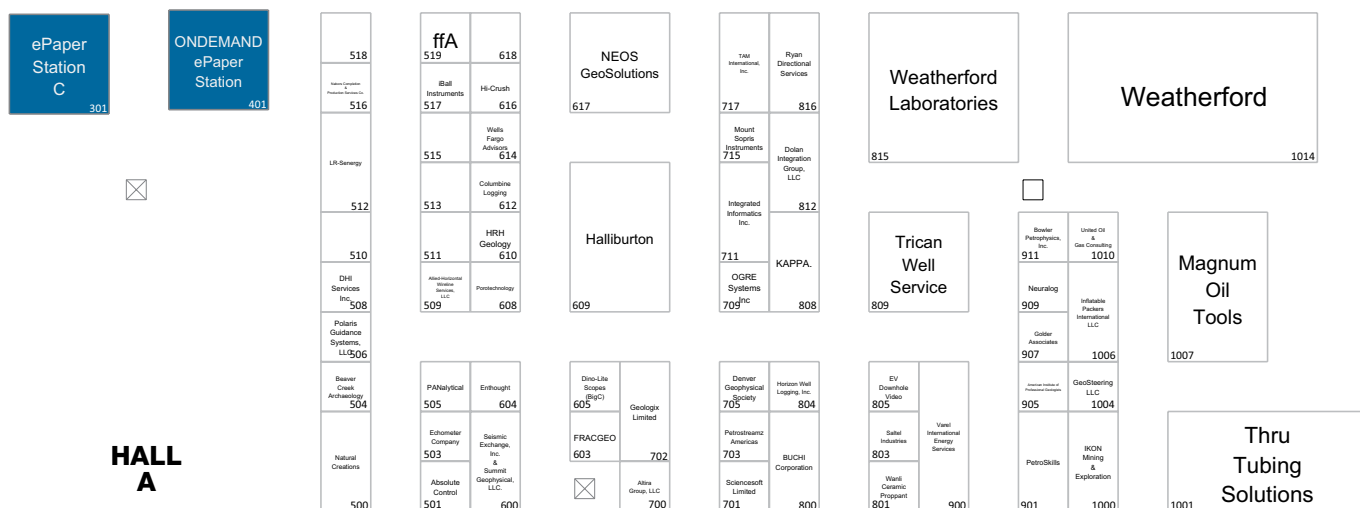
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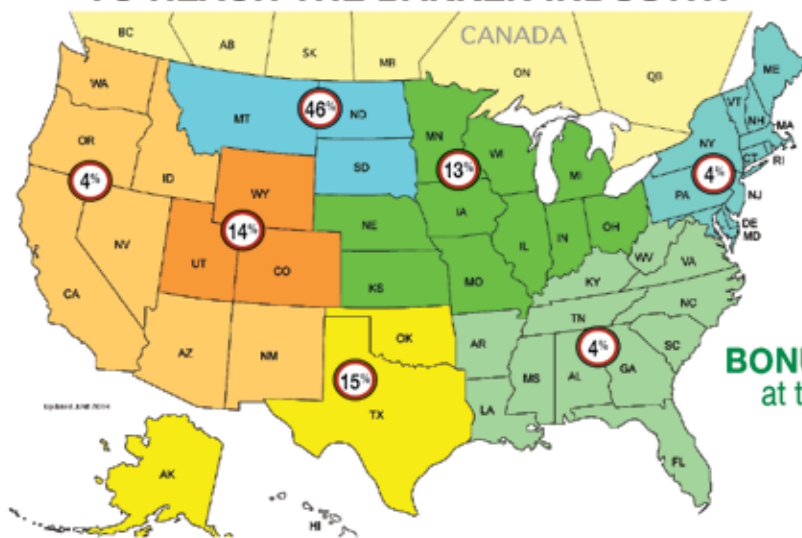
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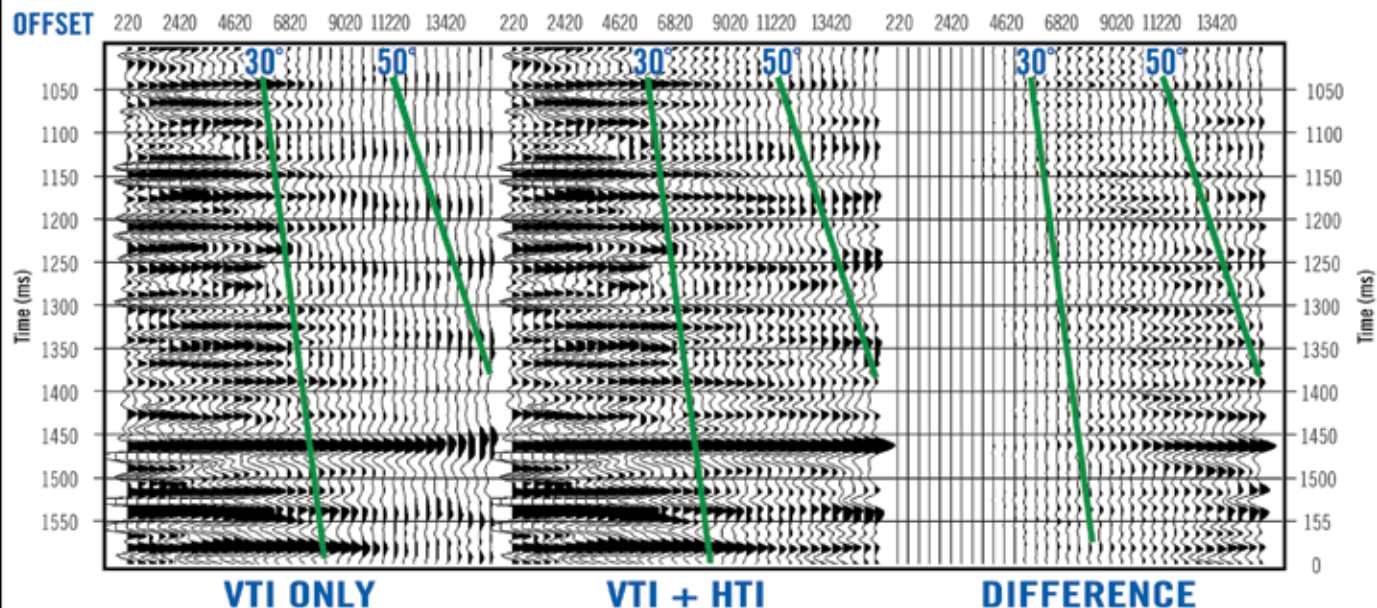
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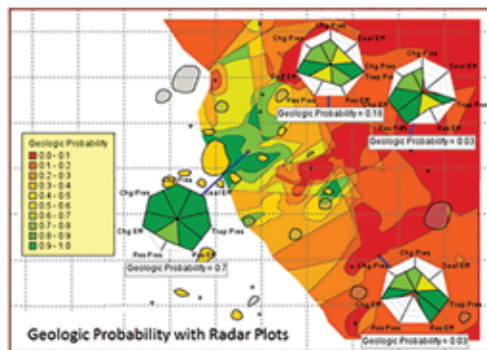
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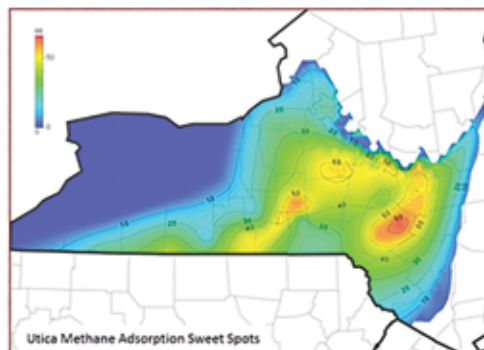
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Press Office

Location: Room 106

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 be left here.

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.

Press Conference Room

Location: Room 101

URTeC's Press Conference Room will be the site of relevant news, industry announcements or developments as they are made available, including new product or service announcements. These communications events are designed to create awareness of products and technologies present at the event. Press Conference Room facilities have been pre-booked. Interested exhibitors may inquire about availability with staff in Press Office 106.

Registration

Located in Lobby A & F on street level just North of the Blue Bear.

Saturday 12:00 p.m.–5:00 p.m.

Sunday 7:30 a.m.–5:30 p.m.

Monday 7:00 a.m.–6:00 p.m.

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Location: Room 102

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Sunday 1:00 p.m.–5:00 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.

Speakers should check in at the Speaker Service Center after picking up their badge at registration.

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Airport Information

Denver International Airport (DIA)

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Public Transportation

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URTeC Conference Office

Telephone: +1 303 228 8375

Location: Room 107

Saturday 8:00 a.m.–5:30 p.m.

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Sunday 8:00 a.m.–7:00 p.m.

Monday 7:00 a.m.–6:00 p.m.

Tuesday 7:00 a.m.–6:00 p.m.

Wednesday 7:00 a.m.–5:00 p.m.

Security and Emergencies

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

- URTeC Attendee Services Supervisor: Located on the Street Level, Lobby A & F, Registration Area
- 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.

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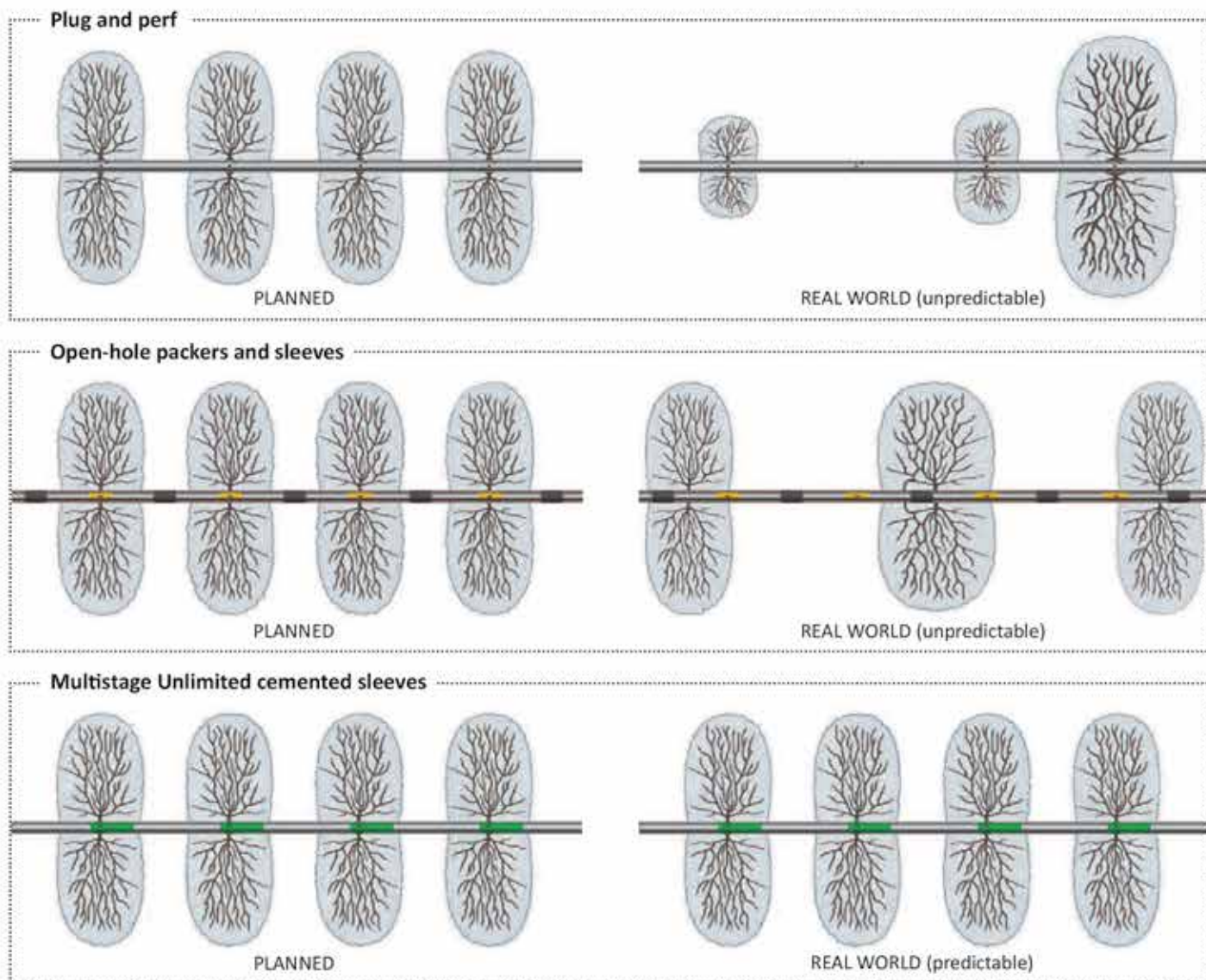


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