



# SPE Workshop: Well Completions for Unconventional Resource Development Optimization and Parent-Child Interaction

11–13 April 2023 | The Scottsdale Resort at McCormick Ranch | Scottsdale, Arizona, USA

## Program Committee

### Co-Chairpersons

Lucas Bazan, Bazan Consulting

Kyle Haustveit, Devon Energy

## Pogram Committee

Tom Blasingame, Texas A&M University

Dave Cannon, Diamondback Energy

Craig Cipolla, Hess

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Joe Frantz, ResFrac

Trevor Ingle, Devon

Josh Jackson, Chesapeake

Matt Jones, OXY

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Karen Olson, Well Data Labs

Felipe Silva, EQT

Amit Singh, Chevron

Andrew Tucker, Apache

Leen Weijers, Liberty Oilfield Services

Buddy Woodroof, ProTechnics

Rob Zinselmeyer, Arc Resources

As unconventional developments mature, understanding the interdependencies of the completions and stimulation programs, managing parent-child well interactions and resource development optimization have become more challenging. It is critical to determine the best economic risk balance of resource development and over-capitalization. This Applied Technology Workshop continues the highly successful workshop series bringing the best and latest experiences for unconventional well completions and stimulation practices, optimization and diagnostics highlighting resource development and parent-child interactions. Session formats frame the general engineering considerations and technical drivers for resource development and the regional sessions highlight experiences and practices in the most active development areas. This ATW has been designed to share data, experiences, best practices, and ideas from across North America and international unconventional resources.

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**Who We Are** SPE is the largest individual member organization serving managers, engineers, scientists and other professionals worldwide in the upstream segment of the oil and gas industry.



Society of Petroleum Engineers

## Tuesday, 11 April 2023

0700–0800 Maricopa Foyer

**Registration and Continental Breakfast**

0800–0810 Maricopa

**Chairperson's Welcome and Safety Moment**

0810–0830 Maricopa

**Objectives and Overview of Workshop**

0830–1000 Maricopa

**Session 1: General Industry Trends**

**Chairs:** Lucas Bazan, Bazan Consulting, Inc.  
Tom Blasingame, Texas A&M University  
Kyle Haustveit, Devon

- **Frac Industry Trends in \$/BO and \$/MF**  
Leen Weijers, Liberty Services
- **Developing Technologies for the Future**  
Terry Palisch, Carbo Ceramics
- **TBD**  
Kyle Haustveit, Devon

1000–1030 Maricopa Foyer

**Coffee Break**

1030–1200 Maricopa

**Session 2: Diagnostics**

**Chairs:** Craig Cipolla, Hess  
Felipe Silva, EQT

- **How Advanced Measurements are Changing the Way We Model Hydraulic Fractures and Well Productivity**  
Mark McClure, ResFrac
- **Well Interference in Unconventional Reservoirs: Introducing Devon Quantification of Interference DQI**  
Mouin Almasoodi, Devon
- **Diagnostics for Determining Treatment Distribution Among Multiple Perforation Clusters**  
Dave Cramer, ConocoPhillips

1200–1330 Sunset Plaza

**Lunch**

1330–1500 Maricopa

**Session 3: Rockies & Mid-Con**

**Chairs:** Craig Cipolla, Hess  
Bruce Darlington, Ovintiv

- **Underground Laboratories in the Bakken: Lessons Learned**  
Mike McKimmy, Hess
- **Real-Time Completions Optimization next to Parent wells: The Final Frontier or a Journey in Progress?**  
Orlando Teran, Ovintiv
- **Investigation of Meramec and Woodford Co-Development Fracture Geometry and Sequencing using Multiple Diagnostics**  
Kevin Pelton, Devon

1500–1530 Maricopa Foyer

**Coffee Break**

1530–1700 Maricopa

**Session 4: Facilitated Audience Participation Part I**

**Chairs:** Lucas Bazan, Bazan Consulting, Inc.  
Leen Weijers, Liberty Oilfield Services  
Buddy Woodroof, ProTechnics

1700–1830 Pueblo

**Technology Showcase and Reception**

## Wednesday, 12 April 2023

0700–0800 Maricopa Foyer

**Continental Breakfast**

0800–0930 Maricopa

**Session 5: Canada**

**Chairs:** Patrick Miller, Petronas Canada  
Rob Zinselmeyer, Arc Resources

- **Death by a Million Grid Cells—How to Radically Accelerate Well Spacing and Completion Design Decision Making in Unconventionals with Simple Tools**  
Patrick Miller, Petronas Canada
- **Montney Fracture Driven Interactions (FDI's)—Determining Fracture Geometry/Cluster Efficiency in a Multi-Bench Play**  
Kirby Nicholson, Pressure Diagnostics Ltd.
- **A Shot in the Dark: Predicting Parent-Child Production Impacts in the Duvernay**  
Jaron Van Dijken, Crescent Point Energy

0930–1000 Maricopa Foyer

**Coffee Break**

1000–1130 Maricopa

**Session 6: Frac Protection Methods, Results, Decision Process**

**Session Chairs:** Brendan Elliott, Devon Energy  
Amit Singh, Chevron

- **Barnett New Well and Refrac Co-Development to Optimize Value**  
Ken Day, BKV Corp
- **Measuring and Mitigating Fracture Driven Interactions (FDIs) in the Vaca Muerta**  
Sahil Malhotra, Chevron
- **How Far Are We From Real-Time Frac Design Change? Learnings from Parent-Child Wells Frac Data Analysis**  
Junjing Zhang, ConocoPhillips

1130–1300 Sunset Plaza

**Lunch**



# Technical Agenda

As of 20 March 2023

All technical sessions will take place in Maricopa

1300-1430 Maricopa

## Session 7: Treatment Design and Execution

**Session Chairs:** Josh Jackson, Chesapeake  
Matt Jones, OXY

- **Frac Uniformity and Stage Isolation Evaluation Using a Combination of Ultrasonic, DAS, and DTS Data**  
Trent Wien, OXY
- **TBD**  
Craig Cipolla, Hess
- **Simul-Frac: The Fiber Frontier (A Compendium of Case Studies from Bakken, DJ, and Permian)**  
Price Stark, Halliburton

1430-1500 Maricopa Foyer

## Coffee Break

1500-1630 Maricopa

## Session 8: Eagle Ford & Austin Chalk

**Session Chairs:** Trevor Ingle, Devon  
Karen Olson, Well Data Labs

- **Leveraging Pressure Interference to Optimize Development Strategy in the Austin Chalk**  
Ryan Stage, SM Energy
- **Understanding Fracture and Drainage Characteristics for Various Completion Designs in the Eagleford**  
Chris Ketter, Devon
- **Maximizing Resource Value through Utilization of Advanced Trajectory Wellbores**  
Larcyn Carter & Riley Schultz, Chesapeake Energy

1630-1800 Paradise Park Lawn

## Networking Reception

## Thursday, 13 April 2023

0700-0800 Maricopa Foyer

## Continental Breakfast

0800-0930 Maricopa

## Session 9: Facilitated Audience Participation Part II

**Session Chairs:** Lucas Bazan, Bazan Consulting, Inc.  
Leen Weijers, Liberty Oilfield Services  
Buddy Woodroof, ProTechnics

0930-1000 Maricopa Foyer

## Coffee Break

1000-1130 Maricopa

## Session 10: Appalachia & Haynesville

**Session Chairs:** Joe Frantz, ResFrac  
Felipe Silva, EQT

- **Integrated Diagnostics Focusing on Understanding Multi-Bench Infill and Co-Development in the NE PA Marcellus Shale**  
Ashley Mercer, Chesapeake Energy
- **Applying Depletion Mapping of Infill Wells to Fracture Model Calibration**  
Kevin Wutherich, Drill2Frac
- **Quantifying the Impacts of Depletion, Far-Field Diverter, and Perf Orientation in the Haynesville**  
Gabriel Pedigo, Seismos

1130-1300 Sunset Plaza

## Lunch

1300-1430 Maricopa

## Session 11: Permian Delaware

**Session Chairs:** Dave Cramer, ConocoPhillips  
Brendan Elliott, Devon  
Matt Jones, OXY

- **New Mexico Diagnostics: Synthesizing Multiple Indirect Reservoir Measurements**  
Timothy Hoang, OXY
- **To Reduce or Extend? That is the Question: A Tale of Stage Length Optimization in the Delaware Basin**  
Karan Dhuldhoya, ConocoPhillips
- **Automated Depletion Characterization for Delaware Basin**  
Trevor Ingle, Devon

1430-1500 Maricopa Foyer

## Coffee Break

1500-1630 Maricopa

## Session 12: Permian Midland

**Session Chairs:** Dave Cannon, Diamondback  
Dave Cramer, ConocoPhillips  
Andrew Tucker, Apache

- **Analysis of Geometry Drivers in Co-Developed Assets the Midland Basin**  
Hannah Chittenden, Diamondback
- **Evaluation of Completion Designs and Fracture Heterogeneity Via an Instrumented Slant Monitor Well**  
Tim Benish, ExxonMobil
- **Correlating Surface and Downhole Perforation Entry Hole Measurements Leads to Development of Improved Perforating Systems**  
Cody Douglas, ConocoPhillips

1630-1700 Maricopa

## Chairperson's Closing and Workshop Wrap Up

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Our events and functions are accessible to all attendees with wheelchairs. If you require special arrangements, please contact our staff at the registration desk.

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SPE recognizes the legitimate serving of alcoholic beverages in the process of conducting business and social activities. We also recognize that the use and consumption of alcohol carries with it the requirement for all attendees to consume those beverages responsibly.

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In remaining consistent with workshop objectives and SPE guidelines, commercialism in presentations will not be permitted. Company logos should be used only to indicate the affiliation of the presenter(s).

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Attendees will receive 2.0 CEUs. One CEU equals 8 contact hours of participation. CEUs will be awarded through SPE Professional Development for participation and completion of an SPE workshop. A permanent record of a participant's involvement and awarding of CEUs will be maintained by SPE.

**Documentation**

Following the workshop, a URL containing released copies of the workshop presentations will be available to all attendees.

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As a courtesy to the speakers and your fellow registrants, please turn off all electronic devices during presentations.

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**Workshop Format**

Workshops maximize the exchange of ideas among attendees and presenters through brief technical presentations followed by extended Q&A periods. Focused topics attract an informed audience eager to discuss issues critical to advancing both technology and best practices.

Many of the presentations are in the form of case studies, highlighting engineering achievements and lessons learned. In order to stimulate frank discussion, no proceedings are published and members of the press are not invited to attend.

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The logo for the SPE Workshop Survey, featuring the letters 'SPE' in a blue circle above the words 'Workshop Survey' in a blue, sans-serif font.

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Please take a moment and let us know your thoughts on this event!



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