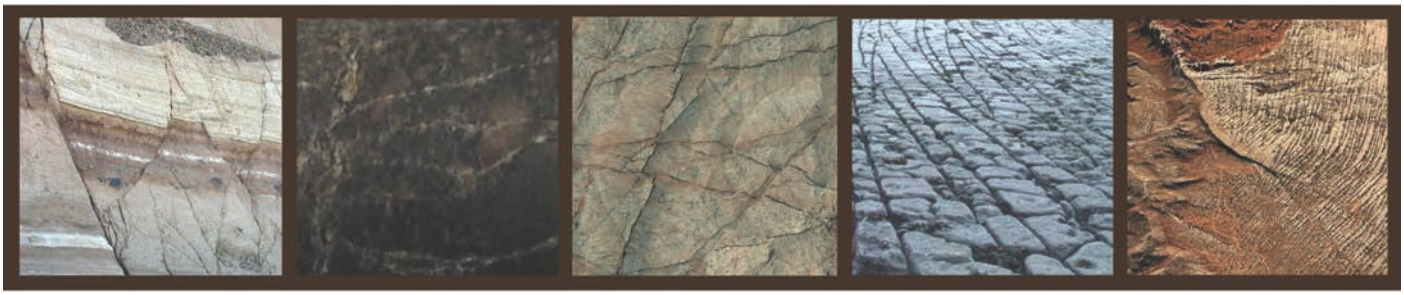
Applied Geoscience Conference

November 6-7, 2019

SOUTHWESTERN ENERGY • 10000 Energy Drive • Spring, TX 77389



Applied Geomechanics: Through the Life Cycle of the Field

Day 1 AM Session 1	Accessing Targets Faster with Safer Wellbores
Lunch Keynote	**Robert W. Zimmerman**, *Imperial College, London*
Day 1 PM Session 2	Optimizing Completion Footprint and Stimulation Designs
Day 2 AM Session 3	Post-stimulation Diagnostics and Monitoring
Lunch Keynote	**Tony Settari**, *CGG Services (Canada) Inc.*
Day 2 PM Session 4	Extending the Life of the Field: Production, Refracturing, and EOR

University Poster Session represented by: Georgia Tech, Oklahoma State University, Purdue University, The University of Oklahoma, The University of Texas, University of Calgary, University of Houston, Utah State University

This Fourth Applied Geoscience Geomechanics Conference (since 2013) by an industry expert committee provides the highest value through invited subject matter experts represented by:

Baker Hughes, a GE company; CGG; CARBO Ceramics; Excellence Logging; FracGeo; Halliburton; Optasense; Saudi Aramco; Schlumberger; Weatherford

Cost structure

General registration: July 1 – November 5, 2019

HGS member $400.00
Non-member $455.00
HGS student member $75.00

Note: Unemployed HGS members contact the office for discount

For more information please visit www.hgs.org or contact the HGS office: office@hgs.org

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Oral Presentations – Wednesday, November 6, 2019

7:00	**Registration and Coffee**	
8:00 - 8:10	**Welcome and Opening Remarks:** Jon Blickwede, *HGS President*; Umesh Prasad, *Baker Hughes, a GE company;* SWN representative	
	Session 1: Accessing Target Faster with Safer Wellbores **Chairs:** Lauren Cassel, *Completion Imaging Analysis*; Mark Herkommer, *Excellence Logging*	
8:10 - 8:45	Advanced Seismic Inversion for Geomechanics Applications in Unconventional Reservoirs	**Colin Sayers**, *Schlumberger*
8:45 - 9:20	Lost-in-hole Diagnostics and Mitigation	**Agus Tjengdrawira**, Julie Kowan, and Namsu Park, *Baker Hughes, a GE company*
9:20 - 9:40	**Coffee, Posters, Exhibits**	
9:40 - 10:15	Laboratory Modelling of Salt Deformation and its Correlation with Drilling Mechanics of Record Hybrid Drill Bit Runs in the GOM	**Ashabikash Roy Chowdhury**, Umesh Prasad and Ryckman Callais, *Baker Hughes, a GE company*
10:15 - 10:50	Novel Pore Pressure Prediction Technique for Unconventional Reservoirs	**Robert Raney**, David P. Yale and Adriana Perez, *Geomechanics Consulting*
10:55 - 11:55	**Open Floor Discussion & Posters**	
11:55 - 1:00	**Lunch, Posters, Exhibits**	
12:15 - 1:00	**Chair:** Deepak Gokaraju, *Metarock Laboratories* **Keynote:** Failure of Anisotropic Rocks such as Shales, and Implications for Borehole Stability	**Robert W. Zimmerman** and Widad Al-Wardy, *Dept. of Earth Science and Engineering, Imperial College of Science, Technology and Medicine, London, UK.*
	Session 2: Optimizing Completion Footprint and Stimulation Designs **Chairs:** Ashwani Zutshi, *Schlumberger*; Mark Morford, *FracGeo*	
1:05 - 1:40	Digital Rock Simulation: A Novel Approach for Accurate Characterization of Perforation Tunnel Damage	**Rajani Satti**, *Baker Hughes, a GE company*
1:40 - 2:15	Digital Twins for Drilling Fluid and How Digitalization Could Help to Reduce the Cost and Increase the Wellbore Stability	Mehrdad G Shirangi, **Reza Ettehadi**, and Charles A Thompson Jr, *Baker Hughes, a GE company*
2:15 - 2:35	**Coffee, Posters, Exhibits**	
2:35 - 3:10	Stress Sensitivity of Sonic Wave Velocity and the Reliability of Sonic Tools in Unconventional Tight Gas Sand Reservoirs	Dr. Christophe Germay and **Tanguy Lhomme**, *EPSLOG*
3:10 - 3:45	Characterizing Off-Normal Occurrence and Leakage Risk at Underground Natural Gas Storage Facilities	**Richard A. Schultz**, *Orion Geomechanics*
3:45 - 4:45	**Open Floor Discussion & Posters**	

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Oral Presentations – Thursday, November 7, 2019

7:00	**Registration and Coffee**	
8:00 - 8:10	**Welcome and Opening Remarks:** Umesh Prasad, *Baker Hughes, a GE company*	
	Session 3: Post-stimulation Diagnostics and Monitoring **Chairs:** David Katz, *Baker Hughes, a GE company*; Jing Zhang, *The University of Oklahoma PhD Student*	
8:10 - 8:45	Geomechanics of Unconventional Hydraulic Fracturing: Clusters, Complexity, "Frac-Hits" and All That	**Ahmad Ghassemi**, *The University of Oklahoma*
8:45 - 9:20	Estimation of Propped Fracture Geometry Using Electromagnetic Geophysics	**Terry Palisch** and **Souvik Mukherjee**, *CARBO Ceramics*
9:20 - 9:40	**Coffee, Posters, Exhibits**	
9:40 - 10:15	Near and Far Field DAS Diagnostics for Unconventional Reservoir Monitoring	**Andres Chavarria**, *Optasense*
10:15 - 10:50	Early Warning Systems – Using PTA Analysis of DFITs to Understand Complex Hydraulic Fractures and Optimize Treatment Designs	**Bob Bachman**, *CGG*
10:55 - 11:55	**Open Floor Discussion & Posters**	
11:55 - 1:00	**Lunch, Posters, Exhibits**	
12:15 - 1:00	**Chair:** Deepak Gokaraju, *MetaRock Laboratories* **Keynote:** Integrating Geology and Geophysics into Engineering Workflows to Enhance Unconventional Production **Poster Winner Awards**	**Tony Settari**, *CGG Services (Canada) Inc.*
	Session 4: Extending the Life of the Field: Production, Refracturing, and EOR **Chairs:** Barbara Hill, *Schlumberger*; Chi Vinh Ly, *CGG*	
1:05 - 1:40	Role of Multiple Fracturing of Vertical And Horizontal Wells in Maximizing Production and Extending Life of the Field	**Mohamed Soliman**, *University of Houston*
1:40 - 2:15	Limits on the Accuracy of Pore Pressure Estimates by Analysis of Random Measurement Error and Means for Improvement	**Mark Herkommer**, *Excellence Logging*
2:15 - 2:35	**Coffee, Posters, Exhibits**	
2:35 - 3:10	Extending the Life of Enhanced Permeability Zones Created During Hydraulic Fracturing	Ron Dusterhoft, **Zeno Philips** and U. Inyang, *Halliburton*
3:10 - 3:45	Predrill Pore Pressure Estimation in Wildcat Prospectivity	**Saad T. Saleh**, *GEOMECH, USA*
3:45 - 4:45	**Open Floor Discussion & Posters**	
	Closing Comments	

Poster Session

Invited Presentations from Graduate Students • Open during Coffee and Lunch Breaks

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Posters – November 6-7, 2019

Poster Session Chair: Mike Effler

University	Student Name	Poster Topic
Georgia Institute of Technology	**Ming Lui**	Poroelastic Indentation – Feasibility of a New Testing Method for Tight Rocks
Oklahoma State University	**Jingyao Meng**	Geomechanical Characteristics of the Prospective CO_2 Sinks and Seals, Eastern Gulf of Mexico
Purdue University	**Wenging Wang**	Heterogeneous Stress State in the Crystalline Crust Beneath the Western Canadian Sedimentary Basin: Observations from Borehole Image Logs to 2.4 km
The University of Oklahoma	**Zhi Ye**	The Role of Pre-Existing Fractures in Shale Reservoir Stimulation
The University of Oklahoma	**Juan Acosta**	Study of Creep Behavior in Barnett Shale Using Nano-Indentation
The University of Texas	**Mehdi Teymouri**	Coupled Hydro-Mechanical Analyses and Modeling for Reliable Characterization of Fracture Propagation in Anisotropic and Spatially Heterogeneous Formations
The University of Texas	**Shivam Agrawal**	Effect of Rock Heterogeneity at Different Length Scales on Fracture Geometry
University of Calgary	**Marco Venieri**	Predicting Reservoir Potential of Unconventional Shale Plays from Wireline Logs: A Correlation Between Compositional and Geomechanical Properties of the Devonian Duvernay Formation, Alberta, Canada
University of Houston	**Abdullah Bilal**	Predicting Static Data, Using Dynamic Properties and Quantitative Sample Characterization
University of Houston	**Suresh Dande**	Elastic Properties of Propped and Unpropped Eagle Ford Shale and 3D-printed Fractured Rock Models
University of Houston	**Rongrong Lin**	A Damped Dynamic Finite Difference Approach for Modeling Static Stress-Strain Fields
University of Houston	**Sabyasachi Prakash**	Analysis of Unconsolidated Sands' Yielding Behavior Under Unloading Conditions

Participating Schools

Georgia Institute of Technology • Oklahoma State University

Purdue University • The University of Oklahoma

The University of Texas • University of Calgary

University of Houston

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Recognition in Conference Announcements and Website (logo with hyperlink)	✓	✓	✓	✓

91% Rated the talks as applicable to their every day work

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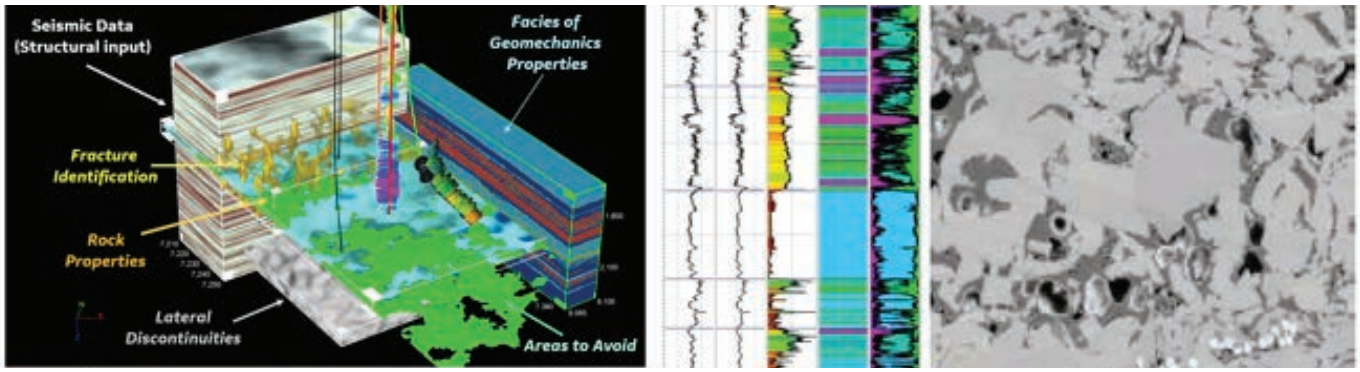

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