

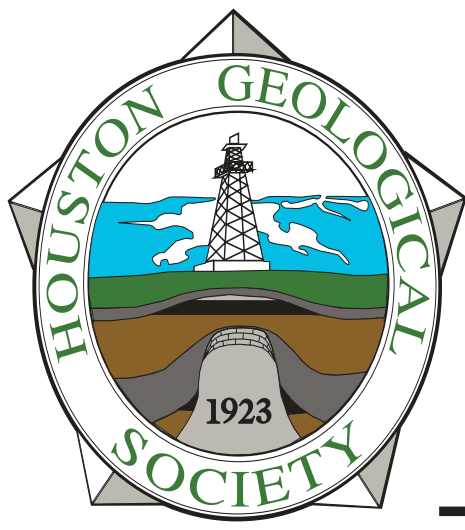


# Applied Geoscience Conference

March 6-8, 2018

## Oral Presentations – Tuesday, March 6, 2018

7:00	<b>Registration and Coffee</b>	
8:00 - 8:10	<b>Welcome and Opening Remarks:</b> Frank Walles, <i>Baker Hughes, a GE company</i> ; John Adamick, <i>TGS, HGS President 2017-2018</i>	
<b>Session 1: Diagenetic Components of Mudrocks and Their Impact on Production</b> <b>Chairs:</b> Tina Calvin, Wayne Camp and Ian McGlynn		
8:10 - 8:45	Quartz Cementation in Mudrocks: How Common Is It?	<b>Kitty Milliken</b> , <i>Bureau of Economic Geology, The University of Texas at Austin</i>
8:45 - 9:20	Organic Diagenesis (Artificial Thermal Maturation Studies) – Pyrolysis with SEM Observations	<b>Bobby Hooghan</b> , <i>Weatherford Laboratories</i> ; <b>Lori Hathon</b> , <i>University of Houston</i>
9:20 - 9:55	Fluid Inclusion Technology Applications for Mudrock Petroleum Source Rocks	<b>Don Hall</b> , <i>Fluid Inclusion Technologies, a Schlumberger Company</i>
9:55 - 10:20	<b>Coffee, Posters, Exhibits</b>	
<b>Session 2: Nanoscale Intra-Kerogen Porosity and Hydrocarbon Phase Producibility/Wettability</b> <b>Chairs:</b> Avrami Grader, James Macquaker and Steve Geetan		
10:20 - 10:55	Reservoir Quality of the Middle Bakken Controlled by a 300 Ma History of Carbonate Cementation and Dolomitization	<b>Andy Aplin</b> , <i>Durham University</i> ; M. Brodie, J.W. Valley, I.J. Orland, B.S. Hart
10:55 - 11:30	Reservoir Characterization and Modeling to Determine the Mechanisms Controlling Enhanced Oil Recovery from Tight Oil Formations – A Bakken Case Study	<b>James Sorensen</b> , <i>EERC</i> ; Steven Hawthorne, Larry Pektot, Beth Kurz, Lu Jin, Jose Torres
11:30 - 12:30	<b>Lunch, Posters, Exhibits</b>	
<b>Keynote Chair:</b> Arlin Howles		
12:00 - 12:30	<b>Keynote:</b> Water Resource Issues within Unconventional Resource Development in the Permian Basin	<b>Dr. Bridgett Scanlon</b> <i>The University of Texas</i>
<b>Session 3: Predicting Petrophysical Flow Properties Using Digital Rock Physics</b> <b>Chairs:</b> Timothy Diggs and Matt Bratovich		
12:30 - 1:10	A Digital Rock Investigation of the Role of Knudsen Number for Flow in Unconventional Reservoirs	<b>Juan Bautista</b> , <i>EXA Corp.</i>
1:10 - 1:45	Multi-Phase Fluid Imbibition, Distribution and Wettability in Shale through Synchrotron Based Dynamic Micro-CT Imaging	<b>Sheng Peng</b> , <i>Bureau of Economic Geology, The University of Texas at Austin</i>
1:45 - 2:20	A Multiscale Study of Fluid Flow in Mudrock Systems	<b>Farzam Javadpour</b> , <i>Bureau of Economic Geology, The University of Texas at Austin</i>
2:20 - 2:45	<b>Coffee, Posters, Exhibits</b>	
<b>Session 4: Geophysical Methods for Producibility, Fracability and GeoHazards</b> <b>Chairs:</b> Lisa Neelen and Shon Bourgeois		
2:45 - 3:20	PP-PS Joint Inversion Feasibility Study – Oklahoma Unconventional Resource Play Example	<b>Pete Christianson</b> , <b>Magdy Ghattas</b> , <b>Robert Hu</b> , <i>Marathon</i>
3:20 - 3:55	Using Airborne Full Tensor Gradiometry to Aid in Recognition and Risk Assessment of Dissolution Karst within Permian Evaporites, Delaware Basin, Texas	<b>Alan Morgan</b> , <i>Bell Geospace</i>
<b>Closing Comments and Invitation to Posters and Core Sessions</b>		
4:15 - 8:00	<b>Social Hour</b>	



# Applied Geoscience Conference

March 6-8, 2018

## Oral Presentations – Wednesday, March 7, 2018

7:00	<b>Registration and Coffee</b>	
8:00 - 8:10	<b>Welcome and Opening Remarks:</b> Frank Walles, <i>Baker Hughes, a GE company</i>	
	<b>Session 5: Analytics Applications for Improved Hydrocarbon Recovery</b> <b>Chairs:</b> Andrew Silver and Brian Velardo	
8:10 - 8:45	Multivariate Modelling of Oil and Gas Production Using Geology and Completion Factors	<b>Dr. Richard Batsell</b> , <i>Rice University</i>
8:45 - 9:20	The Abuse of R <sup>2</sup> : How Correlation Statistics are Misunderstood and Misused	<b>Andrew Silver</b> , <i>Creeta Resources, LLC</i>
9:20 - 9:55	Log Response Groups: Letting the Data Speak For Itself	<b>J. L. Gevirtz</b> and <b>A. P. Ovalle</b> , <i>Halliburton Global Consulting</i>
9:55 - 10:20	<b>Coffee, Posters, Exhibits</b>	
	<b>Session 6: Hybrid/Tight/Complex Opportunities</b> <b>Chairs:</b> Obie Djordjevic and Barbara Hill	
10:20 - 10:55	The Vaca Muerta Play (Neuquen Basin, Argentina). A Case Where Bentonites Help to Assess Early Development Areas, Predict TOC and Quantify Lateral Facies Variations	<b>Daniel Minisini</b> , <i>Shell</i>
10:55 - 11:30	Depositional Interpretation and Sequence Stratigraphic Control on Reservoir Quality and Distribution in the Meramec STACK Play: Anadarko Basin, Oklahoma	<b>Buddy Price</b> , <b>A. Pollack</b> , <b>A. Lamb</b> , <i>Devon Energy</i>
11:30 - 12:30	<b>Lunch, Posters, Exhibits</b>	
	<b>Session 7: Technology Applications for Stimulated Rock Volume Versus Drained Rock Volume</b> <b>Chairs:</b> Luis Baez and Eric Michaels	
1:00 - 1:35	Accelerating Completions Concept Select in Unconventional Plays Using Diagnostics and Frac Modelling	<b>Ali Azad</b> , <b>Kiran Somanchi</b> , <b>Jim Brewer</b> and <b>Dan Yang</b> <i>Shell</i>
1:35 - 2:10	Optimizing Field Development Strategy Using Time-Lapse Geochemistry and Production Allocation in Eagle Ford	<b>Jason Jweda</b> , <i>ConocoPhillips</i>
2:10 - 2:45	Sampling a Stimulated Rock Volume	<b>Kevin Raterman</b> , <i>ConocoPhillips</i>
2:45 - 3:15	<b>Coffee, Posters, Exhibits</b>	
	<b>Session 8: Operator Cases of Integrated Applied Geoscience for Fun and Profit</b> <b>Chairs:</b> John Breyer and Raj Malpani	
3:15 - 4:15	Permian Basin Wolfcamp: Field Development, Critical Data Acquisition, Integration and Workflow	<b>Phil Lindner</b> , <b>John Ndungu</b> , <i>Pioneer</i> ; <b>Kyle Scott</b> , <b>Omkar Jaripatke</b> , <b>Hector Bello</b> , <b>Weichun Chu</b> , <i>Pioneer Resources</i>
	<b>Closing Comments and Invitation to Posters</b>	

### Poster Session

*Invited Presentations from Graduate Students*

Open during Coffee and Lunch Breaks



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## Posters – March 6-8, 2018

Poster Session Chair: Mike Effler

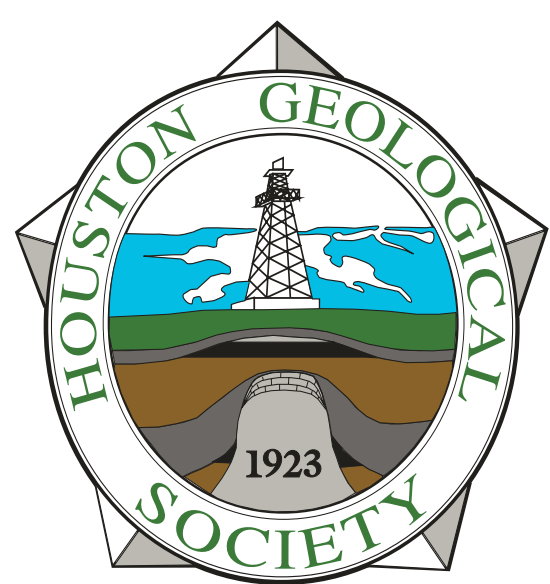
University	Student Name	Poster Topic
Oklahoma State University	<b>Michele Abshire</b>	The Uranium/TOC Conundrum of Black Shales: What Gamma-Ray Logs Might Miss
Oklahoma State University	<b>Yulun Wang</b>	Natural Fractures and Their Relationship to Facies, Sequence Stratigraphy, and Rebound Hardness, the “Mississippian Limestone” Play, North-Central Oklahoma, U.S.A
Texas A&M University	<b>Telemachos Manos</b>	Thermal Maturity Modeling of Organic-Rich Mudrocks in the Delaware Basin using Raman Spectroscopy of Carbonaceous Material
Texas A&M University	<b>Roy Conte</b>	Integrating Core, Wireline Log and Chemostratigraphic Data with Biostratigraphic Data and High Resolution U-Pb Zircon Geochronology to Determine Timing Constraints on the Eagle Ford Group Depositional Processes and Stratigraphy
Texas A&M University	<b>Sergey Parsegov</b>	Micromechanics of Mudstones. Cost Effective Measurements
The University of Oklahoma	<b>Pritesh Bhoumick</b>	Mapping Hydraulic Fractures Propagation using Polarized Shear Wave
The University of Texas of the Permian Basin	<b>Fatimah Adelekan</b>	Integrated study of the Wolfcamp Debris Flow, Delaware Basin, Texas to Determine the Depositional Environment, Sequence Stratigraphy and Petrophysical Analysis: Case Study – Mendel Field
The University of Texas of the Permian Basin	<b>Joanna Walker</b>	A New Approach to Fracture Identification within the Wolfcamp Formation of the Delaware Basin By Means of Dispersion from Refracted Shear
University of Alberta	<b>Noga Vaisblat</b>	Rock Fabric, Rock Composition, and Reservoir Quality in the Montney Formation, Western Canada
University of Calgary	<b>Emma Percy</b>	Calcareous Organic-Rich Mudstone Depositional Processes on a Low-Gradient Ramp, Example from the Turonian Second White Specks Formation, West-Central Alberta, Canada
University of Houston	<b>Zohreh Souri</b>	Identification of Sweet Spots for Hydraulic Fracture in Avalon Shale, Permian Basin, Using Lithofacies Classification
University of Kansas	<b>Jeff Jennings</b>	Identifying at Risk Areas for Injection-Induced Seismicity Through Subsurface Analysis of the State of Kansas

## Participating Schools

Oklahoma State University • Texas A&M University • The University of Oklahoma  
 The University of Texas • University of Alberta • University of Calgary  
 University of Houston • University of Kansas

Open During Coffee and Lunch Breaks

The Houston Geological Society Continuing Education Committee Presents



# Applied Methods of Mudstone Core Description and Interpretation

**A One-Day Short Course**

**by Dr. Ursula Hammes and Dr. Kirk Campion**

**Thursday, March 8, 2018 • Bureau of Economic Geology Houston Research Center  
11611 West Little York, Houston, TX 77041**

The Houston Geological Society is pleased to announce a new continuing education seminar titled *Applied Methods of Mudstone Core Description and Interpretation* held in conjunction with the Applied Geoscience “Mudrocks” Conference on March 8, 2018 at the Bureau of Economic Geology Houston Research Center (HRC) core facility, in Houston, Texas.

The one-day seminar is intended for geologists of all experience levels interested in improving their skills in identifying and interpreting physical sedimentary structures, and recognizing vertical stratigraphic relationships observable from conventional full-diameter slabbed cores. Participants will learn how to identify key sedimentary features in a stratigraphic context necessary to describe mudstone facies at a practical scale to tie to well logs for improved reservoir characterization and mapping.

The full-day course will consist of introductory lectures followed by hands-on core examination guided by the instructors, Dr. Ursula Hammes and Dr. Kirk Campion. A wide variety of productive shale and tight oil and gas reservoirs will be examined from the following formations: Bakken, Woodford, Mississippian Lime, Haynesville, Eagle Ford and Marcellus.

Class size is limited, so register early.



**Date: Thursday, March 8, 2018**

**Please make your reservations on-line [www.hgs.org](http://www.hgs.org)**

For more information about this event, contact HGS Office 713-463-9476 • [office@hgs.org](mailto:office@hgs.org)



**DR. URSULA HAMMES** is president and founder of Hammes Energy & Consultants, LLC located in Austin, Texas. Her current research interest is focused on shale oil & gas systems from basin- to nano-scale applying her background in carbonate and clastic sequence stratigraphy, depositional systems analysis, and reservoir diagenesis. Dr. Hammes received her Master’s degree from University of Erlangen, Germany and her PhD from the University of Colorado at Boulder. Ursula has held past positions at Anadarko Petroleum, The Woodlands; the Texas Bureau of Economic Geology, Austin; and the University of Potsdam, Germany. Dr. Hammes serves as an associate editor for the AAPG Bulletin, AAPG Energy Minerals Division Shale Gas and Liquids Committee Chair, and has served as president of the Gulf Coast Section SEPM. She has published over 200 papers, including co-editing AAPG Memoir 105 on the Haynesville shale gas field. Dr. Hammes is currently an adjunct professor teaching at

Texas A&M University as a Halbouty Visiting Chair.



**DR. KIRT CAMPION** is currently a consulting geologist, recently retired from Marathon Oil Company where he worked as a senior stratigrapher from 2008 to 2017. Prior to working at Marathon, he worked at Exxon Production Research Company and ExxonMobil Upstream Research Company for 29 years as a clastic sedimentologist and stratigrapher, specializing in deep-water sequence stratigraphy. Dr. Campion received his Master’s Degree from the University of Nebraska and his PhD from Ohio State University. Kirt has worked with core data representing wide variety of unconventional petroleum systems including: the Bakken in the Williston Basin, Woodford in the Anadarko Basin, Eagleford in south Texas, Siluro-Ordovician in Poland, and Spraberry in the Permian Basin. Kirt has been an active member of AAPG and SEPM for over 40 years. He has published several papers on sequence stratigraphy and on deep-water stratigraphy in California and Chile. He has guided field trips to a number of localities in California and Utah for AAPG, SEPM and GSA.

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