Introducing the 2015 Southwest Section of the AAPG Annual Convention

ROCK THE FALLS

Evaluating the Past, Exploring the Future

April 11–14, 2015

Wichita Falls, Texas

❖ **Field Trip – Saturday, April 11th**

The Wichita Mountains, Oklahoma, A tour of Eocambrian rifting and Permian erosion

- Led by Dr. Jonathan Price – Midwestern State University
- Exploring the intense magmatism and subsequent deformation associated with the Southern Oklahoma Aulacogen
- Lunch at the famous Meers Store

**Field Trip limited to 50 attendees and requires member registration*

❖ **Annual SWS-AAPG Short Course – Sunday, April 12th**

Borehole Imaging: From Acquisition to Interpretation

- Presented by Valentina Vallega – Senior Borehole Geologist, Schlumberger
- Open to geologists, reservoir engineers, team managers, or those who work with borehole imaging data through open hole logging programs

**Short Course requires member registration*

❖ **Icebreaker – Sunday Evening, April 12th**

The traditional icebreaker kicks off the convention!

- Hear the smooth sounds of Wichita Falls blues legends The Mike O'Neill Band
- Visit with our exhibitors while reconnecting with old friends and making new contacts
- Feast on shrimp, tenderloins, and heavy hors d'oeuvres

**Admission with name badge; cash bar*

❖ **Technical and Poster Presentations – April 13th & 14th**

- Unconventional resource plays in Texas and the U.S.
- Papers and posters covering frontier exploration areas and alternative exploration techniques
- Presenters interested in participating may contact Scott Meddaugh at scott.meddaugh@mwsu.edu

❖ **"Southern Hospitality" – Monday Evening, April 13th**

Bob and Ann Osborne open their locally-famous estate for an evening of socializing and southern hospitality. Their home, built in 1935 by local drilling legend Red Dillard, was originally landscaped in 1949 by international architect James Fry of Paris, France. Most recently, Georgia landscape architect Phillip Watson refined the rose gardens to accentuate the sprawling lawns.

- Enjoy a rib dinner prepared by the Wichita Falls Mavericks
- Afterwards, board the trolley for a tour of the Country Club Estates presented by a local historian
- Complete your evening listening to the cowboy crooners Prairie Moon perform

**Shuttle service will be provided to and from local hotels*

For more information on the convention, go to: http://www.ntgeologicalsociety.org/2015-southwest-section-of-aapg-convention/

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2015 Southwest Section of the AAPG Annual Convention

Schedule of Events

Saturday, April 11th

8:00am - 6:00pm	Wichita Mountains field trip
	Ray Clymer Exhibit Hall, MPEC, Registration 7:00am - 8:00am

Sunday, April 12th

8:00am - 4:30pm	Short Course: "Borehole Imaging: From Acquisition to Interpretation"
	Ray Clymer Exhibit Hall, MPEC, Registration 7:00am - 8:00am
1:00pm - 5:00pm	Convention Registration at Ray Clymer Exhibit Hall, MPEC
TBA	Southwest Section Board Meeting
6:00pm - 8:00pm	Convention Ice Breaker
	Ray Clymer Exhibit Hall, MPEC

Monday, April 13th

7:00am - 4:00pm	Convention Registration at Ray Clymer Exhibit Hall, MPEC
7:00am - 8:00am	Speakers/Moderators and Judges Breakfast
7:00am - 8:00am	House of Delegates Breakfast
8:30am - 12:00pm	Exhibit Hall
8:30am - 9:00am	Opening Ceremonies
9:00am - 11:30am	Technical Session
12:00pm - 1:15pm	All-Convention Luncheon: Marita Noon
1:30pm - 5:00pm	Technical Session
1:30pm - 5:00pm	Exhibit Hall
6:00pm - 9:30pm	Southern Hospitality Social: Osborne Residence

Tuesday, April 14th

7:00am - 11:00am	Convention Registration at Ray Clymer Exhibit Hall, MPEC
7:00am - 8:00am	Speakers/Moderators and Judges Breakfast
8:30am - 11:30am	Technical Session
8:30am - 12:00pm	Exhibit Hall
12:00pm - 1:30pm	DPA Luncheon: Mike Oestmann
	Convention Closing Remarks

Technical Presentations and Posters (Partial Listing)

❖ **What Now? Developing Conventional Reservoirs Unconventionally (Keynote)**
Lou Mazzullo – Consultant

❖ **Are Gas Shales Suitable Analogs for Oil Shale Exploration?**
Alton A. Brown – Consultant

❖ **High Resolution Seismic Inversion for Characterization of Reservoir Lateral Heterogeneity**
John Castagna – Lumina

❖ **Regional Upwelling During Late Devonian Woodford Deposition in Oklahoma and Its Influence on Hydrocarbon Production and Well Completion**
Erik Kvale – Devon Energy

❖ **Shale Gas Comparison: Appalachian Basin to Fort Worth Basin, A Historical Review**
Dan Steward – Republic Energy

❖ **Stratigraphic Variability of the Woodford Shale across Oklahoma**
Brenton McCullough – Devon Energy

❖ **Regional Stratigraphy and Reservoir Lithofacies Distribution of the Marble Falls Formation, North-Central Texas**
Beau Berend – UT-Arlington; Newark E&P

❖ **Nanopetrophysics characterization of the Bakken Formation**
Joseph Anyanwu – UT-Arlington

❖ **The use of chemostratigraphy to refine ambiguous sequence stratigraphic correlations in marine shales. An example from the Woodford Shale, Oklahoma**
Brian Turner – University of Oklahoma

❖ **Iron Bridge and South Spur Fields, Dickens County, Texas—the Rest of the Story**
Gary Rice – GeoFrontiers

The Wichita Mountains, Oklahoma

A tour of Eocambrian rifting and Permian erosion

Jonathan Price ▪ Midwestern State University

Saturday, April 11th 8:00am-6:00pm

Ray Clymer Exhibit Hall, MPEC

Granite-cored mountains rise from the rolling plains of Permian cover in southern Oklahoma, providing dramatic vistas of the current landscape and the regional geological processes at work in the beginning and the end of the Paleozoic. The Wichita Mountains are dominated by the exposed magmatic products of the Southern Oklahoma Aulacogen, the products of the latest Proterozoic and earliest Cambrian rifting. The topography is dominated by a series of shallow granite sheets, with noteworthy volumes of rhyolite and gabbro. These igneous units were buried by thick tropical carbonate platform deposits for much of the Paleozoic, and then exposed during Pennsylvanian uplifting only to be buried in their own detritus in the Permian.

This one day field trip will provide an overview of the geology exposed in the Wichita Mountains, highlighting the structure of the southern Oklahoma basement and Permian erosion and local deposition. The trip will examine the widespread rhyolite lava flows of the Carlton Group, the attributes and intrusive style of Wichita Granite and Raggedy Mountain Gabbro Groups, and basaltic subvolcanic dikes. The trip will also reference the nature of regional deformation, the weathering characteristics of these units, and the erosion and depositional features preserved in the Permian exposure. Along the way, we will enjoy views of the landscapes, flora, and fauna within the Wichita Mountains Wildlife Refuge. This includes a driving trip to the summit of Mount Scott and a walking tour of the newly-opened geology interpretive trail at Burford Lake (a cooperative project of the refuge, the University of Oklahoma, and the Oklahoma Geo Survey; funded by the Red Earth Desk and Derrick Club).

Join us for a memorable excursion into this insightful window into the processes that shaped the region.

***Field Trip and Convention Registration is Saturday, April 11th at the Ray Clymer Exhibit Hall, MPEC. The field trip is limited to 50 people. Basic convention registration is required for attendance.**

2015 Annual SWS-AAPG Short Course

"Borehole Imaging: From Acquisition to Interpretation"

Presented by Valentina Vallega

Senior Borehole Geologist and Geology Team Leader, Schlumberger, Midland, Texas

Sunday, April 12th 8:00am-4:30pm

Ray Clymer Exhibit Hall, MPEC

Introduction

Borehole imaging has been part of open hole logging services since early 1990. Since then, many images have been acquired, collected, and processed. With an increase in data acquisition, the expansion in the application of these data sets has followed. Borehole images are extremely valuable data sets as they represent the closest comparison to core or outcrop that can be acquired within a borehole. Interpretation workflows associated with these data sets provide a high level of resolution in detail, which in turn allows for an increase of predictability for subsurface models.

Borehole images and dipmeter data can be utilized for a detailed structural analysis of the borehole. Images can highlight the presence of fractures, analyze porosity partitioning in heterogeneous carbonate formations, determine in-situ stress orientation with the identification of drilling induced fractures and borehole breakouts, and can be the main data sets in facies analysis and sand body orientation studies.

Who Should Attend

The course is open to geologists, reservoir engineers, team managers, or those who deal with borehole imaging data acquisition through open hole logging programs. This course is directed to all of those who work with borehole imaging.

Objectives

- Provide a workable foundation for the applications of borehole images
- Provide an overview of the relevant technologies available in the industry to acquire borehole images
- Help the attendees understand image deliverability for various products
- Help the attendees identify common features recognizable on borehole image logs

Content

- Common tools theory, measurements, and conveyance type for borehole imaging tools
- Basics of imaging log quality control
- Basics of image processing and automatic dip computations
- Dip classification and basic structural analysis based on dip data (logs, plots, models)
- Fracture analysis: differentiation and tracing techniques
- In-situ stress indicators
- Secondary porosity analysis in carbonate reservoirs
- Basic sand body orientation: paleocurrent analysis and channel geometry orientation
- Overview of borehole data utilization in reservoir modelling

***Short Course and Convention Registration is Sunday, April 12th from 7:00-8:00am in the Ray Clymer Exhibit Hall at the MPEC. Basic convention registration is required for attendance.**

Rock The Falls

2015 Southwest Section of the AAPG Annual Convention

Keynote Speaker

Louis J. Mazzullo

Louis J. Mazzullo, LLC – Littleton, Colorado

Monday, April 13th – Ray Clymer Exhibit Hall, MPEC

What Now? Developing Conventional Reservoirs Unconventionally

The Southwest Section welcomes favorite son and two-time A.I. Levorsen Award winner Louis J. Mazzullo to address its members on his favorite subject, conventional reservoir rocks. Mazzullo is from New York state where he received two degrees, including a BS in geology from Brooklyn College, CUNY followed by a MS degree from State University NY, Stony Brook. He furthered his geoscience education by earning a second masters degree in Geophysics from the University of Chicago. He began his career in 1976 with Energy Resources Corporation in Blanding, Utah as chief geologist in uranium exploration. This passion led him to Phillips Petroleum Co. in Albuquerque, NM where he became a project manager in the same field. Over his long career, Mazzullo has actively worked for many other independent exploration companies and has explored a majority of the hydrocarbon basins in the US. Mazzullo, who currently lives in Littleton, Colorado, is a leading consultant, providing expert geological advisory services within the oil & gas industry.

Activity in the oil patch over the last decade has focused more on the unconventional shale gas, shale oil, and other "resource"-type plays, to varying success, than on conventional, lower cost exploration and development. Improved frack technology, large shale resources, and higher oil prices had driven the push to develop these resources, and it paid off in providing our country with more energy independence. The economics of many of these plays, however, even during the period of high oil prices, were, in places, marginal to uneconomic, with notable exceptions. Part of the problem with developing economic resource plays is a lack of understanding of the geology and long-term decline characteristics of those reservoirs, as many of them had not been producing long enough to get a good sense of their projected performance. Many of the plays are statistically, rather than scientifically driven. The "follow the leader" mentality in the industry often created a void in the search for more proven, conventional reservoirs, drove up leasing costs wherever it was perceived there was even proximity to a shale play, and severely impaired the ability of smaller players to be involved with conventional reservoirs in or out active resource play areas.

Development of conventional reservoirs in the United States had taken a back seat to the unconventional and resource plays, even though many opportunities have always existed for new field, infill, and step-out development in old fields. As we are, at least temporarily, entrenched in another cycle of depressed oil prices, the need to hunker down with real science to develop lower-(finding)cost reserves is of paramount concern to many companies that are heavily invested in higher-cost shale and resource plays, and to smaller players who may now be able to have the breathing room they need to acquire acreage where they were previously pre-empted because of artificially inflated leasing costs brought on by shale plays. Now, more than ever, if vendor prices come down commensurate with oil prices, modern drilling and completion technologies can be applied to the conventional reservoirs, as a means of accelerating production from old fields and in step-out development. A number of conventional reservoirs in the Permian, Denver, and Williston Basins (and elsewhere) are amenable to step-out development and horizontal drilling, and would benefit by the extraction of bypassed reserves, and accelerated production of lower permeability reservoirs.

An understanding of reservoir development and geometry is essential to the success of such plays, and so requires that we get back to the science of exploration, if we have the resources to work through the present downturn. Examples of such potential plays are presented for the Morrow of the Permian and Denver Basins, Cisco-Canyon of the Permian Basin, and the Madison of the Williston Basin.

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Advancing the World of Petroleum Geosciences™

All-Convention Luncheon

Monday, April 13th 12:00-1:15pm

"Energy Makes America Great – The Politics of Energy and their Economic Impact"

Marita Noon

As the Executive Director of the companion organizations, Citizens' Alliance for Responsible Energy (CARE) and Energy Makes America Great (EMAG), Marita's overall aim is to keep a positive energy message in the public dialogue. In the past eight years, she's become a go-to resource for insight and commentary on energy issues. Because her presentations are news-based and tailored to each audience, she never gives the same speech twice. You can expect news-based talking points that you can use with family, friends, and neighbors who are not in the industry and who do not understand the role that energy plays in our lives. You'll be inspired and educated through Marita's unique blend of news, research, and anecdotes.

AAPG
Division of Professional Affairs

AAPG Division of Professional Affairs Luncheon

Tuesday, April 14th 12:00-1:30pm

"Owners of Oil – Their Exploration and Discovery of a Vision"

Michael A. Oestmann

Mr. Oestmann has over 30 years of experience in all aspects of the oil and gas business, with a particular focus on company start-ups, exploration, asset management and development. He has explored numerous geologic basins with a primary focus in the Permian Basin and has a consistent record of increasing production in existing fields, exploration success, and company development and sale. Mr. Oestmann began his career with Exxon Co. USA in 1982 after graduating from Rice University with a bachelor's degree in geology with a geophysics option. He worked 15 years with Exxon, 7 years with Titan/Pure Resources/Unocal, 2 years with Celero/Whiting, and 1 year with Lothian Oil in various exploration, development, and senior management positions. In 2007 he co-founded Piedra Resources with private equity partners. Piedra sold its assets to Berry Petroleum in 2011 for over $120 million. Mr. Oestmann began Tall City Exploration in May of 2012 with a $200 million equity commitment from Denham Capital. He is a 30 year member of the AAPG and SEG, and member of the PBGS (having served as President), WTGS, and SPE. He is a certified geologist with the Texas Board of Professional Geoscientists and the DPA of the AAPG. He also serves as an elder at Westway Church of Christ. He and Cathy, his wife of 30 years, live in Midland, Texas.

“A Night of Southern Hospitality”

Bob & Ann Osborne Estate

Monday, April 13th, 6:30pm, 3100 Harrison St

Bob and Ann Osborne open their locally-famous estate for an evening of socializing and southern hospitality. Their home, built in 1935 by local drilling legend Red Dillard, was originally landscaped in 1949 by international architect James Fry of Paris, France. Most recently, Georgia landscape architect Phillip Watson refined the lawns for a more sculpted appearance. This creates a perfect setting for a rib dinner prepared by the Wichita Falls Mavericks. Afterwards, board the trolley for a tour of the Country Club Estates presented by a local historian and then end the evening listening to the cowboy crooners Prairie Moon perform. Shuttle service will be provided to and from the Homewood Suites and La Quinta Inn & Suites.

The Mavericks: “Corralling Friends for Wichita Falls"

The Mavericks organization was established to promote the City of Wichita Falls, the continuance of outdoor "Chuck Wagon" style cooking, and to honor and aid persons and organizations which have been, or will be, beneficial to the city.

The five members of area cowboy music group Prairie Moon play a good deal of classic Sons of the Pioneer-type songs like "Tumbling Tumbleweeds”. They have recently added some "new" songs to their repertoire such as "Cross the Brazos at Waco" by Kay Arnold and "Come Back to Old Santa Fe" by Peter Rowan of the Rowan Brothers. Prairie Moon originally formed with bass player Will Sullivan who joined up with the three Calloway brothers: Tim, Michael, who plays French harp; and Ron, who plays guitar. David Holcomb joined the group in 2001 after the group's first CD. All five members of the group sing, and all compose songs. They can sing four-part harmony. The group's sets are half-traditional cowboy music and the other half original music in the same cowboy vein.