

**Agenda for Annual Meeting of MSRL
March 19-22, 2018**

Austin, Texas

Core Workshop: Held at Bureau of Economic Geology, Core Research Center

Monday, March 19, 8:30 AM – 3:30 PM

Wolfcamp (upper), Delaware Basin: *Ruppel and Zhang*
Two Fingers (upper Mississippian), Permian Basin: *Mauck*
Marcellus Fm (middle Devonian), Pennsylvanian: *Ko*
Austin Gp. (upper Cretaceous), Texas: *Loucks et al.*
Avalon Fm. (Leonard), Permian Basin: *Reed*
Smackover Fm (Jurassic), Texas: *Schemper*

Main Meeting: Held in ROC (adjacent to Bureau of Economic Geology main building)

Tuesday, March 20, 8:00 AM – 7:00 PM

Oral Presentations

08:00–08:20AM Welcome by the Bureau of Economic Geology's Associate Director for Energy: *Shuster*
08:20–08:40AM Introduction, overview, highlights: *Ruppel et al.*

Reservoir Architecture and Attributes

08:40–09:10AM Facies and reservoir quality of the Marcellus Formation, Appalachian Basin, Lycoming County, Pennsylvania: *Ko*
09:10–09:40AM Stratigraphy, depositional systems, and facies; Barnett Two-Finger Sand: *Mauck*
09:40–10:10AM Wolfcamp facies and facies architecture in the Delaware Basin: *Ruppel*
10:10–10:25AM **BREAK**
10:25–10:55AM 3D stratigraphic modeling of Lower Permian plays in the Permian Basin: *Domisse*
10:55–11:25AM New insights on the geology of the Eagle Ford from hyperspectral imaging: *Alnahwi*

Pores and Porosity

11:25–11:55AM New observations on the classification of organic-matter pores: *Reed*
11:55–01:00PM **LUNCH**
01:00–01:30PM Hyperspectral Imaging Technology: History, Recent Developments, and Implications for Unconventional Reservoir Characterization: *Kosanke*
1:30–2:00PM Insights into early reservoir development of the Eagle Ford Group from observation of the USGS Gulf Coast #1 West Woodway Low-R_o research core: *Loucks*
2:00–2:30PM Cyclic variations in pore size distributions; Wolfcamp A, Delaware and Midland basin: *Zhang*
2:30–3:00PM Preliminary Wolfcamp pore systems and lithology; Delaware Basin: *Reed*
3:00–3:45PM Group Discussion: *All*
3:45–4:00PM Introduction to poster session
4:00–7:00PM Evening Poster Session. *Hors d'oeuvres and drinks provided*

Poster Presentations (Display in Bureau Library)

- Lateral variability of lithology and pore systems in an Eagle Ford horizontal core: *Reed*
- Organic matter-rich facies and pore networks in the lower Austin Chalk: *Loucks*
- High-resolution hyperspectral core imaging: Applications to unconventional reservoirs: *Kosanke*
- Vertical oil migration and charging in the Wolfcamp; Delaware and Midland basins: *Zhang*
- Oil generation and retention in the Wolfcamp A unit, Midland basin: *Sun*

- Pore systems in the high-maturity (dry-gas window) Marcellus Formation depositional context, Appalachian Basin, Pennsylvania: *Ko*
- Fracture network from microseismic data and a semi-analytic model of gas production: *Sheng*
- Effects of microscale compressibility on mudrock porosity and permeability: *Sheng*
- Mudrock calibration of core XRF data: *Sivil*
- Bruker Technology demonstration of microbeam XRF scanning of core material: *Knapp*
- (Core workshop) Integrated Approach to Characterizing the Upper Jurassic Smackover Carbonate Ramp Succession in East Texas: *Schemper*
- (Core workshop) Lithofacies and reservoir quality of the (Mississippian) Upper Barnett Two Finger Sand, Midland Co. Texas: *Mauck*
- (Core workshop) Examples of Carbonate Gravity-flow deposits and associated strata in the early Permian Avalon Section in the Eastern Delaware Basin: Whiting No. 1201 Collier, Reeves County, TX: Case for Hybrid Reservoirs?: *Loucks*
- (Core workshop) Contrasting Austin Chalk depositional styles from South Texas: *Loucks*
- (Core workshop) Facies and reservoir quality of the Middle Devonian Marcellus formation, Appalachian Basin, Pennsylvania: *Ko*
- (Core workshop) Facies Characterization of the Wolfcamp Fm in the Delaware Basin: Comparison of Chemostratigraphic and Conventional Approaches: *Ruppel*

Main Meeting: Held in ROC (adjacent to Bureau of Economic Geology main building)

Wednesday, March 21, 8:00 AM – 5:00 PM

Oral Presentations (continued)

Pores and Porosity (continued)

8:00 – 8:30AM Avalon Shale petrography and pore networks; Delaware Basin: *Loucks*

Hydrocarbon chemistry, migration, saturation and organic matter

08:30–09:00AM Re-evaluation of Rock-Eval data and TOC using programmed pyrolysis from the HAWK instrument: *Ko*

09:00–09:30AM Organic petrography and diagenesis of Wolfcamp facies, Midland Basin: *Hackley*

09:30–10:00AM Geochemical characterization of organic matter: Wolfcamp A, Midland Basin: *Sun*

10:00–10:15AM **BREAK**

10:15–10:45AM Controls on variations in oil saturation; Wolfcamp A Delaware/Midland Basins: *Zhang*

10:45–11:15AM Using box models to interpret OAE elemental and isotope patterns: *Larson*

11:15–11:45AM Geochemical and biomarker characterization of the Lower Cretaceous OAE1b: *Sun*

11:45–12:15PM Saturation isn't what it used to be: towards more realistic petroleum fluid saturations and produced fluid compositions in organic-rich unconventional reservoirs *Pepper*

12:15 –1:15PM **LUNCH**

Permeability and Two Phase Fluid Flow

1:15–1:45PM Multiscale mudrock permeability based on molecular dynamics and pore networks: *Javadpour*

1:45–2:15PM Object-based geomechanical modeling of mudrock permeability: *Javadpour*

2:15–2:45PM Preliminary three-dimensional model of mudrock permeability: Non-Darcy gas flow, surface diffusion and sorption effects: *Javadpour*

2:45–3:15PM An improved pressure decay method to measure mudrock matrix permeability: *Peng*

3:15–3:30PM **BREAK**

New Methodologies and Advances

3:30–4:00PM High resolution hyperspectral and dual energy CT: Relationships to log data: *Duncan*

4:00–4:30PM Principal component analysis of XRF core data: Interpreting mineral variations: *Larson*

4:30–5:00PM Group Discussion of Present and Future Research Focus: *All*

Mudrocks Short Course: Held at Bureau of Economic Geology, Main Building

Thursday, March 22, 8:00 AM – 5:00 PM

Title: Introduction to Mudrock Systems: Origin, Distribution, Fluid flow, and Reservoir Characterization

Classroom

VR room at the Bureau of Economic Geology (Bldg 130) on the Pickle Research Campus.

Instructors

Dr. Steve Ruppel – Stephen.Ruppel@beg.utexas.edu – (512) 471-2965

Dr. Bob Loucks – Bob.Loucks@beg.utexas.edu – (512) 471-0366

Dr. Farzam Javadpour – Farzam.javadpour@beg.utexas.edu – (512) 232-8068

Agenda

	Instructor
07:45–08:00AM Meet and greet, coffee and breakfast items provided	<i>All</i>
08:00–09:20AM Introduction to mudrock systems	<i>Ruppel</i>
09:20–09:30AM BREAK	
09:30–10:50AM Introduction to diagenesis of mudrocks	<i>Loucks</i>
10:50–11:00AM BREAK	
11:00–12:00PM Pore types and pore networks in mudrock	<i>Loucks</i>
12:00–01:00PM LUNCH (catered)	
01:00–02:20PM Defining and characterizing mudrock reservoirs	<i>Ruppel</i>
02:20–02:30PM BREAK	
02:30–03:50PM Advances in gas-in-place analysis and methods	Javadpour
03:50–04:00PM BREAK	
04:00–05:00PM Advances in fluid flow in shale	Javadpour