PBS-SEPM
NEWSLETTER

January/February 2019

Inside this issue:

PBS-SEPM January Luncheon Information	2
PBS-SEPM February Luncheon Information	3
PBS-SEPM March Luncheon Information	4
Young Professional and Intern Field Trip Information	5
Upcoming Luncheon Speakers	6
PBS-SEPM Publication: Carbonate Well Log & Core Data Analysis Spreadsheet v. 4.0 (**$40**)	7
PBS-SEPM Publication: DVD order form	8
•Executive Board (2018-2019)	9
•Individual Sponsors	10
•About PBS-SEPM	

Executive Board Elections 2019—2020

Dear Valued PBS-SEPM Members,
It is that time of the year when we seek your active involvement in our society by serving on the Executive Board. We are accepting nominations for the following positions (*we accept self-nominations*):

1- President-Elect
2- First Vice President
3- Second Vice President
4- Treasurer
5- Secretary

Please send your nominations to Mohamed Zobaa at zobaa_m@utpb.edu

Sincerely,
Mohamed Zobaa
President

Mark Your Calendars! [PBS-SEPM luncheons at Carrasco Room, Midland College]

February 2019

- **19: PBS-SEPM** Luncheon: (11:30am-1pm) Speaker: Buddy Price, UT at Austin - "Controls on Wolfcampian and Leonardian Slope Morphology and Implications for Basinal Sedimentation Patterns and Stratigraphy, Delaware Basin, Southeast New Mexico and West Texas"

March 2019

- **19: PBS-SEPM** Luncheon: (11:30am-1pm) Speaker: Ashton Faulkner, Geologist, Beryl Oil & Gas - "Organic facies, paleoenvironment, and hydrocarbon source potential of the Cretaceous Mancos and Gallup Formations, San Juan Basin, New Mexico

April 2019

- **16: PBS-SEPM** Luncheon: (11:30am-1pm) Speaker: Jacob Couvalt, Director: QCL at BEG

Previous PBS-SEPM Luncheon Talk – January 22, 2019

Speaker: Antony N. Giles, Ph.D.

Associate Professor of Geology, Midland College

"The Geology and Ediacaran Fauna of Mistaken Point, Newfoundland "

Tuesday January 22, 2019
Midland College, Carrasco Room, 11:30 a.m.

Biography

Antony N. Giles is Chair and Associate Professor of Geology at Midland College. He received his BS in geology from University of Arkansas at Little Rock, his MS from Sul Ross State University in Alpine, TX, and worked on his PhD at Washington State University. His specialties are in the fields of volcanology, igneous petrology, geochemistry and planetary geology. He has worked as a geologic consultant and was also senior geologist with Arkansas Department of Environmental Quality for several years. He has taught at several universities and college throughout the U.S.

Selected Publications

- *A Case Study of Greenstone in the Davis Mountains, Texas: A Possible Source for Lunate Stones.* Walter, R. and Giles, A., Archaeological Explorations of the Eastern Trans-Pecos and Big Bend: Collected Papers, Volume 1, Eds. Dasch, P. and Mallouf, R., Papers of the Trans-Pecos Archaeological Program, No. 6, 2013.
- *Recognition of variants of A-type rhyolite: a comparison of the Snake River plain and Trans-Pecos Texas volcanic provinces.* A.N. Giles and J.A. Wolff, American Geophysical Union Annual Meeting, San Francisco, CA, 2009.
- *Two petrologic types of high-grade ignimbrite? A comparison between rhyolites of the Trans-Pecos Texas and central Snake River plain volcanic fields.* Giles, Antony N.; Wolff, John A.; Larson, Peter A.; Urbanczyk, Kevin M: Abstracts with Programs - Geological Society of America, March 2008, Vol. 40, Issue 3, pp. 11-12
- *Geochemical Evolution of the Chinati Mountains, Presidio County, Texas* (Master's Thesis, 2006). Advisor: Dr. K. Urbanczyk (SRSU).
- *Application of Lineament Analysis to Groundwater Availability Models.* Urbanczyk, Kevin and Giles, Antony: Texas Groundwater Meeting, 2005.

Upcoming PBS-SEPM Luncheon Talk – February 19, 2019

Speaker: Buddy Price

PhD Candidate, University of Texas at Austin

"Controls on Wolfcampian and Leonardian Slope Morphology and Implications for Basinal Sedimentation Patterns and Stratigraphy, Delaware Basin, Southeast New Mexico and West Texas "

Tuesday February 19, 2019
Midland College, Carrasco Room, 11:30 a.m.
$25 per attendee

Abstract

Few studies have assessed carbonate slope morphology and associated slope to basinal facies architecture to characterize potential conventional and unconventional reservoir distribution. This well log mapping techniques in Lower to Middle Permian (Wolfcampian through Leonardian) strata in the Delaware Basin in Southeast New Mexico and West Texas to assess the linked depositional processes and stratigraphic architectures from platform to slope to basin. Detailed mapping (using >10,000 logs over approximately 15,500 km^2 creating depth constrained pseudo-seismic visualization) reveal a high degree of variability in slope profiles rimming the basin. The 3rd, 2nd and 1st Bone Spring margins all exhibit irregular plan-view geometries, progradation to aggradation (P/A) ratios ranging from < 1:1-25:1, and slope gradients ranging from 2-35°.

Detailed mapping reveals a high degree of variability in slope profiles rimming the basin. The 3rd, 2nd and 1st Bone Spring margins all exhibit irregular plan-view geometries, progradation to aggradation (P/A) ratios ranging from < 1:1-25:1, and slope gradients ranging from 2-30°. Data indicate variability in shelf margin profiles is related to several factors which also strongly influenced basinal sedimentation patterns: **1)** Locations of underlying shelf margins influenced deposition and resulting geometries of overlying slopes. Zones with the highest sedimentation rates and rapid progradation in the 3rd, 2nd, and 1st Bone Spring compensationally migrated from the west to northwest to north, respectively, in response to filling accommodation offsetting promontories in relict platform margins. These zones mark dominant sediment input pathways to the basin during each stratigraphic sequence. **2)** Low gradient (2-5°) slopes typically have P/A ratios between 10:1-25:1 and promote consistent downdip transport of carbonate sediment to the basin, evident from high volumes of carbonate sediment distal from low angle slopes. Higher gradient (10-25°) slopes with P/A ratios <1:1 had volumetrically less carbonate sediment transported downdip and likely had an increase in finer-grained deposits, observed in higher gamma ray well log response. **3)** Mapped major deep-seated faults focused sediment dispersal which created zones with high P/A ratios (>15) and created anomalous progradational noses reaching 15-25 km into the basin. Some faults also channeled sediment gravity flows at point sources creating basin floor carbonate fan complexes in the Wolfcamp through 1st Bone Spring Formations with thicknesses reaching over 300m and proximal axis-to-distal fringe lengths up to 100km. **4)** Antecedent topography in underlying toe-of-slope to proximal basin floor deposits created anomalous thickness trends, altered sediment transport pathways, and channeled coarser grained carbonate sediment gravity flows into mud-rich basinal settings in all observed units.

Findings suggests detailed analyses of slopes is necessary to constrain controls on basinal sedimentation. This work may provide analogs for assessment of unconventional targets distal from current conventional carbonate slope reservoirs.

Biography

Buddy Price is a PhD candidate at the University of Texas at Austin under the supervision of Drs. Xavier Janson and Charlie Kerans. He received his bachelor's degree from Western Kentucky University and his master's degree from Oklahoma State University. He previously worked at Devon Energy as the geologic lead for the Meramec interval of the STACK Play in the Anadarko Basin, and later as a member of the Wolfcamp reservoir characterization team in the Delaware Basin. He is currently conducting research within the Reservoir Characterization Research Lab (RCRL) at the Bureau of Economic Geology in mixed carbonate and siliciclastic slope to basin depositional processes and resulting stratal architecture. He is a member of AAPG, SEPM, and is also an officer for the SEPM Carbonate Research Group.

Upcoming PBS-SEPM Luncheon Talk – March 19, 2019

Speaker: Ashton Faulkner
Geologist, Beryl Oil and Gas, LP

"Organic facies, paleoenvironment, and hydrocarbon source potential of the Cretaceous Mancos and Gallup Formations, San Juan Basin, New Mexico"

Tuesday March 19, 2019
Midland College, Carrasco Room, 11:30 a.m.
$25 per attendee

Abstract

A palynological investigation was conducted on 35 core samples from the Cretaceous Mancos Shale and Gallup Sandstone in two wells, SJ 28-6 and Burnham-1, Rio Arriba and San Juan counties, New Mexico. Four main groups of palynological constituents were identified: phytoclasts, opaques, palynomorphs, and amorphous marine organic matter (AMOM). Two palynofacies were recognized within the studied interval in SJ 28-6. Palynofacies-1 is composed of phytoclasts (41%), AMOM (36%), opaques (19%), and palynomorphs (4%) and Palynofacies-2 is made up of phytoclasts (64%), opaques (30%), AMOM (5%), and palynomorphs (1%). A similar organic facies composition was observed in Burnham-1, where Palynofacies-1 is represented by phytoclasts (average abundance 51%), AMOM (33%), opaques (15%), and palynomorphs (1%), while Palynofacies-2 is dominantly composed of degraded phytoclasts (76%), opaques (12%), AMOM (2%), and palynomorphs (1%). Such organic facies change in both wells argues for a regional shift in the depositional paleoenvironment from shallow marine inner shelf conditions with pronounced terrestrial influence to higher energy, more oxygenated fluvio-deltaic settings.

In both of the studied wells, Palynofacies-1 organic constituents suggest type II-III kerogen (mixed oil and gas prone), while those of Palynofacies-2 indicate type III kerogen (mainly gas prone). Palynomorph coloration within the studied interval lead to an interpretation of thermally mature organic matter. Geochemical analyses performed on the studied samples confirm palynological data and provide additional evidence for hydrocarbon production.

Biography

Ashton Faulkner is a geologist at Beryl Oil and Gas, LP based in Midland, Texas. She started her career at Beryl Oil and Gas in 2017 as a geotech while simultaneously working toward her master's degree. Ashton has worked on oil and gas exploration projects in Utah and Texas, with her primary focus in the Permian Basin. Ashton received a Bachelor of Science in Geology with a minor in Geoinformatics from Texas A&M University in 2016 and a Master of Science in Geology from The University of Texas of the Permian Basin in 2018. She is a member of the American Association of Petroleum Geologists, West Texas Geological Society, Permian Basin Section of the Society for Sedimentary Geology, and Young Professionals in Energy.

YOUNG PROFESSIONAL AND INTERN FIELD TRIP
June 6-9, 2019
Registration Form

- Four day multi-disciplined field trip in the Guadalupe Mountains for geology, engineering and land young professionals and interns
- Trip led by Dr. Robert Trentham from The University of Texas of the Permian Basin and Dr. Cory Hoffman of Apache Corporation who have a combined 60 years of geological experience in research, development and production in the Permian Basin.
- Robert Campbell (engineering), Chris Fling (land), and Teri McGuigan (land) will provide mentoring support and have comparable years of Permian Basin experience in their respective professions.
- Goal is to educate participants in combining outcrop data with industry exploration and production techniques in a multi-disciplined environment
- Participants will have opportunity to observe world-class outcrops of shelf to basin deposits that are direct analogues to producing fields in the Permian Basin
- Lectures covering geology of west Texas, carbonates, sequence stratigraphy, quick and simple log and engineering calculations and land practices
- Classroom exercises on general land practices, sequence stratigraphy, log correlation, water saturation determination, seismic interpretation and production analysis
- Break out sessions specific to each discipline

Participants will leave Midland, TX on June 6, travel to Carlsbad, NM, where they will stay at the Stevens Inn, and return to Midland, TX, the evening of June 9. Included in the costs: round trip transportation from Midland, three nights lodging, three breakfasts, three lunches, refreshments in the field, guidebook and handouts.

Limited space is available, so the first to register will be given priority.

Cost per person for Double Occupancy is $950.00
(Single rooms will be allocated based on availability and happenstance of an odd number of male or female participants)

Discipline (Mark One) **Geologist ( )** **Land Professional ( )** **Engineer ( )**

REGISTRATION FEE NON-REFUNDABLE AFTER May 28, 2017

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Credit card orders may be faxed to (432) 279-1360 or Online: info@pbs-sepm.org
For additional information contact: Robert Campbell (432) 557-2458

PBS-SEPM Luncheon Upcoming Speakers

March 19, 2019:
Ashton Faulkner
"Organic facies, paleoenvironment, and hydrocarbon source potential of the Cretaceous Mancos and Gallup Formations, San Juan Basin, New Mexico"

April 16, 2019:
Jacob Couvalt
Title Coming Soon

May 16, 2019:
TBD

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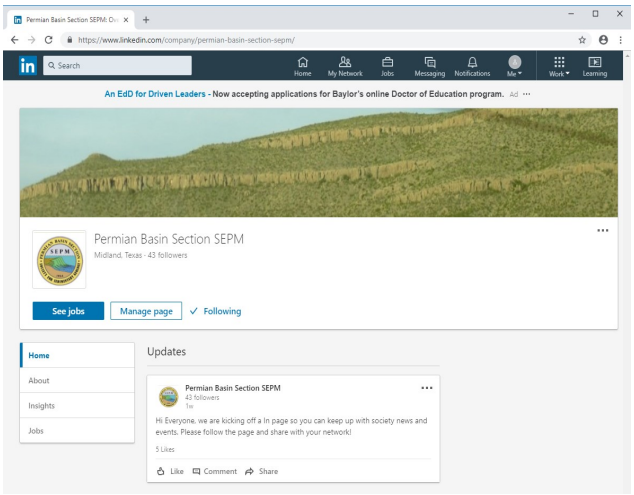
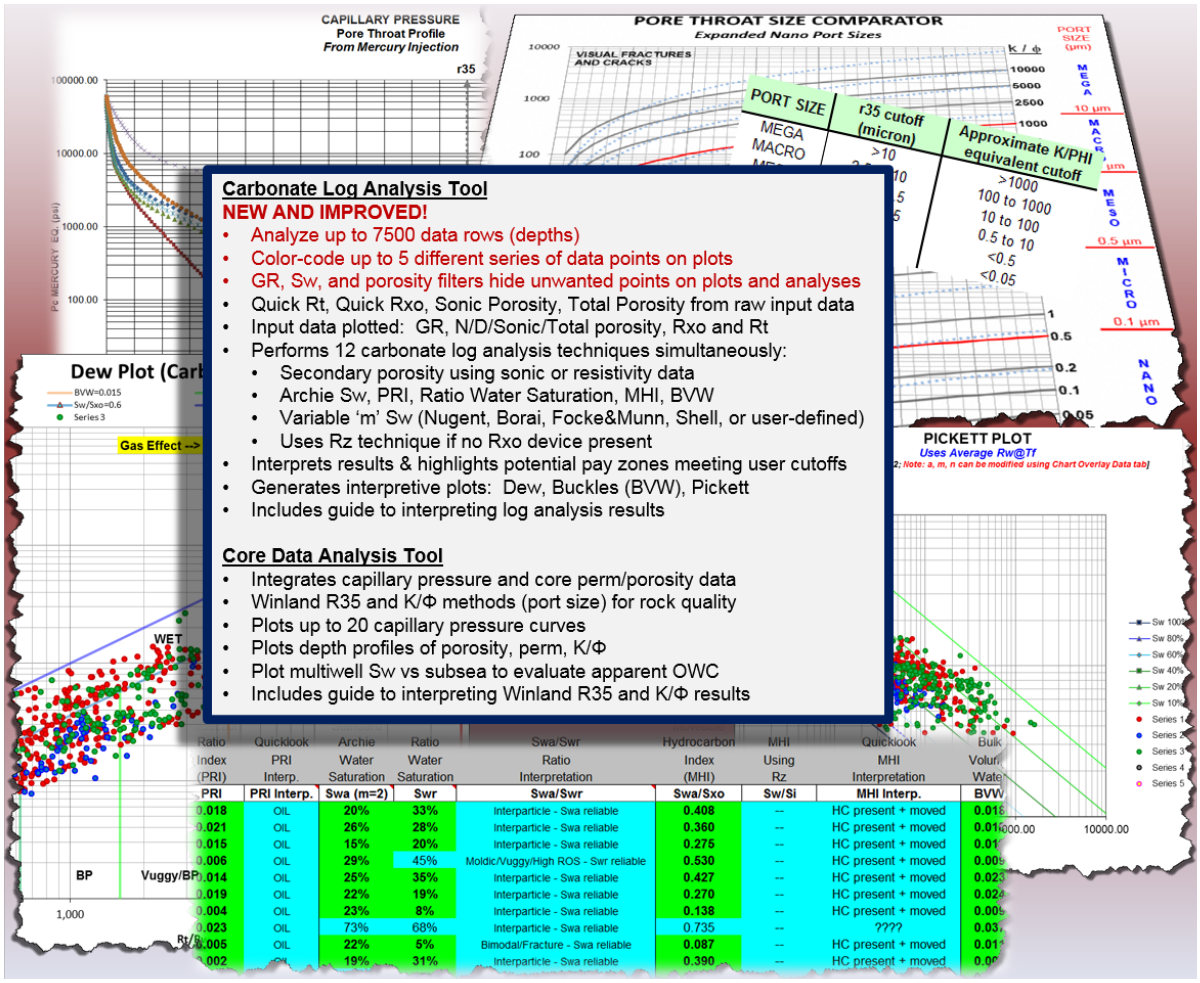


Follow for luncheon speaker information, society updates, photos, and more!

PBS-SEPM Publication
Carbonate Log Analysis Spreadsheet v. 4.0

By: Cory L. Hoffman

Designed for Microsoft Office Excel 2013



INTRODUCTORY PRICE: $40 *(all proceeds go directly to PBS-SEPM)*

- **Get 2 tools for 1 low price — spreadsheet includes carbonate log analysis AND core data analysis tools**
- **Flash drive contains current version (Excel 2013; v. 4.0) and previous version (Excel 2010; v. 3.2) of spreadsheet**
- **Price includes free upgrades within version class (v. 3, v.4, etc.) for each registered user**

Quantity: _____ **Total: $**_____ (*plus 8.25% sales tax; add $5 for shipping/handling if mailing required*)

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Do you have an idea for an interesting luncheon talk? Have a core workshop you'd like to present? Have some suggestions on how PBS-SEPM can better serve the geologic community? Just click on the e-mail above & drop us a note, your PBS-SEPM Executive Board wants to hear from you!

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PBS-SEPM is the Permian Basin Section of SEPM—the Society for Sedimentary Geology. However, you do not need to be a SEPM member or a geologist to join PBS-SEPM.

Our non-profit society relies entirely upon the efforts of dedicated volunteers to serve the geological community—primarily through educational events. These events include monthly luncheon talks, core workshops, annual field trips, and special geological publications. Additionally, we are involved on the college campuses—reaching out to future earth scientists through scholarships, discounted memberships, and offering full-time geology students the ability to participate in professional-grade field trips at little to no cost.

If you would like to join PBS-SEPM, you may visit our updated website (www.pbs-sepm.org) to learn more about us, download or fill out a membership form, and learn how to get involved.

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Both individual and corporate sponsorships are available

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www.pbs-sepm.org

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Cover Inset Photo: "Middle Brushy Canyon Channel" (Roadcrop, Guadalupe Mtns.; Bryant Reasnor shown)