

PBS-SEPM NEWSLETTER

President- Elect's Column

As we head into the holi-

day season and our already

busy calendars become even

ment. Despite some volatility

markets at the time I'm writ-

become another banner year.

ing this, 2014 is on track to

It's truly exciting to see the

rejuvenation of the Permian

For many of us who are in-

volved in the oil and gas in-

again is an exciting place to be; truly at the forefront of

technology and science. It is

amazing to see the explosive

growth of the unconventional

resource plays, in addition to the fresh look and new devel-

opment of the tried-and-true

conventional reservoirs. Cer-

tainly, new completion tech-

nologies and favorable oil

dustry, the Permian Basin

busier, it's a good time to

stop and reflect for a mo-

that is going on the in the



November 2014

"Science is the great antidote to the poison of enthusiasm and superstition." — Adam Smith— (1723-1790) Scottish Economist

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Basin.

Inside this issue:

PBS-SEPM Luncheon, Speaker: Pukar Mainail, Weatherford Labs, Title: Elemental Data and Its Application to Formation Evaluation and Wellbore Placementand Cutoff Stratigraphy "

2014-15 PBS-SEPM Executive Board and Business Sponsors prices have contributed to this, but at the end of the day it's still good science and intellectual curiosity that has made this revolution possible. Even with the tremendous growth of production, I still think we are in the early days of really understanding why these plays really work, and there is much more potential to realize. That is where organizations like the PBS-SEPM fit in.

One of the primary missions of the PBS-SEPM is to help promote geoscience, and sharing of the geoscientific knowledge of the Permian Basin. Through our luncheon meeting talks, field trips, core workshops, and other educational activities, we hope to continue to provide this service to our members, for the benefit of our entire community. I would like to thank all of you, the PBS-SEPM members, for your continued support of the society, and encourage you to consider volunteering to serve on a committee, or even run for elected office on the board in the future.

Happy Holidays!

John Leone President-Elect PBS-SEPM 2014-2015 http://www.pbs-sepm.org

PBS-SEPM Luncheon, **5** Speaker: Dr. Ronald Steel, UT Austin, Title: Sediment Volume and Facies Partitioning in Shelf-Margin Prisms "

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Mark Your Calendars! (all PBS-SEPM presentations at the Midland Center)

NOVEMBER 2014

•12: WTGS Luncheon, (11:30 am—1pm) Speaker: Bud Holzman, Title: Iraq Oil Potential

•18: PBS-SEPM Luncheon, , (11:30 am—1:00 pm) Speaker: Pukar Mainail, Weatherford Labs, Title: Elemental Data and Its Application to Formation Evaluation and Wellbore Placement

DECEMBER 2014

 3: WTGS/DPA Luncheon: (11:30—1:00 pm) Speaker: Mike Oestmann, Tall City Exploration

- 11: WTGS/PBS-SEPM Open House (11:00 am—4:00 pm) WTGS/PBS-SEPM Office, 2900 W. Front St.
- 16: PBS-SEPM: No Luncheon Meeting

JANUARY 2015

- 5: SWS AAPG: Bill Hailey Memorial Short Course, Art Saller, Carbonate Depositional Systems, Abilene
- 13: WTGS Luncheon: (11:30am-1pm) Speaker: Dr.

Roger Slatt, Ph.D., University of Oklahoma, Title: Sequence Stratigraphy, Geomechanics, Microseismicity, and Geochemistry Relationships in Unconventional Resource Shales.

 20: PBS-SEPM: Luncheon, (11:30 am—1:00 pm)
 Speaker: Dr. Ronald Steel, UT Austin, Title: Sediment
 Volume and Facies Partitioning in Shelf-Margin
 Prisms

PBS-SEPM Luncheon Talk –November 18, 2014

Pukar Mainali

1893 "Elemental Data and Its Application to Formation Evaluation and Wellbore Placement "

Technical Advisor / Geologist Weatherford Geoscience Services, Weatherford Laboratories, Houston, TX Tuesday November 18, 2014 - Midland Center, 11:30 a.m.

Abstract

Wellsite geoscience technologies have provided operators with powerful, cost-effective method for exploiting rich, but а underappreciated sources of data: mud gas and cuttings. The suite of services is customizable to an individual client's needs, as dictated by the challenges that they face in understanding the reservoir. This approach has been particularly effective for unconventional resource plays, primarily shale that now account for the majority of wells being drilled in North America. These surface-based measurements can all be made without the risks associated with downhole measurements. regardless of temperature, pressure, or vibration in the wellbore, and with little or no impact on drilling operations. Key rock data will be collected from the well, even if wellbore conditions deteriorate and logging is not possible. These cuttings data represent an essential link back to laboratory (core) and petrophyical data sets, especially early in a play, when understanding the range of lithologies and fluids present is critical.

The near-real-time acquisition of detailed gas composition, organic geochemical parameters, mineralogy, elemental composition and chemostratigraphic position has allowed a more complete understanding of shale reservoirs while drilling and before well completion. This early knowledge increases the ability of operators to design better completions, minimize completion costs, and ultimately, optimize production.

"An education isn't how much you have committed to memory, or even how much you know. It's being able to differentiate between what you do know and what you don't ."

Antole France

(1844—1924)

"Chance favors the prepared mind."

- Louis Pasteur (1822-95)French chemist and bacteriologist.

PBS-SEPM Luncheon Talk –November 18, 2014

Biography

Pukar Mainali received his B.S. Geology/Engineering (2009) and M.S. Geology (2011), both from University of Texas at Arlington, United States. He completed M.S. thesis study entitled "Chemostratigraphy of the Haynesville Shale, East Texas Basin" and published several meeting abstracts based on that research. He joined Weatherford Laboratories in early 2012 as a Geologist/Elemental Petrologist and has performed studies on most of the North American unconventional plays including the Permian Basin unconventional play, the Big Lime Formation, Marcellus Shale, Lewis Shale, Niobrara Formation, Vaca Muerta Formation, and many others. He has also contributed to the chemostratigraphic interpretation of the Sargelu-Najmah sequence in Umm Gudair Field, Kuwait. Pukar has used elemental techniques for chemostratigraphic correlation, formation evaluation, and improved drilling in shale, and carbonate reservoirs in North America, South America, the Middle East, China, and Australia.



Pukar has over 4 years of rock-based experience, including sedimentary petrology, Chemostratigraphy and elemental geochemistry. His primary role at Weatherford Laboratories as a Technical Advisor is to develop and promote Wellsite Geoscience Services (WGS).

Pukar is a member of American Association of Petroleum Geologists, and Houston Geological Society.

"We learn geology the morning after the earthquake."

Ralph Waldo Emerson

"A geologist is a faultfinder."

- Anonymous

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"Science is facts; just as houses are made of stone, so is science made of facts; but a pile of stones is not a house, and a collection of facts is not necessarily science."

- Jules Henri Poincaré (1854-1912)

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 would love to hear from you!

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"No one is useless in this world who lightens the burden of it for someone else"

- Benjamin Franklin

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PBS-SEPM Luncheon Talk –January 20, 2015



Dr. Ronald J Steel

"SEDIMENT VOLUME AND FACIES PARTITIONING IN SHELF-MARGIN PRISMS "

Jackson School of Geosciences, The University of Texas at Austin, Austin, Texas Tuesday, January 20, 2015 - Midland Center, 11:30 a.m.

Abstract

An understanding of how sediment budget volumes have been partitioned into differing compartments of source-to-sink fairways, as well as quantitative estimates of the relative amounts of sand and mud in these compartments, is of key importance to holistic studies of both modern and ancient large-scale sedimentary systems. We demonstrate how the early Maastrichtian Lewis-Fox Hills sediment budget was partitioned into the shelf, slope, and basin-floor fan compartments in the deep-water shelf margin prism of southern Wyoming. Basin-scale, budget-volume calculations for high-resolution (~100 ky) shelf-margin clinothems indicate that the total volume, sandstone volume and mudstone volume partitioning into these three compartments show average ratios for mid case scenarios of approximately 1.1:1.1:1.0, 2.7:1.0:1.6, and 1:1.4:1.1 respectively. The partitioning of sandstone and mudstone mostly reflects the sandy composition of fluvial and shoreline systems on the shelf, and the efficiency of turbidity currents in bypassing sand through the slope to form large sand-prone basin-floor fans, while the same currents and other processes store much mud on the slope. Departures from these average ratios occur when the shelf-margin growth tends to be more aggradational or more progradational with a larger fraction of the sediment volume partitioned into the shelf or deep-water compartments respectively. As suggested by some data and observations, these ratios appear to be somewhat similar to ratios in other margins in guite different tectonic settings, sediment supply and sea level regimes. Ratios of sediment volume partitioning are useful and fundamental in the description and analysis of source-to-sink sedimentary studies. They also enhance prediction and interpretation of the long term variables driving shelf-margin growth, basin infill, and overall source-to-sink evolution.

"In rivers, the water that you touch is the last of what has passed and the first of that which comes; so with present time."

> Leonardo da Vinci (1452 - 1519)

"You cannot teach a man anything; you can only help him discover it in himself."

> Galileo Galilei (1564 - 1642)
> Italian physicist, mathematician, engineer, astronomer, and philosopher.

PBS-SEPM Luncheon Talk –January 20, 2015

Biography

Ron Steel is Professor & Chair of Department of Geological Sciences, Jackson school, UT Austin and Sixth-Century Chair at the University of Aberdeen, Scotland. He was previously Wold Chair of Energy at the University of Wyoming, Chief Geologist at Norsk Hydro, Norway and Professor of Reservoir Geology at University of Bergen Norway. He was educated at the University of Glasgow, Scotland.



Ron currently has graduate students working on deepwater deposits of the East Venezuela/Trinidad Margin, shelf-to-deepwater deposits of the southern Neuquen Basin Argentina, Wilcox shelf deposits in Gulf of Mexico and deepwater deposits of the early Gulf of California margin. "No man ever steps in the same river twice, for it's not the same river and he's not the same man. Nothing endures but change."

Heraclitus of Ephesus (535-475 BCE) Greek philosopher

"Chance favors the prepared mind."

- Louis Pasteur (1822-95) French chemist and bacteriologist.

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November 2014



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"..In reply, I can only plead that a discovery which seems to contradict the general tenor of previous investigations is naturally received with much hesitation."

<u>Charles Lyell</u>, British Lawyer, Geologist, (1797 - 1875) 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 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 website (<u>www.pbs-sepm.org</u>) to learn more about us, download a membership form, and learn how to get involved.

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"Volunteering is an excellent way to provide meaning in your life and help give back to your local community." Peter Muggeridge