

# Bits & Bytes



THE PETROLEUM MUSEUM

VOL. XXXXIII No. 3, Third Quarter 2015

## West Texas Wanderers

*Join Us  
On a Two-Day  
Trip Through  
West Texas and  
Southeast New  
Mexico during  
the best time  
of year:*

**October 28-29**



*Shown at left, a pictograph from Hueco Tanks; below from left, the Western Heritage Museum in Lea County, Pratt Cabin in McKittrick Canyon, and Hueco Tanks.*



Fall in the Permian Basin, with sunny skies and cool days, is the perfect time for traveling. This year the Petroleum Museum is sponsoring a two-day trek to see fall colors (yes, there are areas with colorful leaves!) and other sites that many residents know about but never see. Leaving the Museum on an All Aboard America Travel Coach on October 28, the group will head first to Hueco Tanks State Park to view thousands of pictographs and petroglyphs left by prehistoric and historic Native Americans.

The next day, October 29, the group will visit colorful McKittrick Canyon, Guadalupe Mountains National Park, and the historic Pratt Cabin before heading north to Hobbs, N.M. to see the Western Heritage Museum and Lea County Cowboy Hall of Fame. This museum fo-

cuses on the history of southeast New Mexico and the neighboring area in northwestern Texas. Billing itself as the area where oil, water and cowboys DO mix, the museum exhibits show life on the Llano Escabado from prehistoric times to the present. The Lea County Cowboy Hall of Fame features the numerous rodeo world champions who come from Lea County. That county has produced more rodeo champions than any other area in the U.S.

For information on the trip or to register, contact Carey Behrends at the Museum, 432-683-4403. Or email him at [cbehrends@petroleum-museum.org](mailto:cbehrends@petroleum-museum.org). Cost is \$165 per person for museum members; \$195 for non-members. Deadline to register is Sept. 30.

### Archives:

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Give "40 for 40"  
For the Future

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THE PETROLEUM MUSEUM

**Permian Basin  
Petroleum Museum,  
Library and  
Hall of Fame  
...exploration,  
innovations  
and legends...**

# New Worlds Going Up Daily

## Countdown Begins on Grand Opening Spring 2016



*Rock work continues on the Permian Reef, above, and the Drilling and seismic areas, below.*



*Walls are going up on the Energy City, photo above.*

Wonder what is happening behind the walls at the Museum? Lots! This summer work on the North and East wings has been in full swing. New ductwork, fire sprinkler systems and air handlers have been installed. The diorama has been carefully removed and taken to Chase Studio in Missouri where it was cleaned and refitted for its new home in the Permian Reef. A brand-new Boomtown is under construction and walls for Energy City are up and painted! Rockwork continues in the Permian Reef and in the Drilling and Seismic exhibit areas. It certainly is an exciting and busy time at the Museum as we count down to the grand opening! Stay tuned for details in the Spring of 2016.

## MINERAL UPDATE: *Galena*

Galena is the most abundant lead mineral and is known to have been mined since 3000 BC. Its low melting point and ease to work made it one of the first metals to be used by societies. It remains today a major source of metal. One of the world's primary ore of lead, Galena sometimes is mined for its silver content. Galena specimens are easy to identify with their distinct silver color and bright metallic luster. On the Mohs hardness scale, Galena is a 2.5, making it a relatively soft rock yet its high density makes it feel heavier than expected. Freshly broken pieces of this mineral show perfect cleavage in three directions, intersecting at 90 degree angles. Some of the most notable Galena specimens in the world are those from Bulgaria. This beautiful specimen was donated to the Museum by Betty Lou and Stephen M. Neely in 2013.



**GALENA**

### ***MAD About Minerals, Thursday, November 12, 6 p.m.***

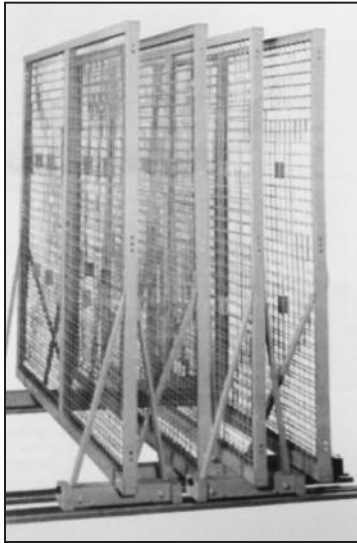
Mark your calendars for a fascinating presentation from members of the Mineral Association of Dallas (MAD) and meet the generous people who have helped create the beautiful exhibit in our Minerals Gallery. Learn about the investment value of minerals, hear about the mines where specimens are found and find out how these individuals built their incredible collections. See you on Thursday, November 12!



## Wheel Exciting!

Accepting a 2008 Ford truck from Halliburton officials in August is Museum Executive Director Kathy Shannon, second from right. A big thank you to Halliburton for helping the Museum continue its mission to tell the petroleum story!

## Renovations Move Into Archives Area



*New rotating handles, above, are part of the new shelving units. Art racks, left, will safely house the Museum's many paintings.*

The Petroleum Museum's Library and Archives Center is in the midst of a major makeover! Additional square footage for the vault, completely re-designed office space and library, and a much needed storage system for collections and artwork will greatly enhance the Archives Center.

The addition of a high density shelving unit will provide much needed storage of collections and archival materials. The shelving unit is more than 10 feet tall and operates on a track system that is easily moved by rotating the handles in the direction someone needs to move the shelves. Safety locks are incorporated into the handles to keep the systems in place when in use for the safety of the staff and collection. A 23-foot mobile art rack system will also be installed to safely house the many paintings owned by the Museum. Both the archive shelves and the art racks are specifically designed to not only handle the Museum's current collections, but most importantly, to satisfy archival and collection needs in the long term.

The Archives Center is one of the Museum's most utilized departments. We are excited to incorporate these much needed additions that will be used for many years to better serve our patrons and community!

## A MAD, MAD WORLD!

We are insanely grateful to all the "Mad Scientists" that made the Mysteries at the Museum a truly mad event! The evening of August 20 was filled with mind-blowing experiments, delectable gastronomy and poisonously potent potions mixed before our eyes.



**Richard Feynman**  
Mindy & Joe de Compiegne  
The Yarborough Group

**Nikola Tesla**  
Antelope Energy Company, LLC  
Frost

**Stephen Hawking**  
Jack E. Blake, Jr.  
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*Museum Bits & Bytes, Third Quarter 2015*

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**Special Thanks**  
to Norm Johnson For the Artwork

**Lab Techs**  
Mr. & Mrs. Ted Bosecker  
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Matt Dunnam, HNB Mortgage  
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Chelsea Pearson/Nathan Johnston  
Jenny & Brian Stubbs  
John Turro  
Herb & Gail Wacker

**And Thanks To Our Guest Scientists!**  
Erin Barrett – Super Science  
Cory Callaway – Physics, Midland High School  
Greg Hinterlong – Geologist, Chevron  
Dr. Paul Mangum – Biology, Midland College  
Thomas Mueller – Asst. Head of School for Academics, Trinity School  
Dr. Pat Nandakumar – Chemistry, Midland College  
Dr. Jessica Todia – Veterinarian, A to Z Clinic, Peeps & Creeps



*Dr. Pat Nandakumar makes elephant toothpaste during one of the Museum's education programs.*

## Hooray for State Funding!

This summer the Petroleum Museum was notified that it was the very fortunate recipient of state funding to be used for the sole purpose of furthering education in the Permian Basin. We are honored to be chosen for the funding and are thrilled to begin working with Midland College, the Midland County Library and others to offer exciting new learning opportunities to area residents. Special programs, teacher workshops, and engaging exhibits are just some of the many ways the funds will be used.

We look forward to this very special opportunity to expand the Museum's reach well beyond its walls.

### PARTY ON THE PATIO WITH JIM HALL

The Museum hosted its 6th annual "Party on the Patio with Jim Hall" for its Pit Crew members. Over 60 people, many from out of state and out of town, headed to the Petroleum Museum to watch a Live Drive of the Chaparral 2E with Jim Hall behind the wheel. The evening continued with a dinner catered by Mac's Bar-B-Q and finished with a fascinating question and answer session with Mr. Hall. If you are interested in joining the Museum's Pit Crew, which supports the Chaparral cars, contact Luanne Thornton, 432-742-7464.



### ON THE ROAD...TO YOAKUM COUNTY

On the road again...the Museum's Education Department hit the road again this summer for an Animal Outreach program in Yoakum County. Staff, including Mara Bland, above, and critters arrived in style in the Museum's new Suburban, decked out with a great Petroleum Museum wrap for an animal outreach program. Prairie dogs, chinchillas, snakes and turtles entertained and educated children of all ages in Denver City and Plains. This is the second year the Museum has been invited to participate in the Yoakum County Library's Summer Reading Program.

# What's Up?

A roundup of events at the Petroleum Museum

### DISTINGUISHED LECTURER



Mark your calendars for **Thursday, September 24, at 7 p.m.** to come out to the Museum to discover the "Physics of NASCAR"! Learn what it takes to design and manufacture a car that moves at great speeds, yet handles with precision...safely! **Speaker Dr. Diandra Leslie-Pelecky** will explain the intricacies of the sport and trace the life-cycle of a racecar, from creation to competition. Call the Museum for reservations today, 432-683-4403. Seating will be limited. The **Arlen Edgar Distinguished Lecture series** is generously sponsored by the **Abell-Hanger Foundation**.

### DOCENT TRAINING

Do you want to help us make science and history fun for children in the Permian Basin? Would you like a glimpse of the new exhibits being constructed? How about a great breakfast with friends? Then join us for Docent Training this fall and find out what a difference you can make! Petroleum Museum docents assist with guided tours, outreach programs, and an entertaining puppet show. Training will be held at the Petroleum Museum on Tuesdays and Thursdays during the month of October. We meet from 9 to 11:00 a.m. Each day will focus on a different topic to best prepare for our student and adult tours! Please let us know you plan to attend by contacting the Education Department at 432-683-4403.

### HALLOWEEN'S COMING!

Halloween is just around the corner – so make plans now to spend your Halloween with us! Tricks and Treats abound so don't miss this opportunity to trick and treat at the Petroleum Museum October 31 from 6 to 8 p.m. Candy donations are welcome and will earn discounts in the Museum Store. Call Channon Gregg for details, 432-683-4403.

# digging into summer fun

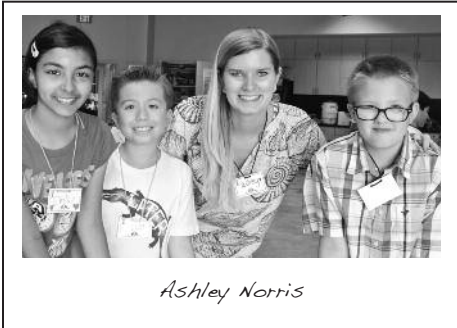
science classes; movies



*Digging into experiment*



*Waiting for movie to start*



*Ashley Norris*

An appeal to complete volunteer requirements enticed several members of The Junior League of Midland, Inc. to check out the Petroleum Museum summer programs. They completed their assignments while also gaining an appreciation for the Museum's educational programs.

"We have partnered with the League through their Volunteers in Midland program," said Mandi Thompson, Marketing/Education Director. The League's active members are required to perform four hours of service at an organiza-

## With Help From Volunteers

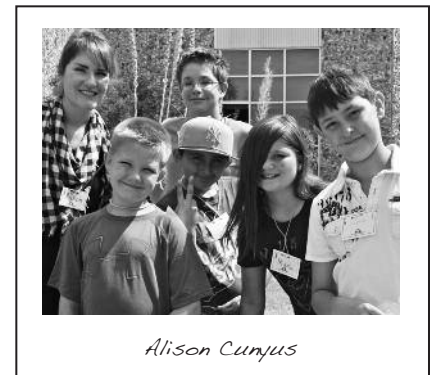
tion on an approved list.

"Our classes go hand-in-hand with the Junior League's focus area of 'Keeping Kids in School – Every Age, Every Stage.' Volunteers make a huge impact on the quality of our educational programs. We were so fortunate to work with women who are passionate about sparking an educational interest in the kids that attended our science classes," Thompson said.

Megan Howard, Alison Cunyus and Ashley Norris opted to work with the session on petroleum, "Pumped About Science."

"I love working with the kids at the camp because they usually teach me more than I can teach them," said Ms. Howard, volunteering for the second summer. "This year, I had quite a few campers who were clearly familiar with the geology field. I quickly picked up some knowledge in a field with which I was not familiar! Plus, who doesn't love experimenting with candy?" she said.

"I had so much fun working with the kids at the Museum," Ms. Norris said. "They had so much enthusiasm to learn and the activities they planned were not only fun for the kids but also the volunteers!"



*Alison Cunyus*

## ASK DR. PETRO

**Q**uestion: What is the term commonly used to refer to the act of deviating a well bore to head in the direction desired?

- A. miracle drilling
- B. advanced angle drilling
- C. deviated septum drilling
- D. directional drilling



**A**nswer: Directional drilling. This is the practice of drilling non-vertical wells, advancing the industry's ability to get otherwise unreachable oil. Because oil reservoirs typically extend over a large area, possibly several hundred miles across, full exploitation entails multiple wells scattered across the area.

Between 1985 and 1993, NCEL (now the Naval Facilities Engineering Service Center) of Point Hueneme, CA developed controllable horizontal drilling technologies. It is not common practice to drill a well horizontally to distances of two miles and may reach 25,000 feet when used under favorable conditions.

Wells are drilled directionally for several purposes:

- Increasing the exposed section length through the reservoir by drilling through the reservoir at an angle.

- Drilling into the reservoir where vertical access is difficult.

For instance, an oilfield under a town, a lake or a difficult-to-drill formation.

- Allowing more wellheads to be grouped together on one surface location can allow fewer rig moves, less surface area disturbance, and make it easier and cheaper to complete and produce the wells.

- Drilling along the underside of a reservoir-constraining fault allows multiple productive sands to be completed at the highest stratigraphic points.

- Drilling a "relief well" to relieve the pressure of a well producing without restraint (a "blowout"). In this scenario, another well could be drilled starting at a safe distance away from the blowout, but intersecting the troubled wellbore. Then, heavy fluid (kill fluid) is pumped into the relief wellbore to suppress the high pressure in the original wellbore causing the blowout.

## 40 for 40: Give and Create More Dreams

In 1975, oil was about \$7.75 per barrel, the average cost of a gallon of gas was 44 cents.

Bell bottoms and platform shoes were all the rage, disco music was beginning to rock the night away, and President Ford was making a stop in Midland to celebrate the opening of a new museum!

On September 13, 2015, the Permian Basin Petroleum Museum officially celebrates her Big **4-0!** If those walls could talk...they've seen the ups and downs of the last **40** years of an industry that formed the indelible character of the Permian Basin we know today. The Museum has been educating, inspiring and entertaining visitors from the Permian Basin, the state, the nation and around the world for **40** years. Help us commemorate this momentous occasion by contributing *at least* **\$40** to honor her **40th** year.

All monies will be placed in the Museum's permanent endowment fund ensuring the next **40** years and

beyond. The endowment plays a vital part in assisting with the business of operating. Your support today will help us continue to prosper **40** more years and long into the future.

Consider a gift in memory or in honor of someone who has inspired or nurtured a dream for the future. Your "**40 for 40**" gift will make a distinct difference in the Petroleum Museum's ability to continue its mission of offering a memorable and educational experience by sharing the petroleum and energy story and its impact on our lives. Join us as we celebrate **40** years of giving back and help us move forward to see where the next **40** years will take us! Visit the Museum's website at [www.petroleummuseum.org](http://www.petroleummuseum.org) to contribute online or call Luanne Thornton at 432-742-7464, say "**40 for 40!**" and she will take care of you.

### WELCOME: *To Newest Members*

Welcome to our special newest members:

**Contributing Members:**

Sharon & Carey Behrends  
Richard Booth  
Mr. & Mrs. Don L. Parks  
Jennifer Smith  
Wesley Sweet  
Rich Whiting

**Energy Circle Members:**

Mr. & Mrs. Dave Entzminger  
Mr. & Mrs. Joe Liberty  
Trey Resources

### APPLAUSE! APPLAUSE!

We want to give a round of applause to the following friends, companies and businesses. Their recent in-kind contributions of time, assistance or services are appreciated.



**Summer Class Speakers:**

Michael Price, Dr. Sott Van Pelt, Bill Halepeska

**Renovation/Oil Patch:**

Reece Albert Inc.; Alliance Field Services; Kirby-Smith Machinery; Associated Supply Company; Midland County Facilities Management

### MEMORIALS

Memorial gifts to the the Petroleum Museum are deposited in the permanent endowment fund to provide ongoing tribute to the individuals recognized in bold. Donors are listed below the honoree. Contributors from May 18 through August 24, 2015, were:

**IN MEMORY OF...**

**Linnie Donnelly**

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**Frank Suttles**

Permian Basin Geological & Geophysical Auxiliary

# Notable Dates

## SEPTEMBER

- September 15:** Brown Bag Lunch & Lecture Series  
Speaker: Karr Ingham  
"Economist"  
11:30 a.m. to 12:30 p.m.  
Free admission. Drinks & dessert provided.  
Sponsor: **Hahl Proctor Charitable Trust**
- September 24:** Arlen Edgar Distinguished Lecture Series  
Diandra Leslie-Pelecky  
"The Physics of NASCAR"  
7 p.m.  
Free ticketed event. Call for reservations.  
Sponsor: **Abell-Hanger Foundation**
- September 29:** Puppeteer Round Table  
11 a.m. to 1:00 p.m.  
RSVP to the Education Department, 683-4403.

## OCTOBER

- October 6:** Docent Training  
9 to 11 a.m.  
For information about becoming a Museum docent, call the Education Department, 683-4403
- October 8:** Docent Training  
9 to 11 a.m.  
For information about becoming a Museum docent, call the Education Department, 683-4403
- October 13:** Docent Training  
9 to 11 a.m.  
For information about becoming a Museum docent, call the Education Department, 683-4403
- October 15:** Docent Training  
9 to 11 a.m.  
For information about becoming a Museum docent, call the Education Department, 683-4403
- October 20:** Docent Training  
9 to 11 a.m.  
For information about becoming a Museum docent, call the Education Department, 683-4403

- October 20:** Brown Bag Lunch & Lecture Series  
Speaker: Jeff Floyd, horticulturalist  
Midland & Ector Counties Extension Service  
"Xeric Gardening & Water Quality Consideration"  
11:30 a.m. to 12:30 p.m.  
Free admission. Drinks & dessert provided.  
Sponsor: **Hahl Proctor Charitable Trust**
- October 22:** Docent Training  
9 to 11 a.m.  
For information about becoming a Museum docent, call the Education Department, 683-4403
- October 28-29:** Bus Trip to Hueco Tanks, McKittrick Canyon, Western Heritage Museum and Lea County Cowboy Hall of Fame
- October 31:** Halloween Tricks & Treats  
6 to 8 p.m.  
Free Admission  
Sponsor: **Midland High Students in Philanthropy**

## NOVEMBER

- November 6:** Boy Scout Camp-In  
Cubs/Webelos  
"Rockin' Dinos"  
7 p.m. to 8 a.m.  
Pre-registration required. Call the Education Department, 432-683-4403.
- November 12:** Mineral Association of Dallas  
"Minerals: Collections, Investments, Locations"  
6 p.m. No charge.
- November 17:** Brown Bag Lunch & Lecture Series  
Speaker: James Ward  
Associate Professor, Angelo State University  
"Rangeland Reclamation Research Project"  
11:30 a.m. to 12:30 p.m.  
Free admission. Drinks & dessert provided.  
Sponsor: **Hahl Proctor Charitable Trust**

## DECEMBER

- December 15:** Brown Bag Lunch & Lecture Series  
"Handbells in Concert"  
First Baptist Church Handbell Choir

## Museum Who's Who

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LUANNE THORNTON  
Development Director  
SUSAN MAHONEY  
Archives Manager  
CAREY BEHREND  
Programs/Events Director

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Director  
MARA BLAND  
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LETTY RUBIO  
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Museum Store Assistant  
BROOKE GREENWOOD  
Museum Store Assistant  
LISA WORDEN  
Finance Manager  
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Facilities Manager

AUDIE STEPHENS  
Facilities Assistant  
KEITH DOUCET  
Chaparral Car Specialist  
LANA CUNNINGHAM  
Public Relations Consultant  
STACIE HANNA  
Website/Communications  
Consultant

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9/15

**OUR MISSION:** We will share the petroleum and energy story and its impact on our lives.

**JOIN!**  
**And Get 15% Discount Now**

Your membership dollars truly make a distinct difference in the Museum's quest to continue being a valuable educational resource and community partner. Membership entitles you and your guests to free admission, 15% discount in the Museum Store and discounts on facility rentals. Members also receive advance notice of Museum events and programs.

Join the excitement and be a part of the Petroleum Museum. All membership levels are renewed annually and are non-transferable.

Visit the Museum website at [www.petroleummuseum.org](http://www.petroleummuseum.org) or call Luanne at 432-742-7464 to join today!

## THE MUSEUM STORE



Check out our **JURASSIC** selection of out of this **WORLD** dinosaurs and fossils, all at 30 percent **OFF** through **October 31** online and in store. The Museum Store is open from 10 a.m. to 5 p.m. Monday through Saturday and 2 to 5 p.m. on Sunday or shop online anytime at [www.petroleummuseum.org/shop](http://www.petroleummuseum.org/shop). Dig into this **DINO-MITE** deal!