

STEM Education. Building Bots Robotics. Engineering Funlabs. STEAM Sprouts. Fairy Tale Sprouts. Fall 2019.



STE(A)Ming Ahead Into Fall

STEM (Science, Technology, Engineering, and Math) education is becoming a staple inside and out of the classroom for many reasons. The ever-growing STEM industry, as well as technological advances in our everyday lives, creates a great need for such education to be provided for the future minds of our society. The importance of STEM education goes further than filling gaps in STEM careers. Skills developed through STEM-based programming are critical for every aspect of students' lives. The 21st-century skills that are developed through STEM learning include media and technology literacy, creativity, critical thinking, communication, flexibility, problem solving, decision making, and more. To help provide students in the surrounding communities quality STEM-based programming, the Petroleum Museum offers a variety of programs that keep young minds engaged throughout the school year.

We will kick off the fall with our **Building Bots Robotics & Engineering Funlabs** for students in kindergarten through sixth grade. These classes are designed to engage students in collaborative engineering challenges, robotic design, and creative activities. The classes feature our LEGO WeDo 2.0 sets, LEGO Mindstorm EV3 sets, Ozobots, Osmos, Spheros, and new KUBO

robotics equipment. With different themes for each session, young engineers will love coming to every session! Sessions for students in kindergarten through second grade are held on the first Tuesdays of September, October, and November while sessions for students in third through sixth grade are held on the third Tuesdays of the same months. The cost is \$25 per session for Petroleum Museum members and \$30 per session for non-members. Pre-registration is required.

STEAM Sprouts is a hands-on, interactive program for children ages 4 & 5 that will feature six-week sessions held on Mondays from 9:30 to 10:30 a.m. **OR** 11:30 a.m. to 12:30 p.m. beginning Monday, September 23. Each class will feature **Fairy Tale STEAM** programming that will include cooperative engineering tasks, social development, and creative activities. The cost is \$80 for Petroleum Museum members and \$100 for non-members. Pre-registration is required. Participants must sign up for the entire six-week session as classes will build upon each other. Special thanks to **Occidental** for making Building Bots and STEAM Sprouts possible!



Sign up NOW for Robotics, STEAM classes.
Go to www.pbpetro.org
or call 432-683-4403.

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

Save the Date

Pioneer Event to Honor 3

Save the Date!

Permian Basin Petroleum Pioneers 2019 Reunion



Friday, October 4, 2019
Permian Basin Petroleum Museum
Midland, Texas

Historical Speaker
Tumbleweed Smith
A Texas Oilfield Odyssey

TOP PIONEER AWARD

Jim Henry

ENGINEERING TECHNOLOGY AWARD

Steve Melzer & Bob Trentham

Keynote Speaker
Jacki Deason
Host, Jacki Daily Show

Registration, Coffee	9:00 a.m.
Morning Historical Program	10:00 a.m.
Business Meeting	11:00 a.m.
Luncheon & Keynote Speaker	12:00 noon

There will be a limited number of sponsor tables available. For more information, please contact Luanne Thornton, 432-683-4403. Final program and advance registration cards will be mailed separately.

Don't miss the Permian Basin Petroleum Pioneers 2019 Reunion. Jim Henry, known as "Father of the Wolfberry," will receive the Top Pioneer Award. The team of Steve Melzer and Bob Trentham will receive the Engineering Technology Award for their work in CO₂, enhanced oil recovery and residual oil zones. Noted radio personality Tumbleweed Smith will speak at 10 a.m. Luncheon speaker will be Jacki Deason, host of the Jacki Daily Show.

Contact Luanne Thornton, 432-683-4403, for sponsorships and more information.

Basin Burnout Features BBQ & Music



The Permian Basin Association of Directional Drilling (PBADD) will be hosting their fourth annual Permian Basin community event "Basin Burnout" Amateur BBQ Cook-off Competition and Music Festival at the Petroleum Museum on Saturday, September 14. There will be plenty of fun for the entire family, including great food from competition level BBQ pit masters, live country music featuring some of the Basin's favorite music, kids' activities and several auction and raffle items. This event is designed to support our local heroes.

Part of the proceeds from Basin Burnout will support and benefit Reel Thanx and Show of Support, Hunt for Heroes and Permian Basin Petroleum Museum. Come out and support your local heroes by listening and tasting the best of the basin! Visit www.basinburnout.com for ticket information or to register a cooking team.

Online Shopper? Smile When You Order

If you are shopping online remember to shop www.smileamazon.com and designate the Petroleum Museum as your charity of choice. A percentage of your purchase is donated to the Museum. Your everyday shopping can support the Museum with the click of a button!



Coming Events

Hiebert Follows Ancient Trade Routes

Archaeologist and National Geographic Fellow **Dr. Fredrik Hiebert** has searched for human history in some of the world's most remote and romantic places and put them in context – in terms of conflict, history, and culture.

Hiebert, archaeologist-in-residence at the National Geographic Society, will talk on *Ancient Trade Route Archaeology* as the **Arlen Edgar Distinguished Lecturer** at 7 p.m. Tuesday, September 24, at the Museum. The event is sponsored by the **Abell-Hanger Foundation**.

Working on all seven continents of the world, Hiebert has traced ancient trade routes overland and across the seas for more than 30 years and brought great stories of archaeological discovery to the pages of National Geographic for more than 15 years.



As a field archaeologist and explorer on the ancient Silk Road, he has excavated sites along this millennia-old link between Europe and East Asia. His excavations at a 4,000-year-old Silk Road city in Turkmenistan made headlines around the world. Following this most famous of trade routes led him to Afghanistan, where he identified the Bactrian gold, a trove of Silk Road-era artifacts lost during Afghanistan's decades of cultural upheaval. He also has searched for evidence of ancient submerged settlements in the highest lake of the Silk Road and in South America's Lake Titicaca.

As National Geographic's archaeologist-in-residence, he extends his enthusiasm for archaeology to the public in lectures, presentations, films, and museum exhibits.

The lecture is a free ticketed event at the Museum. For reservations, call 432-683-4403 or reserve online at www.pbpetro.org.



September 24
7 p.m.
Arlen Edgar
Distinguished
Lecture Series

Dr. Fredrik Hiebert
Archaeologist

Sponsored by:
Abell-Hanger Foundation

Minerals

Gem Expert's Talk Set for November

Thomas Elliott, CJG, GIA, will speak on *Discovering Hidden Treasures* on November 19 from 6 to 8 p.m. at the Museum. As owner of Catalyst Gems, he comes to the Petroleum Museum with more than 30 years of experience in the jewelry industry spanning different facets of sourcing, identification, valuing, production, and sales. His reputation for accuracy entitled him to become one of the leading independent gemological laboratories in the nation offering gem and jewelry appraisals, estate values, gem identification, diamond laser inscription, and antique and estate evaluations.

The evening event will open with short welcome reception followed by a discussion about gem and mineral makeup, and the process of vintage jewel and gem appraisals. Anyone with gems or vintage jewelry that needs to be verified and/or appraised is encouraged to bring it for a consultation. Guests also will be able to schedule formal appraisals by Tom at his studio at a later date.

This is a free ticketed event. Please call for reservations at 432-683-4403 or go online to www.pbpetro.org.

November 19
6 to 8 p.m.

Thomas Elliott
CJG, GIA
Catalyst Gems

Docent Training

Giving Life to Science, History



More than 6,500 students and adults enjoy guided tours through the Petroleum Museum each year. Join us in bringing science and history to life by leading tours at the Museum. Become a trained docent/tour guide by attending Docent Training from 10 a.m. to 2 p.m. October 10-11. Lunch will be provided. To RSVP or to ask questions about this opportunity, please contact the Education Department at 432-683-4403 or education@petroleummuseum.org.

October 10-11
10 a.m. to 2 p.m.

Docent Training

An EXPLOSIVE Summer!

From coding trains to exploding paint rockets to jumping into the science behind sports, area kids had a busy summer full of science and fun! Check out some of the cool things we did!

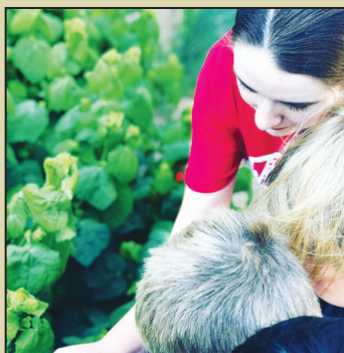
Thank you to **Apache Corporation** for making these programs possible!

Apache



Volunteer

Classes STEMulated Teacher Interns



The Museum had the unique opportunity to offer several internships to teachers in surrounding communities this summer. Teachers from the UTPB STEM Academy, Goddard Junior High and Greenwood ISD helped with the various education programs, including STEAM Sprouts, Summer Science Camps for students ages 6-12, and Movie Maker Mondays. The teachers were able to use their experience to learn more about the world of STEM while assisting students in the experiments and challenges for each camp.

"My time spent helping out with the STEM camps was an invaluable and fun experience! I loved having the opportunity to enrich the summer learning of the students who participated. I look forward to utilizing many of the activities in my second-grade classroom."

-Martiza Acosta, 2nd Grade Teacher, UTPB STEM Academy

"I've gained experience in STEM, robotics, and art that I will be able to bring to life for my students in the upcoming school year. My role as a teacher day to day is to bring new material to students; this summer I had the opportunity to be the student as the children at the museum taught me so much about creativity and open mindedness in the world of science!"

-Amy Airhart, 1st Grade Teacher, Greenwood Elementary School

"I really enjoyed spending time with the kiddos this summer during the STEM camps. I feel like all the activities STEMulated their hearts and minds. I am excited to see what next summer holds!"

-Kirsten Taylor

"This was my first experience working the STEM camps at the Petroleum Museum, and it couldn't have been better! The camps this summer renewed my love for science and most of all teaching. I can't wait to do it again!"

-Nikki McCurry, 7th Grade Science Teacher, Goddard Junior High

"I have really enjoyed working with the students, leaders, and staff of the Petroleum Museum during summer camp! I really enjoyed all of the camps this summer, however I have to say my favorite was the STEAM camp! I look forward to working with all the students, leaders, and staff again next summer!"

-Christine Dockall, 1st Grade Teacher, UTPB STEM Academy



Family Science Night: “Spookology”

6:30 to 8 p.m. Thursday, October 31, 2019

Join us if you dare on Thursday, October 31, from 6:30 to 8 p.m. at our “Spookology” Family Science Night! Experiment with witches’ brew, create exploding wizard potions, explore surface tension with melting monsters, and much more! Wear your costume, experience SPOOKtastic experiments, and trick or treat in the Oil Patch! Museum Members enjoy the added bonus of early admission from 6 to 6:30 p.m. For information on becoming a Museum member, contact Luanne Thornton at ltornton@petroleummuseum.org.



Be sure to mark your calendars for our first Family Science Night of the 2019 to 2020 school year on **Thursday, September 12**, as we experience the world of Kitchen Science!

Special thanks to **Chevron** for their 19th year of sponsoring Family Science Nights at the Petroleum Museum!

EDUCATION ROUNDUP

TOURS & OUTREACH

Book your tours and outreach programs for the 2018-19 school year very soon.

The Museum offers guided tours aligned with the Texas Essential Knowledge and Skills (TEKS) that can be customized to fit your classroom needs. We also offer combination Class & Tour packages. Class topics include Robotics, Animals, Geology, Astronomy, Dinosaurs and Fossils. The Museum also features a full range of outreach programs that can be brought to your school.

Contact the Education Department for more information.

TRAVELING TRUNKS

The Petroleum Museum’s Education Department has been working hard to cre-

ate unique hands-on, cross-curricular STEM teaching tools for students in the surrounding communities! Our Educational Trunks are designed to educate students while building on fundamental disciplines like science, technology, engineering, math, art, social studies, and language arts.

Each trunk contains lesson plans and activities that are aligned with the TEKS education along with all the supplies needed for each lesson. Trunks currently available for check out for the 2019-2020 school year include Ozobots (2nd – 6th Grade), Geology (K – 2nd Grade), Earth Science (3rd – 6th Grade), Treehouse STEM (K – 1st Grade), and LEGO MoreToMath (1st – 2nd Grade).

For pricing and availability, please contact the Education Department at 432-683-4403 or

education@petroleummuseum.org.

Monthly BBLs

TUESDAY, SEPTEMBER 10

“Hazards That Have Affected Texas State Parks”

Speaker: Rebecca Dodge

TUESDAY, OCTOBER 8

“Lower Emissions Through Cost-Cutting Technology”

Speaker: Mark Lancaster

TUESDAY, NOVEMBER 12

“Midland Storytelling Festival”

Speaker: Sue Roseberry

All Brown Bag Lunch & Lectures are free and start at 11:30 a.m. at the Museum. Drinks and dessert are provided. Thank you to our sponsors: **Norma J. McGrew & the Hahl Proctor Charitable Trust, Bank of America, N.A., Trustee**

ASK Dr. Petro

What Is the Flame Shooting Into the Air?



One of the prominent features of oil refineries and petrochemical plants is a tall stack with a flame burning at the top. This stack, called a flare, is an essential part of the plant safety system which protects against the dangers of over-pressuring industrial plant equipment. Volatile hydrocarbons form very explosive mixtures if mixed with air. As a safety precaution they are delivered by closed piping systems to the flare site where they may be burned in a controlled manner.

Rather than released into the atmosphere, flaring also occurs at wellheads to dispose of excess natural gases that are either unusable or uneconomical to recover during production. When petroleum crude oil is extracted and produced from oil wells, raw natural gas associated with the oil is brought to the surface as well. As the state’s primary oil and gas regulatory

agency, the Texas Railroad Commission has jurisdiction over permitting of flaring operations to prevent waste of natural resources. Most flaring permit requests that the Commission receives are for flaring casinghead gas. In new areas of exploration, pipeline connections are not typically constructed until after a well is completed and a determination is made about the well's productive capability.



Join Now for Fall/Winter Perks

No time like the present to join or renew Museum membership! Museum membership has many perks beginning with free admission and store discounts. To become a member, log on to our secure website at www.pbpetro.org or contact Luanne Thornton at 432-683-4403.

Welcome to our newest and renewed members of the Museum as of May 22, 2019!

Contributing

Family

Lynne & Ryan Almand
Clarissa Austin
Nicol Benton
Fredda Louise Black
Christa & Zach Borders
James Borovilos
Tiffany Bradley
Jim Brooks
Mr. & Mrs. Daniel Byerley
Amber & Mark Cody
Mr. & Mrs. Tom Cook
Brandi & Scott Cooper
Michelle Elizondo
Mr. & Mrs. Jeffrey Fansler
Leita Faulkner
Terry Foster
Carrie & Wes Gotcher
Sherrie & Robert Green
Stephanie & Brendan Griffin

Jeremy Hernandez
Stephanie Hill
Mr. & Mrs. Justin Kitchens
Lucky Services, Inc.
Kourtney Mewhorter
Melissa Mickel
Mr. & Mrs. Roger Miller
Sarah Mitchell
Jeremiah Moody
Laura Nodolf
Mr. & Mrs. Don L. Parks
Stephanie Passmore
Thomas Phillips
Eric Pope
Samantha Rainey
Megan & Jess Randall
Stacy Smith
Mr. & Mrs. C.J. Sorrell
Hong Su
Fiona Suttle
Catherine Sweaney
Charmaine & Odell Traffanstedt
Kenya & Michael Vandiver
Mr. & Mrs. Robert Walker
Amber Zeringue
Ivett & Manuel Zuniga

Friend

Mr. & Mrs. Michael J. Canon
Dan Pemberton
Roger Spotts

Associate

Performance Chemical Company
Jane Williams

Supporter

Bob & Pam Leibrock

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Permian Basin Water in Energy Conference
Piper Jaffray-Simmons
Republic Oil & Gas Company
Dr. & Mrs. Tulsi Dyal Singh

Sustainer

Summit Petroleum LLC

Benefactor

Mr. & Mrs. Joe N. Gifford
Occidental

APPLAUSE, APPLAUSE

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

David Arrington
Helmerich & Payne
Greg Hinterlong (Dr. Petro)
Select Energy Services
United Rentals
UTPB STEM Academy Interns
Women's Energy Network

Memorials

Memorial contributions to 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 22 through August 13, 2019, were:

IN MEMORY OF...

T.B. O'Brien
Mr. & Mrs. Bill Fair
Robert K. Hillin
Mr. & Mrs. Sidney S. Lindley



Looking at the Future

The Permian Strategic Partnership Committee is one of the many groups meeting at the Museum in a room available for rentals. Leading discussion are, from left, author Meghan O'Sullivan; former U.S. Secretary of Commerce Don Evans; U.S. Sen. John Cornyn; PSP CEO Tracee Bentley; and TX DOT Commissioner Bruce Bugg.

Notable Dates

SEPTEMBER

September 10

Brown Bag Lunch & Lecture Series
Speaker: Rebecca Dodge
"Hazards That Have Affected Texas State Parks"
11:30 a.m. to 12:30 p.m.
Free admission. Drinks & dessert provided.
Sponsor: **Norma J. McGrew & Hahl Proctor Charitable Trust, Bank of America, N.A., Trustee**

September 12

Family Science Night: *Kitchen Science*
6:30 to 8 p.m.
6 p.m. Early Admission for MEMBERS ONLY
Hands-on Science Experiments & Activities
Free Admission
Sponsor: **Chevron**

September 14

Basin Burnout
Fourth Annual Permian Basin Association of Directional Drillers (PBADD) BBQ Cook-off Competition & Music Festival Fundraiser
Benefiting Reel Thanx, Hunt for Heroes, and Permian Basin Petroleum Museum.
For ticket information go to www.basinburnout.com.
Sponsor: **PBADD**

September 17

Building Bots: Robotics & Engineering FunLab
5:30 to 7:30 p.m.
Grades 3rd-6th
Pre-registration required. Go to www.pbpetro.org
Sponsor: **Occidental**

September 23, 30

STEAM Sprouts
9:30 to 10:30 a.m. OR 11:30 a.m. to 12:30 p.m.
Ages 4-5
Pre-registration required.
Sponsor: **Occidental**

September 24

Arlen Edgar Distinguished Lecture Series
Speaker: Fred Hiebert, National Geographic Archaeologist
"Trade Route Archaeology"
7 p.m.
Free ticketed event. Call for reservations or go online to www.pbpetro.org
Sponsor: **Abell-Hanger Foundation**

OCTOBER

October 1

Building Bots: Robotics & Engineering FunLab
5:30 to 7:30 p.m.
Grades K-2nd
Pre-registration required. Register at www.pbpetro.org.
Sponsor: **Occidental**

October 4

Petroleum Pioneers Reunion
9 a.m. to 1:30 p.m.
Jim Henry, Steve Melzer and Bob Trentham will be honored.
Program speakers: Tumbleweed Smith, Jacki Deason
Registration required. Contact Luanne Thornton at 432-683-4403 or ltornton@petroleummuseum.org.

October 7, 14, 21, 28

STEAM Sprouts
9:30 to 10:30 a.m. OR 11:30 a.m. to 12:30 p.m.
Ages 4-5
Pre-registration required. Register at www.pbpetro.org.
Sponsor: **Occidental**

October 8

Brown Bag Lunch & Lecture Series
Speaker: Mark Lancaster
"Lower Emissions Through Cost Cutting Technology"
11:30 a.m. to 12:30 p.m.
Free admission. Drinks & dessert provided.
Sponsor: **Norma J. McGrew & Hahl Proctor Charitable Trust, Bank of America, N.A., Trustee**

October 15

Building Bots: Robotics & Engineering FunLab
5:30 to 7:30 p.m.
Grades 3rd-6th
Pre-registration required. Register at www.pbpetro.org.
Sponsor: **Occidental**

October 31

Family Science Night: *Spookology*
6:30 to 8 p.m.
6 p.m. Early Admission for MEMBERS ONLY
Hands-on Science Experiments & Activities
Free Admission
Sponsor: **Chevron**

NOVEMBER

November 5

Building Bots: Robotics & Engineering FunLab
5:30 to 7:30 p.m.
Grades K-2nd
Pre-registration required. Register at www.pbpetro.org.
Sponsor: **Occidental**

November 12

Brown Bag Lunch & Lecture Series
Speaker: Sue Roseberry, *"Midland Storytelling Festival"*
11:30 a.m. to 12:30 p.m.
Free admission. Drinks & dessert provided.
Sponsor: **Norma J. McGrew & Hahl Proctor Charitable Trust, Bank of America, N.A., Trustee**

November 19

Discovering Hidden Treasures: Gem Appraisal Event
Speaker: Thomas Elliott, GJG, GIA, Catalyst Gems
6 to 8 p.m.
Free ticketed event. For reservations go to www.pbpetro.org.

November 19

Building Bots: Robotics & Engineering FunLab
5:30 to 7:30 p.m.
Grades 3rd-6th
Pre-registration required.
Sponsor: **Occidental**

DECEMBER

December 10

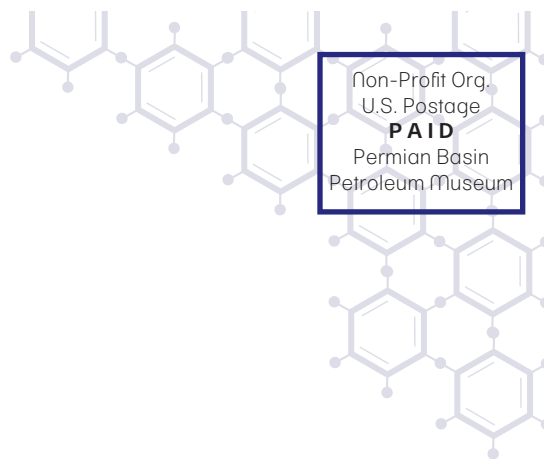
Brown Bag Lunch & Lecture Series
Music by Helen Cooley
"A Harpist Christmas"
11:30 a.m. to 12:30 p.m.
Free admission. Drinks & dessert provided.
Sponsor: **Norma J. McGrew & Hahl Proctor Charitable**

**For more information about any of these programs or events,
contact the Petroleum Museum at 432-683-4403 or www.pbpetro.org.**

PETROLEUM MUSEUM

Permian Basin Petroleum Museum, Library and Hall of Fame
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9/19

The Museum Store



FALL in love with lighted industry signs from the Petroleum Museum Store! Museum members always receive **15 percent off** all purchases. We are open from 10 a.m. to 5 p.m. Monday through Saturday and 2 to 5 p.m. Sunday, or shop online at pbpetro.org/shop anytime. **Shop with purpose** by supporting the Museum through purchases made in the Museum Store.

Our Mission: We will share the petroleum and energy story and its impact on our lives.