SHALE PLAYS: HOW TECHNOLOGY, GOVERNMENTS, REGULATORS, ACADEMIA, AND THE PUBLIC HAVE CHANGED THE WORLD’S ENERGY SUPPLY AND DEMAND EQUATION
SPE DISTINGUISHED LECTURE / PF&C P. 17

A STANDARDIZED AND REPLICABLE ASSISTED HISTORY MATCHING WORKFLOW
RESERVOIR P. 23

THE EVOLUTION OF THE RED FOLDER: AFE WORKFLOW
PETRO-TECH P. 13

EC-DRILL: A MANAGED PRESSURE DRILLING SYSTEM FOR FLOATING DRILLING RIGS
GENERAL MEETING P. 9

1ST ANNUAL SPE-GCS SCHOLARSHIP FUNDRAISING POKER TOURNAMENT
P. 33

SPEGCS.ORG
I recently had the privilege of being a “table coach” at the Women With Energy Summit, which was organized by the Offshore Energy Center Society. The SPE Gulf Coast Section sponsored a table of 10 at this event, and we hosted nine young ladies from our University of Houston and Rice Student Chapters to attend. This was followed by a limo bus trip down to Galveston for a VIP tour of the Offshore Energy Center, which is both an oilfield museum and an actual drilling rig.

Dr. Merna Jacobsen, the VP of Administration at Texas A&M, cracked us all up with her personal stories as she taught us how to network effectively. Then the 180 attendees participated in a Speed Coaching session, which involved successful women in the oil industry (table coaches) spending 10 minutes at four different tables answering various questions about their careers. This was followed by a panel discussion with three female energy executives (a rare breed in these parts) sharing their experiences and answering questions.

Here are some of the questions I got and the answers I gave during the Speed Coaching session:

**Q1:** Can you recommend a development activity that worked for you or allowed you to continue to grow and develop as a leader?

**A1:** Show up at all the professional organization meetings, raise your hand to volunteer, and deliver. Volunteer to be newsletter editor, then they’ll make you Secretary, and then, since you know everything that’s going on, they’ll make you Vice President and then President. This will train you in the interpersonal skills you need as a leader.

**Q2:** What tools or techniques do you use to stay organized?

**A2:** Develop a really good file system for Outlook and Documents with subfolders for topics or events or projects. Also use a really good file-naming system that has versions, dates, and reviewers’ initials so you can find the right version of a document that has been around the office a few times.

**Q3:** When the world is spinning a little too quickly, what action do you take to ground yourself?

**A3:** Sometimes I just take a day off as a Mental Health Day to putter around the house, get a massage, catch up on my home emails or Facebook, read the newspaper, and enjoy some peace and quiet.

**Q4:** What one behavior potentially derails a leader’s career?

**A4:** Don’t ever make somebody else look bad (even if they deserve it) because then you will have an enemy who will thwart your every move. Don’t burn any bridges in this industry, because you may end up working with or for that person on another project in the future.

These students really enjoyed the event we sponsored, as noted in their thank-you notes:

**“I would like to thank you for creating the opportunity for me and the other colleagues to attend the Women with Energy Summit. I can honestly say that I was able to take away actual methods and techniques for professional development and met a few awesome ladies. For this I am grateful.”**

- Bionka Edmundson

**“I just wanted to thank you for the wonderful time at the Women with Energy Summit. I loved the tour to the Ocean Star museum also. I can’t wait to take my family the next time they are in town.”**

- Fontaine Wilson

**“Last week you took us girls to this amazing event, Women With Energy Summit; it was great, came like a fresh air in between our studies... Thank you from the bottom of my heart.”**

- Zarina Hudaybergenova

We also got a nice thank-you note from Gretchen Byerts at the Bright Light Foundation, who received our check for $17,000 that was raised at our Sporting Clays Tournament (along with $10,000 for our own scholarship program). Bright Light is a 501-C-3 charity that assists fellow oil and gas employees and their families when catastrophic illness or injury occurs. This year the Foundation has 13 recipients.

“We are forever grateful for the donation this year and in all the years past. Please let us know how we might volunteer more to assist SPE Gulf Coast Section in your endeavors. Speaking for the rest of the board of directors, we thank you sincerely.”

- Gretchen Byerts, New Industries, member of Bright Lights Foundation Board

The Gulf Coast Section does so many good things for our community! It’s a pleasure to be able to share the feedback we get with you all.

Love, Jeanne
January, 2015

STUDY GROUPS

9 General Meeting 1.08.2015
EC-DRILL: A Managed Pressure Drilling System for Floating Drilling Rigs

11 Northside 1.13.2015
Fracturing with Little or No Water

13 Petro-Tech 1.13.2015
The Evolution of the Red Folder: AFE Workflow

15 Drilling 1.14.2015
Monthly Meeting / Luncheon

Upgrading Crude Oil Separators & Systems for Mature Oil Fields

17 Projects, Facilities & Construction 1.20.2015
Shale Plays: How Technology, Governments, Regulators, Academia, and the Public Have Changed the World’s Energy Supply and Demand Equation

19 Permian Basin 1.20.2015
Building a Dividend Growth Machine Using Energy Sector Equities and MLPs

21 Westside 1.21.2015
Unconventional Asset Development Workflow in the Eagle Ford Shale

23 Reservoir 1.22.2015
A Standardized and Replicable Assisted History Matching Workflow

25 Business Development 1.28.2015
Oilfield Services – Strategies to Survive and Prosper in 2015

26 HSSE-SR 2.03.2015
Global Decommissioning: Doing It Differently!

27 Projects, Facilities & Construction 2.04.2015
What You Need to Know About Attaining and Maintaining Accurate Fiscal and Allocation Metering System

COMMITTEES

29 Young Professionals 01.08.2015
Financial Strategies for Petroleum Engineers: Professional Event + Happy Hour

Auxiliary 1.09.2015

IN EVERY ISSUE

5 SPE-GCS November Membership Report
Volunteer Spotlight Andrea (Hersey) Rowe

6 Then & Now Buddy Woodroof

35 Student Chapter Section TAMU-SPE

37 Event Recap Young Professionals

38 SPE-GCS Directory

SPE-GCS 1st Annual Texas Hold ’Em Scholarship Fundraiser

SPE-GCS Scholarship 2015-2016 Application

BOARD OF DIRECTORS MEETING

THURSDAY JANUARY 15TH / 7:30 AM TO 10:30 AM

Location SPE HOUSTON OFFICE
10777 Westheimer Rd., Suite 1075, Houston, TX 77042

Event Contact SHARON HARRIS
713-457-6821 / 713-779-4216 FAX / sharris@spe.org
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SPE-GCS MEMBERSHIP REPORT
November 2014

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| Total Paid/Unpaid | 18,501 | 3,147 | 18,066 | 3,245 |
| % Paid            | 85.5%  | 84.8% |        |       |

Each year the Houston Engineer Week Committee honors the accomplishments of young engineers in the Greater Houston Area. The Society of Petroleum Engineers Gulf Coast Section (SPE-GCS) is proud that Andrea (Hersey) Rowe will be honored as the 2015 Young Engineer of the Year during Engineer Week in February.

Andrea (Hersey) Rowe is Technical Sales Manager for Momentive’s Oil & Gas Group based in Houston, TX, where she manages the proppants, performance additives, and production chemicals product lines. Her responsibilities include new product commercialization as well as global technical support and marketing. Rowe joined Momentive in 2008 as a Chemist in the Research and Development Technology group. Over the years she has held various roles in technology, supply chain, and sales.

Rowe graduated from Baylor University with a B.S. in Biology and a B.S. in Forensic Science. She is a Six Sigma Green Belt and Lean Certified. Also, she recently completed her Master’s degree in Petroleum Engineering from Texas A&M University.

Rowe has been highly involved in the Society of Petroleum Engineers, holding many leadership roles in the Gulf Coast Section as well as positions at the international level. Her efforts include the SPE Ambassador Lecture Program, Junior Achievement/IPAA Teacher, the SPE Student Summit for engineering students aspiring to apply their training, and the SPE-GCS Roughneck Camp helping young professionals understand the application of engineering in the oil field. She has also been selected to be a Next Generation Project Texas Fellow from University of Texas to discuss, debate, and influence critical policy areas relating to energy.

Please congratulate Andrea and thank her for her contributions to the SPE and the Houston area.
The City of Los Angeles prepares to receive bids for drilling under Santa Monica Bay, tapping the tidelands within one mile of shore via whipstock drilling.

The Russians step up their courtship of Iranian oil officials and express interest in possibly importing both oil and gas.

After increasing oil production from 600 bbl/day to 2,000 bbl/day, via hydraulic fracturing, in Warren County, Pennsylvania in the Titusville area, operators prepare to fracture wells near the historic Drake well.

West Texas’ Delaware basin, long short on gas, emerges as the next major gas supply area in the country. (What about Wolfcamp oil?)

**East Texas crude oil - $3.10/bbl; U.S. active rig count – 1,469**

Chinese and Soviet officials submit feasibility studies regarding a joint venture coal slurry pipeline in China’s Shanxi Province, which will feed two 300,000 kw generating units by the mid-90’s. (And they wonder why their air quality is amongst the worst on the planet.)

Airplanes are not the only vessels to be carrying “black boxes,” as the Coast Guard reports plans to test “black box” navigation monitors to track oil tankers in Alaska’s Prince William Sound.

Field developments off Newfoundland (PetroCanada/Chevron/Gulf/Mobil) and Nova Scotia (Lasmo) highlight growing interest in North Atlantic exploration.

Pemex, Spain’s largest crude supplier, expresses interest in purchasing 10% of Spain’s state-controlled oil company, Repsol.

**West Texas Intermediate crude oil - $22.73/bbl; U.S. active rig count – 1,019**

Two important offshore fields come on stream, namely, Mad Dog, with its capability of processing 100,000 bbl/day of Gulf of Mexico crude oil and Arthur, with its capability of producing 110 MMcf/day of North Sea gas.

LNG plans are through the roof, with new terminals planned by ConocoPhillips and Sempra Energy off Louisiana, ChevronTexaco off Baja California, and the China National Offshore Oil Corp. (CNOOC) at Shanghai.

Sudan signs an agreement halting 22 years of civil war, thus enhancing its potential of becoming a major exporter of crude oil.

Congress presses the U.S. Government Accountability Office to undertake a study to assess the vulnerabilities of LNG vessels and oil tankers to terrorist attacks.

**Light sweet crude oil - $44.08/bbl; Natural gas - $5.92/MMbtu; U.S. active rig count – 1,242**

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**THE REST OF THE YARN**

This month we continue our look back at the life and times of industrialist and philanthropist Andrew Carnegie.

A formative event in Carnegie’s life as an American occurred in 1856 when he purchased 10 shares of stock in a blue-chip company called Adams Express. He soon received a dividend check for $10. “Eureka!” he cried, glancing at his stock certificates. “Here’s the goose that lays the golden eggs.” It was the first time he had received money from an investment—his first moment of pure capitalism. It would not be his last. Serving as a transportation specialist for the Union during the Civil War, he invested his earnings in oil, coal, and iron companies. In 1863 he totaled up his portfolio. Largely because of dividends, he made $42,260 that year—that at a time when the president of the United States earned $25,000 a year. “I’m rich!” announced the formerly poor boy.

Money felt good to him. But chasing the almighty buck was not his sole passion. Andrew Carnegie had an idealistic side to his nature. Much of this can be traced to his youth in Scotland, which featured intense political discussions encompassing history, literature, the bravery of Robert the Bruce, the humanitarianism of Robert Burns, and above all, the imperative need to make the world a better place. In December 1868, when he was 33, Carnegie wrote a most interesting note to himself. He told himself to resign from business within two years. To pursue riches...
any longer, he said, would “degrade me.” What he most wanted to do was get an education, become a newspaper publisher, and help others. But many years would pass before he committed to his idealism. He was just too talented at being a tycoon.

As the U.S. economy began to explode after the Civil War, Carnegie became interested in the growing business of steel. By the 1870’s he was convinced he could manufacture the material for less than other entrepreneurs, and he set out to do so. He built his first steel plant on the outskirts of Pittsburgh in 1875 when he was 40 years old, and he organized the place brilliantly.

Next month, Andrew’s strengths and weaknesses as a pioneering industrialist become apparent.

Marathon Oil increases productivity in Eagle Ford Shale well by 21%.

The BroadBand Sequence* fracturing technique effectively stimulated perforation clusters that would not have produced by conventional techniques. Enabled by a proprietary engineered composite fluid of degradable particles and fibers, the BroadBand Sequence technique increased production by 21% over 115 days.

If you would like to participate in this month’s quiz, e-mail your answer to contest@spe.org by noon, January 15. The winner, who will be chosen randomly from all correct answers, will receive a $50 gift card to a nice restaurant.

*Mark of Schlumberger. © 2015 Schlumberger. 14-ST-0137
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EC-Drill: A Managed Pressure Drilling System for Floating Drilling Rigs

This presentation will introduce the new EC-Drill MPD system and the history of its development, explain its principles of operation, and show major components along with their functions. This presentation will also provide a brief examination of integrating the system into a floating drilling rig along with the process to accomplish the integration in a safe and expedient manner.

This new Managed Pressure Drilling (MPD) system for floating drilling rigs has drilled four wells as of November 2014, with two more wells in progress. Two of the wells were multi-lateral wells with three legs each. This MPD system uses pumped riser technology to control bottom-hole pressure and optimizing well bore pressure profiles. The system also compensates for Equivalent Circulating Density (ECD). The benefits of the system are numerous, but include improved safety and early influx/loss detection. Active management of well bore pressures allows drilling through narrow pore/fracture pressure margins, extending the length of horizontal laterals, reducing mud losses and drilling through depleted or other difficult formations.

Case histories of the most recent operations will also be shown, including operations on the Norwegian continental shelf and in the Gulf of Mexico. The case histories will cover the reason EC-Drill was selected for the particular environment, benefits obtained, and use of the system in post-kick operations.

JOHN H. COHEN

John H. Cohen has worked in research and development in the oil industry since his graduation from the Colorado School of Mines. His degree in Mineral Engineering Physics has given him a unique view and allowed him to work on a variety of different projects over the past 41 years. Mr. Cohen has significant experience in developing and improving downhole tools. He has also worked on subsea equipment. Mr. Cohen was director of The Drilling Research Center, where he developed methods and apparatus for testing oil field equipment, downhole tools and drilling concepts, including the testing of fluids for a unique method of dual gradient drilling.

JOHN-MORTEN GODHAVN

John Morten graduated with a MSc in 1992 and a PhD in 1997, both from the Department of Engineering Cybernetics at the Norwegian University of Science and Technology (NTNU). From 1997 to 2001 he held a position as a project engineer at Kongsberg Seatex, before he joined Statoil as a principal researcher in Trondheim, Norway. Since August 2013, he has worked as an expat in Statoil’s office in Houston. He also holds a position as an Adjunct Professor in Drilling Automation at the Dept. of Petroleum Engineering and Applied Geophysics, NTNU, Norway.
Whether you’re exploring a basin, producing a well or completing a shale play, time is money. That’s why Weatherford Laboratories brings a suite of formation evaluation technologies right to the wellsites. Utilizing mud gas and cuttings, these technologies provide detailed data on gas composition, organic richness, mineralogy and chemostratigraphy in near real time. As a result, operators now have an invaluable tool to assist with sweet spot identification, wellbore positioning, completion design and hydraulic fracturing. We call it Science At the Wellsite. You’ll call it money well spent.

When time is money, Wellsite Geoscience is money well spent.

Whether you’re exploring a basin, producing a well or completing a shale play, time is money. That’s why Weatherford Laboratories brings a suite of formation evaluation technologies right to the wellsites. Utilizing mud gas and cuttings, these technologies provide detailed data on gas composition, organic richness, mineralogy and chemostratigraphy in near real time. As a result, operators now have an invaluable tool to assist with sweet spot identification, wellbore positioning, completion design and hydraulic fracturing. We call it Science At the Wellsite. You’ll call it money well spent.

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Formation Evaluation ▪ Wells Construction ▪ Completion ▪ Production

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Fracturing with Little or No Water

The projected self-sufficiency of energy in North America is due to the success of horizontal wells and multi-stage hydraulic fracturing. The US Environmental Protection Agency estimates that 140 billion gallons of water are needed annually for hydraulic fracturing operations in the United States alone. While that is just a fraction of the total US water usage, our industry is becoming a lightning rod in the water use debate. Add to that the growing concern about burgeoning truck traffic on local roads and the seismic activity often blamed on high-pressure wastewater injection into disposal wells, and you have an environment ripe for regulation proliferation. Additionally, the success of these technologies in North America is raising interest to develop unconventional resources in various parts of the world where fresh water resources are not readily available. The presentation will describe technologies presently available for fracturing applications using lower-quality water (produced water, sea water, etc.), fluid systems that minimize or eliminate water (energized or foamed water-based fluids to reduce water usage by 30 to 85 percent), and systems based on non-aqueous liquids, or even no liquids at all. The takeaways from this talk will focus on opportunities to use hydraulic fracturing to develop energy resources with very little or no water.

Dr. D.V. Satya Gupta

Dr. D.V. Satya Gupta is Business Development Director at Baker Hughes Pressure Pumping Technology. He has over 33 years of oil field chemical product development and applications experience. He is on the editorial board and was on the editorial board of JCPT from 1995 to 2002. He has published over 60 papers and is listed as an inventor on over 130 international and US patents. He has a Doctor of Science in Chemical Engineering from Washington University, St. Louis, Missouri. He was the recipient of the Baker Hughes Life Time Achievement Award in January 2013.
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• Ensure Wellbore Integrity
Historically, AFEs have been thought of as a piece of paper circulated as a formality to allow executives to approve or reject, based on their merits and available budget. Early AFE workflows centered on moving a folder or packet of papers around the company. A common occurrence was the walk around the office looking for a lost or stuck AFE. Many times, AFEs are found at one desk creating the dreaded bottleneck. The introduction of spreadsheets added some efficiency but didn’t stop these bottlenecks.

Early AFE systems, like AFE Navigator, concentrated on improving efficiencies, allowing AFEs to move faster. Adding integration to accounting and well management systems removed double data entry. Advanced reporting created visibility to find and eliminate bottlenecks. Now, with the introduction of unconventional resources, these efficiencies are a way to add value. Operators need to be able to continually add efficiency to be competitive. The efficiency in spending capital is vital. Oil and gas companies are currently looking at more efficiency using mobile platforms.

AFE systems, however, have grown to be much more than an approval document. With the increasing importance of SOX compliance, business rules around AFEs and the entire capital process become paramount. These systems have to transform beyond easy and efficient approval systems to systems of record with configurable, auditable business rules. Is the right process being followed? Have we created all the necessary supplements in a timely manner? If we are audited, can we show the capital approval process is properly controlled? These are all important questions in modern AFE systems.

TIM LOSER
Tim Loser has 20+ years in the oil industry primarily working with reservoir engineering software. Currently, Tim is the VP of US Operations at Energy Navigator®, a company that specializes in software to improve capital tracking using AFE Navigator® and reserves management with Value Navigator®. He joined Energy Navigator to help introduce the US oil and gas market to these innovative products. Tim is a graduate of Texas A&M University with a degree in Petroleum Engineering. Prior to joining Energy Navigator, he served as an oil and gas specialist at Spotfire. He also served as a product expert for ECLIPSE, OFM and other engineering software at Schlumberger.

EVENT INFO

Tuesday 1.13.15
11:30 AM TO 1:00 PM

SPEAKER
Tim Loser
VP US Operations
Energy Navigator

LOCATION
Sheraton Brookhollow
3000 N Loop W Fwy
Houston, TX 77092

EVENT CONTACT
Jessica Morgan
281-685-0594
jmorgan@blackstoneminerals.com

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ExxonMobil’s Stabilizer Selection Guidelines

Paul will share the Stabilizer Selection Guidelines that ExxonMobil has developed to improve their drilling operations as a result of stuck pipe and near miss events.

The drilling objectives are to:
- Drill a round, ledge-free hole, without patterns, with minimum vibration, minimum unplanned dogleg severity, that reaches all directional and geologic targets.
- Do this in one run per section where ROP is unconstrained by the bit or BHA.
- Drill ahead, with no noticeable stabilizer torque or drag.
- Trip In and Out on elevators (no flow required) in all wells, including high-angle holes, with no accumulation of cuttings on the stabilizers.
- Trip past ledges and hole irregularities equal to full blade depth without the need for rotation.

The presentation includes guidelines on taper angle, wrap angle, bypass area, stabilizer pad diameter, stabilizer blade pad pressure, fabrication methods, material specifications, and transition radii to help accomplish these objectives. This document has been shared with all major BHA vendors for feedback, but it is still a work in progress and a draft. Paul will also share some examples of what not to put in the ground (if you want to get the BHA back out).

Paul Pastusek is a Drilling Mechanics Advisor in the Drilling Technical Group at ExxonMobil Development Company. His interest and areas of expertise are in drill string dynamics, steerable systems, borehole quality, bit applications, cutting mechanics, rig instrumentation and control systems, and failure analysis. He has a BSME from Texas A&M University and a MBA from the University of Houston. He is a Registered Professional Engineer, holds 30 US patents and has written 11 papers on drilling technology. He is a member of the ExxonMobil Limiter Redesign team and is committed to relentless redesign to the economic limit of performance.
Upgrading Crude Oil Separators & Systems for Mature Oil Fields

The presentation considers original end of field life design constraints on crude oil separators, and in a logical progression, illustrates how hidden capacity in a separator can be identified and used to upgrade the separator, both by maximizing the use of available volume in the separator and also by the use of upgraded process internals.

The presentation also describes the methods available for installing upgraded internals covering clamp type internals through to full vessel modification, including fitting of new process nozzles. Aspects including mechanical design evaluation, HSE compliance requirements and chemical treatment considerations are also covered.

SUMMARY AND CONCLUSIONS:
• For crude oil separators, associated equipment and systems, the late-life field operation design case (usually maximum water production) is constrained by the economics of initial facility development budgets.
• Once this design point is reached, achieving both produced water flow rate and quality (oil-in-water content) requires upgrade of the separators and equipment.
• Additionally, tie-ins of satellite fields can require upgrade of crude oil separators and associated equipment and systems.
• This presentation has demonstrated a logical approach to investigating available capacity once original design point has been reached.
• While this presentation has focused on crude oil separator upgrades for handling late life field production, it must be remembered that such upgrades have to take a holistic perspective and consider the complete crude oil, hydrocarbon gas and produced water processing system requirements. It is only by considering the complete production facilities that successful late field life production can be correctly designed for maximizing of hydrocarbon production and recovery.

Graeme Smith

Graeme Smith is a process engineer with 8 years of experience in the upstream oil and gas industry. He has a Bachelor’s degree in Chemical Engineering (with Honors) from Monash University, Melbourne, Australia. Graeme spent 5 years in the UK working in an engineering consultancy on asset integrity projects as well as FEED through detail design and construction of a new upstream oil and gas facility in the North Sea.

For the last 3 years Graeme has been with Maxoil, working on a variety of separation and produced water troubleshooting and optimization projects for facilities located in the GoM, Alaska, Nigeria, Algeria, Middle East, Mexico and SE Asia. Projects have extensively looked at optimization of existing equipment through process modelling, site surveys, fluids and solids characterization and the use of process diagnostics.
The global shale revolution is just beginning. Production from US shale reservoirs has increased from 2.5 Bcf/d to over 25 Bcf/d since 2007, illustrating the viability of this prolific new source of long-term gas supply. Other countries will undoubtedly use the knowledge developed in North America to jumpstart their own shale plays. Although technical advancements are largely responsible for unlocking the potential of shale gas, the industry's coordination with a broad set of stakeholders arguably have equal, and perhaps more influence on implementation of new shale developments. As such, they will increasingly impact our industry's ability to more fully develop these resources. This presentation focuses on key technological advancements that drive shale gas development, but also the important aspect of how our industry is working with governments, regulators, academia, and the public more collaboratively to best maximize the immense benefits from this opportunity, while fostering the use of best practices.

**JOSEPH H. FRANTZ, JR.**

Joseph H. Frantz, Jr. is the VP of Engineering Technology with Range Resources Corporation. He started working on shale reservoirs in 1984 and has been involved with studies on many shale fields across the US. Joseph has worked in every facet of upstream development. He has authored or co-authored more than 40 publications and taught an industry school on Developing Shale Reservoirs. He has served on numerous Technical Committees within SPE, Chaired the Pittsburgh PA SPE Section, and Co-Chaired a Regional SPE Meeting. He earned a BSc in Petroleum and Natural Gas Engineering from Pennsylvania State University in 1981.
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Energy Prospectus Group (EPG) is a networking organization for private investors that are heavily invested in the energy sector. Our members are geologists, engineers, landman, financial professionals and small business owners. Many of them have decades of experience in the energy industry.

EPG is focused on the fundamentals. Our members have access to individual company profiles and forecast models plus several Watch Lists that are housed on this website. We also have numerous networking events throughout the year where our members and guests get to meet the management of our favorite companies. Our Forum gives members an opportunity to share their ideas on individual companies, the markets and trends in the industry.

**DAN STEFFENS**

Dan Steffens is the founder and current President of the Energy Prospectus Group (EPG) based in Houston, Texas. EPG currently has over 500 members, primarily high net worth individuals that are heavily invested in the energy sector. EPG publishes a monthly newsletter and over 100 profiles each year on publicly traded energy companies. For more information on EPG go to energyprospectus.com.

Mr. Steffens is a 1976 graduate of Tulsa University with an undergraduate degree in Accounting and a Masters in Taxation. Mr. Steffens began his career in public accounting, becoming licensed as a CPA in 1978. After four years in public accounting, he transitioned to the oil and gas industry in 1979 where he served as the CFO for Investek, Inc. in Wichita Falls, Texas and then as CFO for Oklahoma Petroleum Management in Tulsa, Oklahoma before joining Amerada Hess Corporation in November of 1983 as the Tax Manager for their United States E&P Division. After a series of promotions, he served as the Hess Corp. United States E&P Division Controller in Houston, Texas from 1994 to 2001.

In addition to forming the Energy Prospectus Group in 2001, Mr. Steffens provides consulting services to several oil & gas industry companies in the areas of taxation, financial systems & controls and restructurings. He is currently on the board of Propell Technologies Group, Inc., which does business in the United States as Novas Energy, USA.

Mr. Steffens has over 30 years experience in the oil & gas industry. He has a strong foundation in financial analysis, operational accounting and exceptional achievements in start-ups, public accounting, and upstream oil and gas companies. He has demonstrated an ability to improve bottom-line results through attention to accounting systems, taxes, and financial controls. He is skilled in forging creative partnerships and alliances that have fueled business growth through investments and other capital infusions.
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Unconventional Asset Development Workflow in the Eagle Ford Shale

The Eagle Ford shale is recognized as the largest oil and gas development in the world, based on capital investment (Wood Mackenzie, 2013). Development typically consists of horizontal wells stimulated with multiple hydraulic fracture stages. Almost $30 billion was spent developing the play in 2013, and optimizing the completion designs and spacing of these wells can result in large rewards for the companies involved. This paper presents a pragmatic integrated workflow that was used to optimize the development and to guide critical decisions in the Black Hawk field, Eagle Ford shale. Geoscientists and reservoir and completion engineers worked collaboratively to identify the optimal completion designs and well spacings for the development’s focus areas. Multiple simplistic simulation models were history-matched to existing producing wells. The resulting calibrated reservoir scenarios formed the basis of optimization studies for development drilling and down-spacing. Completion design parameters, including fracture stage length, perforation clusters per stage, and landing point for the laterals, were evaluated in hydraulic fracture models. The resulting fracture geometries were simulated and the optimum completion design and well spacing determined for each area. The optimal development was shown to vary by region, due to changing reservoir, fluid and geomechanical properties. The use of multiple subsurface realizations, spanning an appropriate range of uncertainty, was critical to the success of this study. Economic analysis across a range of potential outcomes enabled robust development decisions to be made.

HUNTER WATKINS

Hunter Watkins has 38 years of industry experience, 35 years with Halliburton and Pinnacle and one year with The Western Company of North America, primarily focused on tight gas and unconventional plays. For the past 2.5 years he has served as Completions Advisor for BHP Billiton, focusing on the Eagle Ford shale. He is a Professional Engineer in Texas and a graduate of the University of Texas at Austin.
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José Villa is a senior reservoir engineer in the Global Water Flood Deployment team at Shell International E&P in Houston, TX. He is responsible for the deployment of assisted history matching technologies in Shell fields worldwide. Before this position, he was a reservoir engineer in the Dynamic Reservoir Modeling team providing workflow consulting and support on Shell reservoir simulation workflows. Prior to joining Shell in 2007, José was a reservoir engineer at PDVSA Intevep where he conducted reservoir modeling studies for a number of fields in Venezuela. José holds a Bachelor’s degree in Petroleum Engineering from Central University of Venezuela (1999), and a Master’s degree in Petroleum Engineering from Stanford University (2003). José has served on the SPE-GCS Reservoir Study Group since 2011.

A Standardized and Replicable Assisted History Matching Workflow

Assisted History Matching (AHM) is a systematic procedure of modifying parameters of a reservoir model to reproduce its dynamic response. Unlike traditional history matching (HM), where non-systematic manual adjustments are made on a few engineering parameters using a single model to match the production data, AHM is part of an integrated study where consistent engineering and geological modifications are made to a reservoir model with the aid of efficient optimization techniques. This allows incorporation of multiple data types, such as production and 4D seismic data, while also providing a vehicle for uncertainty assessment.

During the last decade, Shell has developed a number of methodologies to computer-automate the process of updating the large-scale reservoir parameters. These methodologies have been standardized and replicated in multiple fields and include assisted parameter estimation, which uses MCMC sampling techniques with experimental design-based proxies, and model maturation, which uses (adjoint) gradient-based updates to identify and correct (major) omissions (under-modeling) in the static and dynamic model. In this presentation, these methodologies will be presented and the results of their application in some field examples will be demonstrated.
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<table>
<thead>
<tr>
<th>Feature</th>
<th>MM 200</th>
<th>Slickwater FR</th>
<th>Guar</th>
<th>MM 301</th>
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<td>60 days</td>
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Oilfield Services – Strategies to Survive and Prosper in 2015

Join us at the Four Seasons Hotel as our panel of experts from the industry’s leading oilfield service companies discuss a look back on 2014’s key issues, expected trends for 2015, and strategies that will be key to future growth.

Service companies have been and remain a key component to each operator’s success across the world by pressing the envelope on technological advancement to unlock production that was previously inaccessible. These groups are leading the way with an acute focus on innovation, operational excellence, and safety. Recent announcements of pending mergers combined with falling oil prices have created a sense of uncertainty in the market and posed questions about what strategies service companies should employ in 2015 to ensure their success and their customers’ success.

How are OFS preparing for changes in market prices and how will this affect activity levels? What is the next step in innovation and how will that impact the industry? How has the unconventional boom in the United States shifted the global market focus?

We welcome you to join us for this informative discussion, as well as the fellowship and networking of the popular social hour at 5:00 pm.

**PATRICK TALLEY**
Patrick has 32 years of experience in sales and marketing to the upstream sector. He started at Landmark Graphics in the early 90’s and moved to various software startups to Halliburton and Baker Hughes. He held sales leadership roles at all of those companies.

**FRANK MITTON**
Before joining Schlumberger in 1996, Frank had assignments in and outside of the US with Amoco, Marathon and Gulf Canada Resources in drilling, operations and business management. Since joining Schlumberger, Frank has held a number of positions focused on the growth and delivery of Schlumberger’s project management and risk-based services. Frank is a graduate engineer, a member of SPE and lives in Houston.

**BILL HEAD**
Bill Head is an advanced senior technologist/manager with extensive experience in both domestic and international exploration and exploitation. He has served in technical leadership and officer positions with a variety of E&P and service company organizations. Bill has degrees in Geophysics, Geology, an MBA and a JD in Intellectual Property. He is an active member of SPE, SEG, and AAPG.
How do you go about decommissioning three interconnected offshore platforms in the UK North Sea, comprising almost 100,000 tonnes of topsides and 40,000 tonnes of jackets, together with abandoning over 100 wells and hundreds of kilometers of pipelines?

Carefully, and unless you want to break the bank: differently! There are three important “C’s” to consider: Compliance, Collaboration and Contracting.

If you are unable to attend, this event will also be available as a webinar.

**JIM CHRISTIE**

Jim is currently the Global Decommissioning Projects Manager for Marathon Oil Corporation, responsible for the company’s asset retirement portfolio, onshore and offshore, across the globe, based in Houston, TX. Jim joined Marathon in 1984 and has worked mostly on upstream and downstream capital construction projects around the world in the Middle East, SE Asia, Japan, Africa, India, Europe and North America.

Prior to his current position, Jim was responsible for project assurance for capital construction and decommissioning projects. Jim’s areas of focus have included strategic planning, project management, risk management and quality management.

Jim has a BS in Construction from Robert Gordon University, a BA in Management from the Open University, an MBA from Heriot-Watt University and an MSc in Project Management from Aberdeen University.
What You Need to Know About Attaining and Maintaining Accurate Fiscal and Allocation Metering Systems

This presentation will provide an insight into Shell’s best practices for selection of fit-for-purpose meters, and fit-for-purpose maintenance, operation and calibration employed to ensure that the minimum level of accuracy and data integrity is maintained over the life cycle of the field.

This session is scheduled as a one-hour presentation followed by a thirty-minute Q&A session. We fully expect a large turnout, so please book early and we hope you try to attend all four sessions. The PF&C Study Group appreciates the support of our SPE GCS members and we look forward to seeing you there.

DEL MAJOR

Del Major works for Shell Exploration and Production Company as the Liquid Hydrocarbon Measurement Advisor for Upstream Americas (UA) Unconventionals. He began his career with Getty Oil Company in 1980 and through several mergers and acquisitions over the past 34 years has held various measurement positions with Texaco Trading and Transportation Company, Texaco Pipeline Company, Equilon Pipeline Company and Shell Pipeline Company. Del is a former Chairperson for the American Petroleum Institute’s (API) Committee on Petroleum Measurement (COPM) and Sub-Committee Chairperson of the Committee on Measurement Quality (COMQ). Del currently serves as the Vice Chairperson for API’s Committee on Production Measurement and Allocation (CPMA) and Chairperson of the 2015 International School of Hydrocarbon Measurement’s (ISHM) Executive Committee.

SPRING LECTURE SERIES

The Project, Facilities and Construction Study Group is pleased to announce our Spring Lecture Series for 2015. The series of lectures will focus on Metering Systems and the challenges our industry faces when selecting and designing the optimum field development plan. A series of four sessions have been selected to provide the attendee with an understanding of the factors and challenges that influence the selection and design of meters and how maintenance and calibration affect reliability and accuracy. In the sessions, a summary of the main characteristics and design considerations will be provided, including pros and cons. In addition, selected recent innovations and future challenges will be discussed. In many cases, lessons learned from recent projects regarding design, installation and operation will be discussed.

SESSION 1 / 2.4.15 / 4:30 - 6:00 PM
Liquid Metering Selection
Speaker: Del Major, Liquid Measurement Advisor, Shell E&P

SESSION 2 / 2.11.15 / 4:30 - 6:00 PM
Liquid Metering Provers
Speaker: Tony Petitto, Technical Services, FMC Measurement Systems

SESSION 3 / 2.18.15 / 4:30 - 6:00 PM
Multiphase Metering
Speaker: Lars Farestvedt, General Manager, Multi Phase Meters, an FMC Technologies business unit

SESSION 4 / 2.25.15 / 4:30 - 6:00 PM
Gas Metering
Speaker: Dan Hackett, Director BD, Daniel Measurement and Control Division of Emerson

LECTURE SERIES NO.1

Wednesday
2.04.15
4:30 PM TO 6:00 PM

SPEAKER
Del Major
Liquid Measurement Advisor
Shell E&P

LOCATION
Wood Group Mustang
Clydesdale Building Events Room
17320 Katy Freeway
Houston, TX 77094

EVENT CONTACT
Brad Nelson
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Financial Strategies for Petroleum Engineers: Professional Event + Happy Hour

Interested in learning how to handle your finances? Join us as Chris Wilbur and Davin Bell discuss student loans, asset protection strategies, employee benefits in the oil industry, investment basics, and home buying! It’s a great way to kick off the 2015 new year with wine tasting, dinner, networking, and learning how to take care of your finances.

5:30 pm  Check In
6:00 pm - 7:00 pm  Finance Presentation with Davin Bell
Dinner and Drinks provided for 30
7:00 pm - 8:30 pm  Networking and wine tasting - everyone welcome

Note: Drinks, dinner, and professional event will be provided to those who RSVP online. Thanks to our sponsors North Star Consultants for hosting this event.

Auxiliary

The Auxiliary will not have a formal luncheon in January. There will be an informal lunch with separate checks. Please let us know if you think you can join us so we know how big a table to reserve.

On October 10, the SPE Auxiliary attended an event at Brookwood Community Cafe near Brookshire, followed by lunch at the café. The Auxiliary presented a check in the amount of $450 to the Brookwood Community.

The SPE Auxiliary welcomes guests and new members. For further information, please contact our President, Nancy Giffhorn, at rgiffhorn@AOL.com or at 281-360-4631.
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- Be a U. S. citizen
- Completely fill out the scholarship form and turn in by deadline
- High school transcripts
- Activities, awards and honors
- SAT and/or ACT score
- Professional Reference letters
- Financial need (if applicable, not required)
- Short essay (approx. 500 words)

Process:
- Scholarship committee reviews each application
- Selected applicants are interviewed in the second round (04.15)
- After the interviews, the scholarship committee meets and collectively decides the 2015-16 scholarship recipients (05.15)

DEADLINE
02.13.15

APPLICATION & QUESTIONS

gcs-scholarship@spemail.org

INSTRUCTIONS

ttp://spegcs.org/scholarshipapplication-instructions

NOTE
Each 2015-16 first-time scholarship recipient may be eligible for a summer internship with an oil & gas company depending on availability.

SAVE THE DATE

OilSim Scholarship Fundraiser

SPE is kicking off a new annual scholarship fundraiser that features a fun-filled day of simulated oilfield decision-making using the OilSim software training program graciously shared with SPE for this event by Schlumberger. Mark your calendars for April 10, 2015! We are seeking at least 8 sponsored teams of 4 participants for the event, so if you are interested in participating in this inaugural event (and getting discounted hands on training), please contact Kristin or Lindsey at 281-453-6037 to secure your spot! For entry and sponsorship forms, email Kristin at kobenhaus@frontline-group.com.

What happens at the OilSim Competition Fundraiser you might ask? Participants are grouped in teams and each team acts as a virtual petroleum company in the business simulation OilSim. The team challenge is to explore and discover oil and gas, then create and implement a plan for developing the field, and finally operating it until it is abandoned. An experienced OilSim instructor guides the participants through the process.
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SPE-GCS 1st Annual Texas Hold ‘Em Scholarship Fundraiser

Tournament registration will begin at 5:30 PM, followed by a Texas BBQ buffet dinner. Cash bar will be available. Tournament will begin at 6:00 PM. Eliminated players may stay and watch the rest of the tournament. Blackjack and craps tables will be available for guests and eliminated players. The award ceremony is planned for 9:30 PM.

Participation is open to members, nonmembers, guests, and friends of SPE and Hess Club, but poker professionals are not allowed. Entries are accepted on a first-come, first-served basis. Please register in advance as seats are limited. Guest Fee is for attendees who do not play in the poker tournament itself, but may play at the blackjack table and craps table.

Please support this new scholarship fundraiser and have some fun! Register online to reserve your seat today!

QUESTIONS
Akhan Mukhanov
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832-341-3733

LOCATION
Hess Club
5430 Westheimer Road,
Houston, TX 77056

FEES
Tournament Fee
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$60 After 2/28

Guest Fee
$25 Early Bird
$30 After 2/28

Fees are non-refundable after registration deadline: March 26th, 2015

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Proceeds from the sponsorships of this tournament benefit the SPE-GCS Scholarship Fund, which has awarded more than $3 million in scholarships since 1963 to local engineering students.

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Post-event coverage in the SPE-GCS Newsletter

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Includes 4 tournament participants
Banner under the bar counter in recreation room
Logo on the event page on the SPE-GCS website
Verbal mention at the event
Post-event coverage in the SPE-GCS Newsletter

SILVER SCHOLARSHIP SPONSORS
$500
Includes 2 tournament participants
Logo on the event page on the SPE-GCS website
Verbal mention at the event
Post-event coverage in the SPE-GCS Newsletter

Saturday
March 28th

QUESTIONS
Akhan Mukhanov
Akhan.Mukhanov@gmail.com
832-341-3733

LOCATION
Hess Club
5430 Westheimer Road,
Houston, TX 77056

FEES
Tournament Fee
$50 Early Bird
$60 After 2/28

Guest Fee
$25 Early Bird
$30 After 2/28

Fees are non-refundable after registration deadline: March 26th, 2015

SPONSORSHIP OPPORTUNITIES
Proceeds from the sponsorships of this tournament benefit the SPE-GCS Scholarship Fund, which has awarded more than $3 million in scholarships since 1963 to local engineering students.

DIAMOND SCHOLARSHIP SPONSORS
$5,000
Includes 8 tournament participants
Visual media and banners in the Texas Ballroom
Logo on the event page on the SPE-GCS website
Verbal mention at the event
Post-event coverage in the SPE-GCS Newsletter

PLATINUM SCHOLARSHIP SPONSORS
$2,500
Includes 6 tournament participants
Foam board on easel at the registration table
Logo on the event page on the SPE-GCS website
Verbal mention at the event
Post-event coverage in the SPE-GCS Newsletter

GOLD SCHOLARSHIP SPONSORS
$1,000
Includes 4 tournament participants
Banner under the bar counter in recreation room
Logo on the event page on the SPE-GCS website
Verbal mention at the event
Post-event coverage in the SPE-GCS Newsletter

SILVER SCHOLARSHIP SPONSORS
$500
Includes 2 tournament participants
Logo on the event page on the SPE-GCS website
Verbal mention at the event
Post-event coverage in the SPE-GCS Newsletter
The 2015 Student Summit:

Presented by Texas A&M, and University of Oklahoma SPE Student Chapters

The SPE Student Chapters at Texas A&M University, and the University of Oklahoma will be co-hosting the fourth annual Student Summit for petroleum engineering students. The 2015 Student Summit will be held in Oklahoma City, Oklahoma from February 4-6. The three-day conference will gather 250 students from the United States and abroad. Lectures, panel sessions, exhibitions, and networking activities will enhance students’ technical and soft skills, promoting greater interaction among students and the industry and strengthening SPE student chapters.

This year’s theme for the conference is “From Wellhead to the World: Petroleum’s Global Impact”. Over 45 experts from industry and academia will address the notion that while petroleum is a local commodity, the innovations and resources created by exploration and production have a global impact. The 2015 keynote speakers, Allen Sinor, Baker Hughes VP of Global Accounts, and Tony Vaughn, Devon Energy VP of Exploration and Production, will be discussing their views and opinions on the current and future development of the petroleum industry with students.

For more information about the summit, please visit us at 2015StudentSummit.com. If your company is interested in participating, please contact mark.mcginley@pe.tamu.edu for questions. Sponsorship opportunities are still available.

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† Aqueous-base or water-miscible insulating packer fluid system is designed to minimize convective and conductive heat loss to assure flow in deepwater and other low temperature environments. The system is proven to control annular pressure build up and maximize produced fluid quality.

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† Mark of M-I Swaco
My name is Jennifer Wisler, and I am the President of the Texas A&M University SPE Student Chapter (TAMU-SPE). We are excited to welcome you to our new column in the Connect, which we will use to provide the Gulf Coast Section members with updates from our chapter. Staying in touch with the GCS helps us continue our growth and keep our former students up to date with our activities.

For our first publication, I would like to give you an overview of our chapter. I will also share one of our best practices — our committee structure.

TAMU-SPE is growing rapidly. At the time of this article submission, we have 1495 members! This is approximately 500 more members than we had in August 2014. The majority of our growth has come from incoming freshmen and non-petroleum students who hail from a wide variety of majors. In just this past fall 2014 semester, we had 55 unique events and 43 company sponsors! We have many events planned for the 2015 spring semester as well (37 on the calendar so far, with more to come).

As you can imagine, with as many events as we have, we need a lot of volunteers. We would not be able to do nearly as much if it were not for our dedicated committees. We have 14 committees, categorized under 4 boards, with a total of 125 students in a leadership capacity. The committee structure is detailed in the chart below. Within each committee we have a Director, Co-Chairs, and Members.

I am very proud to say that each of our committees is operating effectively and proactively. This is not only a product of our dedicated leaders, but also of the processes we have in place. Each committee is required to submit a quarterly report. These reports ensure accountability on the part of the Director and provide regular updates of the committee’s performance with regard to funding and member activities.

These quarterly reports include a summary of the committee’s purpose, vision and goals, upcoming events, past events, budget, and any special issues/challenges or resolutions.

The officer team also hosts a semi-annual leadership meeting. This allows each Director to present their plans for the semester so as to balance the event timeline schedule and needs of each committee. Through the effectiveness of our committee operations, TAMU-SPE has been able to greatly increase the number and quality of our events. Last but not least, our committee structure opens leadership opportunities to students of all ranks (freshmen to graduate students). The skills that our committee members learn through event planning, advertising, conflict resolution, and fundraising help to create better leaders and future employees in our industry.

I invite you to learn more about us at our website (spe.tamu.edu). On this site you can find our event calendar, list of sponsors, and committee descriptions. If you have any questions about TAMU-SPE or any suggestions for our next Connect column, please contact me at jennifer.wisler@pe.tamu.edu.

Kind regards,
Jennifer Wisler
2014-2015 TAMU-SPE President

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**COMMITTEE ORGANIZATION**

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<thead>
<tr>
<th>DEVELOPMENT BOARD</th>
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<td>Training &amp; Development</td>
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<td>Student Summit</td>
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<td>Sporting Clay Tournament</td>
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713.479.8400
westportservices@intertek.com

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Thanks to the Young Professionals for providing photos from their latest community service and social networking event they put on. We’d like to feature more photos from our section events and luncheons in the Connect. If your committee or study group has photos from your recent event, luncheons, dinners or conferences, please send the original high-resolution file to the Connect editor at editor@spegcs.org.
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CALENDAR

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