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I would like to welcome everyone back from the SPE summer break. The SPE board has a lot of new faces and volunteers this year, and our current board is looking forward to working with all the new volunteers to continue to provide events and activities to all our members in Denver.

I'm very proud to announce that the Denver Section has been awarded the 2018 President's Award for Section Excellence. I would like to congratulate the entire Denver board, as well as all our committee members and volunteers. Over the last few years we have been building our existing programs, and expanding our event offerings in education, community outreach, student programs and networking events to support the professionals and students in our section. Everyone has worked exceptionally hard, and it's an honor to be recognized by the International Board of Directors.

As we get kick off our year, I would like to remind everyone that the Jack England pass is currently for sale. This will cover entrance to the September, October, November and December General Meetings. The pass is \$90 (rather than \$100), and will be available for sale up to and at the September General Meeting.

I look forward to seeing you at an event soon!

Sincerely,

Deb Ryan
SPE Denver Chairperson

September 4, 2018

GENERAL MEETING

New Analysis of EUR Probability Plots Yields Better Uncertainty Assessment

Randy Freeborn - Fellow at Aucerna

📍 Denver Athletic Club

📅 Wednesday, September 19, 2018, 11:30 AM - 1:00 PM

Early-bird registration deadline: September 17 at 5:00 PM

Tickets:

Members	\$25
Non-Members	\$35
Walk-Ins	\$45

[Register Now](#)

In this Issue...

- [Newsletter Sponsor](#)
- [General Meeting](#)
- [Jack England](#)
- [Mock Interviews](#)
- [Education Track](#)
- [STUDY GROUPS](#)
- [Young Professionals](#)
- [Young Professionals](#)
- [Young Professionals](#)
- [Community Outreach](#)
- [Section Chair Letter](#)

Thanks to This Month's Newsletter Sponsor:

Outline: Evaluators use a lognormal probability distribution of estimated ultimate recovery (EUR) to predict the EUR that may be expected when drilling more wells. The EURs used in the distribution are determined by extrapolating the rate-time profiles of analogous wells; existing wells that are expected to behave like the planned wells. The range of expected values is captured by the difference or ratio of P₁₀ and P₉₀ EUR. Even with many analog wells, the analog distribution may differ from the population distribution, creating meaningful uncertainty usually absent when the only uncertainty is assumed to come from non-uniform sampling. This paper presents a statistical method to quantify the possible deviation between analog and population distributions and to construct type wells that incorporate this uncertainty.

The process uses Monte Carlo simulation to select EURs from known population distributions and create a sample distribution for each trial. The “known” population P₅₀ EURs and the P₁₀/P₉₀ ratios are random. The number of analog wells is equal to the number of wells (samples) selected for the trial.

We test our observation that uncertainty is understated using recommendations in SPEE Monograph 3. Probability distributions are used for building aggregation type wells (SPE 175967). As the number of planned wells increases (the number of wells in the aggregation), the P₁₀/P₉₀ ratio becomes smaller (less uncertainty). When the number of planned wells is in the hundreds, the P₁₀/P₉₀ ratio approaches one, there is limited uncertainty and that is not observed in practice. Employing the methods described in this paper, other uncertainty is captured and persists, even when the number of wells is large.

We find that analog distributions are unlikely to represent the population due to non-uniform sampling. The method proposed in this paper works to identify the uncertainty caused by non-uniform sampling, and to correct distributions to align with the risked population and obtain better evaluations.



Biography: Randy Freeborn was a Distinguished Lecturer of the SPE about type wells and is a subject matter expert in empirical forecasting and related technology. Currently, he is a Fellow at Aucerna (formerly 3esi-Energisight & Palantir) where he is responsible for identifying and inventing engineering technology for inclusion in the company's integrated reserve, asset management and planning software. He has been a professional engineer for 4 ½ decades and is a member of SPEE and SPE. Freeborn has prepared numerous technical papers for presentation at conferences, workshops and industry meetings. He has given guest lectures at the University of Houston and Texas A&M and has been called as an expert witness.

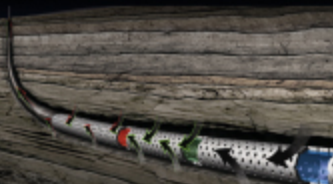
Randy is an avid skier and bicycle commutes to work, even on cold, snowy Calgary days. His all-time favorite vacation spot is Grace Bay in the Turks and Caicos Islands.

JACK ENGLAND GENERAL MEETING PASS

Fall 2018 Jack England Pass for General Meetings



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\$90 per Pass

[Register Now](#)

Details: Denver SPE members who would like to pre-pay for the fall general meeting lineup may now do so through the purchase of a Jack England Pass. This \$90 pass represents a 10% discount below normal admission rate and provides access to the September, October, November and December general meetings. If a pass holder is unable to attend a pre-paid meeting, they can transfer the pass to another member by contacting denversection@spemail.org.

CSM MOCK INTERVIEWS

CSM Fall Career Fair Interviews

Mock Interviews will be held downtown Denver on September 6, 2018

Would you like to be a volunteer mock interviewer to help CSM SPE students (Freshmen to seniors and graduate students) get ready for their career day this September 11th? Kindly consider giving sometime to season these bright and future generation of the oil and gas industry.

Fill out the form through this [link](#) which has flexible time slots and venue information.

Thank you for your participation.

If you have any questions, please contact the CSM SPE officers below;


Sam Sundar; sdharmaselvan@mymail.mines.edu

Wale Adekunle; oadekunl@mymail.mines.edu


CONTINUING EDUCATION

Production Forecasts and Reserves Estimates in Unconventional Reservoirs

Dr. John Lee - Texas A&M

 Schlumberger Training Room, 1675 Broadway, Suite 700, Denver

 October 8-9, 2018

 1.6 CEUs (Continuing Education Units) will be awarded for this 2-day course

Registration deadline: September 25, 2018

[Register Now](#)

Description: This course teaches the skills and understanding needed to forecast production and estimate reserves in unconventional (ultra-low permeability) oil and gas reservoirs. The course emphasizes “simple” production decline models appropriate for routine forecasting for hundreds of wells in short periods of time. Both tight oil and gas reservoirs, such as shale resources, are discussed.

Instructor:

W. John Lee is Professor of petroleum engineering at Texas A&M University. He previously held the Hugh Roy and Lillie Cranz Cullen Distinguished University Chair at the University of Houston’s petroleum engineering program. Prior to this, Lee held the L.F. Peterson Chair and was Regent’s Professor of petroleum engineering at Texas A&M University. He was the former executive vice president of S.A. Holditch & Associates, where he specialized in reservoir engineering for unconventional gas reservoirs. He served as an Academic Engineering Fellow with the US Securities and Exchange Commission (SEC) in Washington during 2007–2008, and was a principal architect of the new SEC rules for reporting oil and gas reserves.



Prior to beginning his career in academia, Lee managed Exxon’s Major Fields Study Group. He has written many technical papers and co-authored four SPE textbooks: Well Testing, Gas Reservoir Engineering, Pressure Transient Testing, and Applied Well Test Interpretation. He is also co-author of SPEE Monograph 4, Estimating Ultimate Recovery of Developed Wells in Low Permeability Reservoirs. Lee is an Honorary Member of SPE and a member of the US National Academy of Engineering. He received his BChE, MS, and PhD degrees in chemical engineering from the Georgia Institute of Technology

STUDY GROUPS

Completions and Production: Data Problems and Where They Fit Within the Overall Data Picture *Charles Ro*

📍 Halliburton Downtown Office, 1125 17th St, Suite 1900, Denver, CO

📅 Thursday, September 27, 2018, 11:30 AM - 1:00 PM

[Register Now](#)

Biography: Charles Ro has 18 years of experience in Oil and Gas, the capital markets, and finance. He has worked closely with C-level executives and has managerial experience, including P&L and budgetary responsibilities. His O&G career began on the land



side, working with the most difficult data, broadening when he explored creating a software company which would integrate with all facets of upstream. This continued in working with an O&G analytics group, furthering his understanding of the complexities of decision making processes. His technical background includes building databases with reporting and financial analysis tools. He began his education as a Mechanical Engineering major and holds a BS in Statistics from the University of Illinois, Champaign-Urbana. He is also an Associate Scout for the Atlanta

Braves.

YOUNG PROFESSIONALS

Lunch & Learn - Augmenting Hybrid Physics-Based Multivariate Analysis with the Alternating Conditional Expectations Approach

Ely Lonon, Reservoir Services Manager at Liberty Oilfield Services

📍 Liberty Oilfield Services, 950 17th St. Suite 2400, Denver

📅 September 12, 2018, 11:30 AM - 1:00 PM

Lunch will be provided

[Register Now](#)

YP Happy Hour

📍 Rio Grande Mexican Restaurant, 1525 Blake Street

📅 September 12, 2018, 4:30 PM - 6:00 PM

Join us for a drink and appetizers to catch up and network with friends and colleagues. It's on us!

SPE DENVER ANNUAL TENNIS TOURNAMENT

📍 Gates Tennis Center, 3300 E. Bayaud Ave. Denver, CO

📅 October 5, 2018, 11:30 AM - 4:30 PM

Join us for the 2018 Denver SPE Tennis Tournament

[Register Now](#)

All proceeds benefit the Denver SPE Scholarship Fund.

Registration includes: court fees, lunch, refreshments, balls, awesome door prizes and awards.



Fees: \$30 entry fee per registration plus online fees

Sponsorships: We offer three levels of sponsorship donation. Companies donating \$500, \$250 or \$100 will be recognized as Gold, Silver, or Bronze sponsors. The sponsoring companies will be recognized at the tournament and in the SPE Newsletter.

PLEASE REGISTER SOON! Limited to the first 40 entries.

Questions? Reach out to Renee Supplee at (303) 229-4920 or renee.supplee@bhge.com.

PARTNER EVENT - ENERGY DAY

 East High School, 1600 City Park Esplanade, Denver, CO
 Saturday, September 22, 2018, 11 AM - 4 PM

Please consider attending Colorado Energy Day. Energy Day is Colorado's first FREE family festival showcasing exhibits focused on science, technology, engineering and mathematics (STEM). Energy Day will feature exciting exhibits and interactive demonstrations that will teach students and their families about various forms of energy and how through STEM education, they can find an exciting career in the energy industry. Come down and support our local schools, energy experts, and the amazing kids out there looking to learn and develop their skills in STEM education!

More information about the event can be found [here](#).

COMMUNITY OUTREACH

Do you want to teach young students about energy, serve breakfast at the Denver Rescue Mission, or judge science fairs? Join other SPE members in giving back to our community! If you want to learn more about SPE's outreach activities, please contact Community Outreach Chair, Ellen Scott.
ellen.scott@fractureid.com

Society of Petroleum Engineers - Denver Section

Americas	Asia Pacific	Europe	Middle East
222 Palisades Creek Dr. Richardson, TX 75080-2040 USA	Level 35, Gardens South Tower Mid Valley City, Lingkaran Syed Putra 59200 Kuala Lumpur, Malaysia	1st Floor, Threeways House 40/44 Clipstone Street London W1W 5DW UK	Fortune Towers, 31st Floor Offices 3101/2, JLT Area P.O. Box 215959, Dubai, UAE

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