

# SPE Mid-Continent Section Newsletter

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Mid-Continent Section



*Society of Petroleum Engineers*

## 1917-Mid-Continent Section-2017



# SPE Mid-Continent Section

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Voting members consist of the Executive Committee. The Chairman only votes in the event of a tie. A Motion can be voted upon with a Quorum of the Voting Members present. A Quorum consists of five Voting Members present. An affirmative vote will consist of 50% of the Quorum present. Committee Chairmen and in their absence, the Committee Vice Chairmen are encouraged to attend board meetings and provide representation and committee reports. The editor welcomes newsworthy items about SPE members or events. Please provide a **draft to the newsletter editor by the 25th of the month**. Change of contact information requests should be made to SPE in Richardson, TX, 1-800-456-6863, or [service@spe.org](mailto:service@spe.org).

# Chairman's Gavel

David Krueger, 2020-2021 Chairman

February 2021 is here and we are over one-third of the way through winter. Spring is right around the corner and many of you are thinking already as to what your plans will be for the remainder of this year. As I am writing this, the news is telling me that we now have three new strains of Covid-19 coming our way: one from South Africa, one from South America, and one from Europe. The effectiveness of the current vaccines we are currently distributing remains to be seen.

As of this week, it looks like 11,000 Keystone Excel Pipeline jobs are out the window. Our Canadian neighbors to the north are very upset, not only because they already have over one billion dollars invested, but because they don't have a good viable long term economic way to get their crude to market with current crude price structure. As a reference point, North Dakota oil operators struggled to pay the \$6.50/bbl charge to haul crude by rail to the Gulf until the 30 inch pipeline was installed from North Dakota to Central Illinois to transport that oil.

On the International scene, there is a lot going on. I noticed that Total SA has had to evacuate their expats from a \$20 billion Mozambique LNG project that they acquired from Anadarko via an Occidental deal. Evidently, terrorists have invaded the area and +2,500 have been killed and over 500,000 have fled the area due to the fighting. This camp is located in the NE part of the country near the Indian Ocean about 5.5 miles SSE of the city of Palma. The camp has a 4,600 foot runway just to the West of the compound, so evacuation by air should not be too tough.

Moving north from Mozambique about 3,000 miles, we come to Iran, where it looks like sanctions for oil exports will be soon be eased. It looks like China will benefit greatly from this. China has also recently announced a push for not only food and energy security but is also the major player in the rare earth metals markets.

These metals are very important in the oil and gas industry, not only for catalysts but also to make high strength alloys for corrosion and heat resistance. You will remember Lockheed and the US government had to get the CIA to set up front companies to purchase Titanium from the USSR to build the SR71 spy plane that holds the record for never being shot down and out running surface to air missiles. The USSR produced so much of the rare earth metal that they actually built a sub out of the material. It was so fast that it ran rings around anything we had. It was so expensive to build that only one was finished and put out to sea.

This is going to be a very turbulent year, the way it is shaping up, so buckle up tight after checking that your parachute is properly packed and let's go for this ride!

David Krueger  
2020-2021 Chairman  
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## SPE Mid-Continent Newsletter Sponsors

Chairman's Gavel .....	1
Editor's Column.....	3
Calendar.....	3
Presentations and Meetings.....	4

# 2021-2022 Scholarships

Lisa Sullivan, Scholarship Chair

The Mid-Continent Section is excited to tell you that we are offering a scholarship to undergraduate students for the 2021-2022 school year. While SPE prefers to direct these scholarships to students who are pursuing technical degrees, like engineering or biosciences; students whose parents are SPE members may pursue other majors and would still be eligible to apply for this scholarship.

### Eligibility Requirements:

- Must be currently attending or planning to attend a college or university during the 2021-2022 school year.
- Must be in good academic standing with your current educational institutional
- Must fill out the appropriate application forms from [SPEMC.ORG/Scholarship](http://SPEMC.ORG/Scholarship) site, please read carefully and start early to meet the deadline!
- 100% completed application forms\* must be submitted and received by SPE Scholarship chair via email ([spemidconscholarship@gmail.com](mailto:spemidconscholarship@gmail.com)) by **April 1, 2021**

We would be honored if you would communicate this opportunity to any students you know. \*Applications forms are available on the SPE Mid-Continent website at this [link](#) or by visiting [www.spemc.org](http://www.spemc.org) and choosing **scholarships** from the menu.

Lisa Sullivan  
SPE Mid-Continent Scholarship Chair

# From Your Editor

Betty Felber, 2020-2021 Editor

February contains at least two days of note—Presidents' Day and Valentine's Day. Our section is awaiting the time when we are able to meet in person once again. Don't know when that might be. Keep your eyes out for the next virtual meeting for now.

Remember to review the ads in your newsletter. There are some interesting technologies that can help solve some of the scientific challenges that confront you. Look for technologies that can help you do your job faster, economically and accurately. When you find these outstanding technologies, share them with your fellow professionals by talking about the successes you have had.

Betty Felber  
Editor



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producing for you.

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## Calendar of Events

**Thursday, February 18, 2021 - Distinguished Lecturer Zoom Presentation** (see details on page 4)

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All SPE luncheons are held at the Summit Club unless otherwise noted - See p7 for more details.

### FEBRUARY 2021

**ZOOM PRESENTATION | THURSDAY, February 18, 2021 - 10:00 a.m.**

**Speaker:** Junjing (Z)Zhang's | SPE Distinguished Lecturer

**Topic:** "Mitigating Production Degradation Due to Frac Hits in Unconventional Reservoirs"

We hope you can join us, and make the most of SPE Distinguished Lecturer – Junjing (Z)Zhang's virtual visit to our Section.

SPE Distinguished Lecturers are industry experts and outstanding speakers, nominated by their peers, to share their knowledge and expertise on the latest industry trends and technologies with SPE members throughout the world through visits to local sections.

Register at this link <https://www.spe.org/en/dl/schedule/>

After clicking the link above, scroll down to the February 18th Tulsa, Oklahoma event and click on Register Now. If you are not already logged in with your SPE member credentials, you will be prompted to log in. On the next page choose Register Now under the heading Register for Distinguished Lecturer event. After clicking Register Now you will receive a Zoom link by email.

#### Description

In unconventional reservoirs, a "frac hit" is the infill-to-parent well communication during hydraulic fracturing. In most shale plays, production from the parent-infill well system drops below original forecasts due to production degradation after fracture hits from offset wells. This study reviews current methods to mitigate the production degradation and evaluate the effectiveness of these methods. Major challenges and opportunities are also presented.

The mitigation methods discussed in this lecture include (1) applying far-field diverter during fracturing in the infill wells, (2) reinjecting water into the parent wells and (3) refracturing parent wells. Key design considerations for each method are presented in

Monthly presentations are being planned for the 2020-21 session. The safety of our members is our top priority so in-person scheduling for future events is tentative based on health guidelines in our area as well as availability of meeting venues. Watch for announcements about future meetings and events in this newsletter or by email.

detail. A total of 565 fracture “hit events” at 41 impacted parent wells are statistically analyzed. Long-term well performance of several hundred impacted wells are also evaluated.

Based on the comprehensive analysis, the abovementioned three mitigation methods are field-proven and effective in protecting parent wells and improving infill well stimulation efficiency. With low operational costs, pumping far-field diverters results in a P50 EUR increment by 6%, with a 20% failure rate in the parent well protection. Water reinjection in the parent wells shows successful parent well protection, but the impact on the long-term well performance is negligible. Re-stimulation of properly selected parent wells with near-wellbore diverters indicates a P50 EUR increment by 40%. Selection of parent well protection methods needs to be fit-for-purpose and is fundamentally dictated by well conditions, operational experience and economic models applicable to the area.

Take-away: “Frac hit” mitigation methods need to be fit-for-purpose and are fundamentally dictated by well conditions, operational experience and specific economic models.



**PetroWiki**

PetroWiki is a free resource from SPE to answer many basic petroleum engineering and operational questions. SPE professional members can contribute their expertise through updating or adding to PetroWiki content.

<http://petrowiki.org/PetroWiki>

*“I predict future happiness for Americans, if they can prevent the government from wasting the labors of the people under the pretense of taking care of them.”*

– **Thomas Jefferson**



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