



# **State-of-the-Discipline:**

# ***COMPLETIONS***

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## Urgent Technical Challenges

- Well-to-well interference during stimulation (a.k.a. “frac hits”)
- Induced seismicity
- HP/HT completions (ultra-deep)
- Completion systems reliability
- Modified HVFR for hydraulic fracturing in unconventional
  - Proppant transport behavior
  - Differences in FR types
- Water use
  - Recycling
  - Disposal
- Improved treatment diagnostics/integrated diagnostics

## Important Technical Challenges

- Geomechanics/geomechanical behavior – integration
- Formation specific completions
  - One size doesn't fit all
  - Scarcity of products
- Quantifying fluids for stimulation
  - What is the viscosity anyway?
  - Additives
- Proppants – regional sourcing
- Well integrity
  - Primary completions
  - Prepared for secondary/tertiary recovery/late life??

## Important Technical Challenges

- Materials “fit-for-service”
  - Cheaper doesn’t equal better
- Balance of science versus cost
- Multi-stage horizontal well treatment efficiency
  - Diversion
  - Preventing proppant flowback
  - Refracturing
- Lose of technical mentorship

## Relating the Present with the Past

- R&D slow to market
  - Radical steps aren't there
  - Minor improvements
  - Field deployment slow

## Data/Information Needed

- LOTS of data
- Determination of what is important / filtering
- Interpretation of what data science / analytics is telling us
  
- Data  $\neq$  Information

## Strategic Plan - Completions

1. Life-long Learning
  - Interpretation of data in the completions area
2. Knowledge Transfer
  - New webinars
  - Expansion of completions-related topics
  - Additional workshops and forums
3. Membership
  - Creation of the Completions Discipline
  - Conversion of students to professional members
4. Professional Pride

## Feedback/Tasks – the Audience

1. What webinar topics would you like to see?
2. Recommendations for Completions-oriented Distinguished Lecturers
3. Nominations for Completions-oriented regional and international awards
4. Updates to Petrowiki.org
5. How can you get involved?
  - <https://www.spe.org/volunteer/>





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