SOCIETY OF PETROLEUM ENGINEERS
Wyoming Petroleum Section
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Section Website for Latest News:
http://wyoming.spe.org/

2025-2026 Wyoming Petroleum Section				
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UPCOMING AREA MEETINGS

WYOMING GEOLOGICAL ASSOCIATION & SPE – In-person meetings will now be held at **Various Locations (please pay attention to each individual meeting)**. Lunch Buffet served from 11:15 to 12:00 unless otherwise noted. Contact the WGA office at 237-0027 or wygeology@gmail.com for more information or to RSVP. Reservations are mandatory and are due **Tuesdays by 12 PM** for that week.

Feb 20, 2026 (Racca's): Russell Hawley – Tate Museum – *Late Cretaceous Dinosaurs*

Feb 27, 2026 (TBD) (SPE): Tarek Ismail – University of Wyoming – *Accelerating Sweet-Spot Identification in the Mowry Shale Through Mineralogical and Geochemical Integration*

Mar 13, 2026 (TBD): TBD

UPCOMING MONTHLY PRESENTATIONS FOR THE SPE WYOMING PETROLEUM SECTION

February 27, 2026 – @ TBD – Tarek Ismail – University of Wyoming – Accelerating Sweet-Spot Identification in the Mowry Shale Through Mineralogical and Geochemical Integration

March 27, 2026 – TBD

Society of Petroleum Engineers

Wyoming Petroleum Section
February 2026 Newsletter
http://wyoming.spe.org/

When: **February 27, 2026**

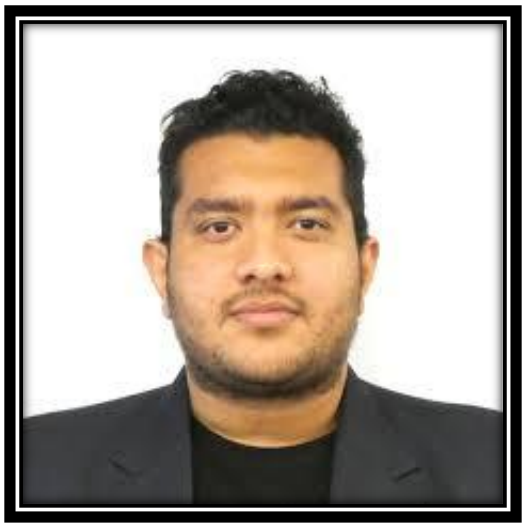
Where: **TBD**

Time: Luncheon 11:15 AM; Talk 12:00 PM

RSVP by noon on Tues
wygeology@gmail.com

Event: **Tarek Ismail – University of Wyoming – Accelerating Sweet-Spot Identification in the Mowry Shale Through Mineralogical and Geochemical Integration**

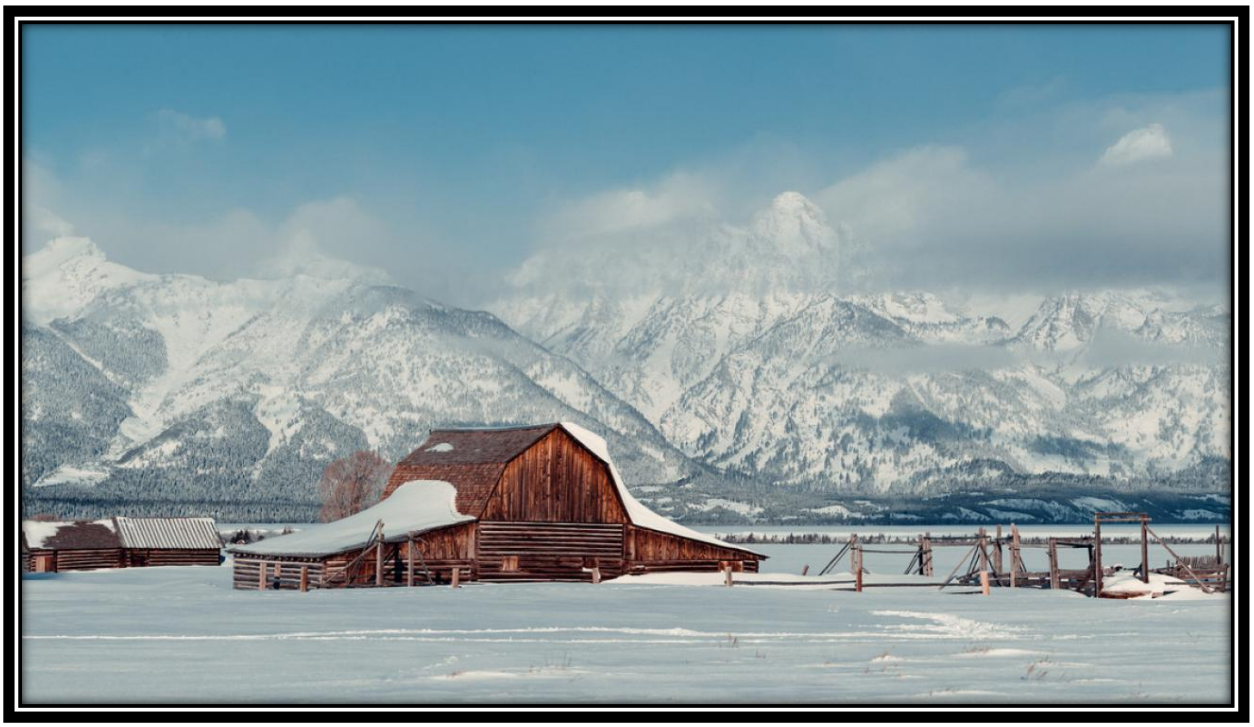
Abstract:



Identifying productive sweet spots in unconventional shale reservoirs requires a robust understanding of geochemistry, mineralogical variability and its influence on mechanical behavior and hydraulic fracturing potential. A central objective of this work is the development of methods that rapidly access critical subsurface information while reducing analytical time and complexity. To accelerate mineralogical characterization, a mineralogy-based brittleness index is employed to link compositional variability to hydraulic fracturing potential. In parallel, a machine-learning workflow has been developed that converts optical microscope images into quantitative mineral maps, enabling both bulk and spatial mineralogical assessment without reliance on time-intensive analytical techniques. The representative elementary area (REA) required to capture representative bulk mineralogy in the Mowry Shale has also been identified, substantially reducing micro X-ray fluorescence (μXRF) scanning time while preserving compositional representativeness. Geochemical parameters, including organic richness and thermal maturity, are incorporated into the sweet-spot quality model using similarly rapid approaches. Raman spectroscopy is applied as a fast, non-destructive method to assess thermal maturity, providing timely maturity estimates without extensive sample preparation. In clay-rich intervals of the Mowry Shale, conventional organic matter preparation workflows can be slowed by the strong presence of Bentonite. To address this limitation, electrostatic isolation of organic matter was developed and applied firsthand as a faster and safer alternative to traditional acid digestion, enabling efficient access to organic matter for characterization while minimizing chemical handling and preparation time. Ongoing efforts continue to refine and validate this workflow. Collectively, these integrated mineralogical, geochemical, and data-driven approaches demonstrate how rapid-access characterization methods can streamline sweet-spot identification and improve decision-making in heterogeneous unconventional shale systems.

Biography:

Tarek Ismail is a petroleum engineer and research assistant specializing in unconventional shale characterization, with a focus on integrating geochemistry, mineralogy, and data-driven workflows for reservoir evaluation. His work emphasizes the development of faster, safer, and more scalable methods for assessing organic content, thermal maturity, and mechanical properties in clay-rich shale systems, particularly the Mowry Shale of the Powder River Basin. His research includes electrostatic isolation of organic matter, machine-learning based mineral mapping from optical imagery, and optimization of micro-XRF workflows through minimum representative area analysis. He actively collaborates with academic and government research institutions and has published peer-reviewed work on innovative shale characterization methodologies.



CALENDAR OF EVENTS and NEWS WYOMING PETROLEUM SECTION

Due to our excellent participation in past continuing education events, we will continue to offer these as they become available. Our web address is *http://wyoming.spe.org*

The SPE Wyoming Petroleum Section will be sending out letters for sponsors for 2026 scholarships soon. Please consider donating to help support students. If you need further information please contact Johnathon True at: johnathon.true@exxonmobil.com

We have moved venues!!

Meetings will be held at various locations. Please keep an eye out for changing venues. Let SPE know if you need any help or have any questions regarding meetings.

Luncheon Cost is $25