Sequence Stratigraphy of Transitional Systems
(Book Cliffs, Utah)

This field course teaches introductory sedimentology and sequence stratigraphy and illustrates how these are powerful tools for stratigraphic predictions at various scales. The course starts with the basics and gradually introduces complexities useful for industry. This course format typically includes introductory lectures, group field work, presentations, and summaries. The course utilizes the sequence stratigraphic method by having participants make observation-based descriptions of the rocks that have been deposited in fluvial and shallow marine depositional realms. After completing this course, participants should feel confident working on stratigraphic projects with a sufficient degree of independence and success.

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COURSE CONTENT

• General overview of Book Cliffs of Utah and Colorado, which has been extensively used for generic geologic investigations and as analogues for many global petroleum systems and oil fields
• Review classic fluvial and shallow marine facies, strata, and architecture in the outcrop
• Understand how depositional environments from proximal to distal locations vary paleo-geographically
• Reservoir heterogeneity in basins with short distance transport

LEARNING OUTCOMES

• Historical overview of geologic investigations conducted on the world-class rock exposures known as the Book Cliffs
• Review classic fluvial to shallow marine clastics deposited along the Cretaceous Western Interior Seaway
• Conduct a transect of rock exposures that broadly follow a regional depositional dip trend of proximal to distal depositional environments
• Understand shallow marine architecture
• Explore proximal paleogeographic settings to relate fluvial deposits and architecture back to shallow-marine architecture
• Compare varying scales of heterogeneity that fluvial to shallow-marine sedimentary systems exhibit to help make informed predictions regarding reservoirs and reservoir properties