



April 5-9, 2020

# "Sequence Stratigraphy from the Ground Up – Everyday Applications"

by Katie Joe McDonough, PhD

This workshop is conducted online with 3.5 - hr sessions over 5 days

This 5-session workshop introduces basic concepts of sequence stratigraphy by first reviewing sedimentologic processes and the resultant deposits—facies. We then explore coeval depositional systems and how they relate spatially and temporally. The cyclicity inherent in the stratigraphic record is demonstrated and its utility explored. Correlation techniques and sequence stratigraphic methods are demonstrated in a variety of basins.

Examples from worldwide petroleum plays demonstrate cycle recognition across depositional systems, stacking patterns in various geomorphic positions, Wheeler (chronostratigraphic) diagrams, and multi-disciplinary data integration by upscaling between data sets—seismic, outcrop, core, well log. Exercises demonstrate and reinforce sequence stratigraphic interpretation techniques integrating disparate data types. Improve your E&P outcomes by enhancing the quality of your stratigraphic interpretations.



Katie Joe McDonough, PhD

Katie-Joe McDonough, PhD., is a geological/geophysical consultant specializing in sequence/seismic stratigraphy and integrated interpretations. Her areas of expertise in sedimentology and seismic interpretation form the foundation of her work in stratigraphic basin analysis, exploration play assessment and reservoir-scale development.

Dr. McDonough began her career as a geophysicist with Exxon USA, where she developed her interest in sequence stratigraphy and sedimentology. As the field of seismic stratigraphy burgeoned in the 80s, she turned to the Colorado School of Mines, earning her Ph.D. in 1997 working the seismic-scale carbonate outcrops in the Southern Alps.

Since launching her consulting practice in 1999, Dr. McDonough has enjoyed gigs working diverse data sets for the international and domestic U.S. petroleum industry. She works continental to deep marine strata of conventional & unconventional plays in North and South America, East/West Africa, Europe and Indonesia. She has published widely on her work in many of these areas. She serves as an industry mentor to RMAG YPs and to Geophysics graduate students in CSM's Reservoir Characterization Project. She is fluent in French, functional in Spanish, and has a 6-word Bahasa vocabulary.

This workshop will adjust to participants experience level and interest as much as possible. Therefore, we will ask you beforehand to provide some information why you are taking this course, what your experience level is with the subject matter and the type of work you want to apply the learned content. In addition, we are offering free follow-up consultation via email or phone to discuss and advise on your specific challenges and projects.

This course is available for single participants as well as small groups (multi-client) and large groups (inhouse) – see below.



# **Workshop Outline**

#### Session 1

Introduction and Basics

- Participant and instructor introductions
- Review of facies, Walther's Law, facies successions—basic stratigraphic cycles
- Recognizing cycles within and across depositional systems
- Stacking patterns (1D) and their relationship to stratal geometry (2D-3D)

## Session 2

- Accommodation / sediment supply—the essential controls
- Parasequences, systems tracts, sequences—how to navigate the nomenclature?
- Correlation strategies, scenarios and examples
- Take-home exercise cycle, stacking pattern & stratal geometry recognition

## Session 3

Stratigraphic concepts applied to E&P in conventional and unconventional plays

- Review recognition of cycles, stacking patterns & stratal geometry
- Recognizing multi-scale cyclicity and stratal geometry in seismic data

#### Session 4

- Recognition of seismic facies related to depositional facies
- In-session exercise on seismic stratal geometries
- Detailed topics of interest to attendees --

#### Session 5

Play-based petroleum systems analyses from sequence stratigraphic perspectives

- Worldwide examples and case histories
- Petroleum systems in systems tract context
- Current topics of interest to attendees (you'll be asked to provide input after Session 2)

#### **COURSE LOGISTICS AND REGISTRATION**

# "Sequence Stratigraphy from the Ground Up – Everyday Applications" by Katie Joe McDonough

Time: Monday, April 5 – Friday, April 9, 2020 at 8 – 11:30 am Central Time US (Houston)

**Venue:** ZOOM Meeting Platform. If you require a different online meeting platform, we can arrange for that.

**Included:** Manual pdf, certificates on request

Price: Single participant USD 975/900\*; Multi-client USD 3,250, Inhouse USD 4,250

Register: Follow link to register

CONTACT TerraEx Group at info@terraexgroup.com or ++ 303 319 3043

Single participant - regular price for 1 participant (public schedule)

Single participant - discount\* price for 1 participant unemployed, academics and > 1 course booked (public schedule) Multi-client price for group up to 5 participants from the same company (public or custom schedule)

Inhouse price for group up to 25 participants from the same company (custom schedule)