



TWO DAY SHORT COURSE

Jeffery J Dravis PhD

**CONTROLS ON CARBONATE PLAY DEVELOPMENT IN
PALEOZOIC AND MESOZOIC CARBONATES
Influence of Physiographic Setting and Structural Controls
on Conventional and Unconventional Carbonate Plays**

NOVEMBER 15-16, 2018

8:30am - 4:30pm

COST: \$500.00 Member

\$600.00 Non-Member

OCGS DEVON GEOSCIENCE CENTER

10 NW 6TH STREET

OKLAHOMA CITY, OK 73102

The OCGS doors do not open until 8:00am.

RESERVATIONS MUST BE SUBMITTED BY 12:00 NOON November 8, 2018

Content

A carbonate play is the juxtaposition of a limestone or dolostone reservoir facies sealed by a carbonate or shale facies, with its hydrocarbons sourced from a nearby organic-rich carbonate or siliciclastic mudstone. Understanding the controls on carbonate play type distribution and geometry is critical to more successful exploration in any basin. As such, delineating potential carbonate plays from seismic or wireline logs requires a sound understanding of the depositional and diagenetic controls that create the reservoir facies, but it must be obtained within the context of geological age and physiographic setting.

Specifically, one must appreciate the environmental controls on carbonate facies development, and potential pathways for diagenesis and porosity evolution. For this reason, strategies employed in the search for sandstone or mudstone (shale) reservoirs never work for carbonate sequences, including application of sequence stratigraphic models that assume sea level changes overriding control carbonate facies and sequence evolution.

This two-day short course reviews the key controls on carbonate facies occurrence and distribution, and demonstrates the strong influence of physiographic setting, both at the global and local scale. Because most carbonate reservoirs developed within tropical or subtropical settings, paleotrade winds often were a major influence on their occurrence and distribution. In addition, the key controls influencing limestone diagenesis and dolomitization are reviewed, but with focused emphasis on how porosity and permeability evolve. The diagenesis discussion also will stress how to resolve the relative timing of secondary porosity development in these carbonates, which is key to

exploiting regional porosity trends. The diagenesis discussion will further evaluate in depth the role that deep-seated faulting often plays in carbonate diagenesis and evolution of reservoir quality, as well as hydrocarbon entrapment.

This short course culminates with a discussion relating carbonate play type occurrence, geometry and distribution to geological age, but within the context of local physiographic setting (platform versus ramp). This approach will be supported by Cambro-Ordovician through Upper Cretaceous case studies from different basins in the U.S. and elsewhere. Principles gleaned from these case studies then can be applied to basins of interest in Texas, New Mexico or the mid-continent area.

A substantial notebook containing images (many in color) keyed to the lectures will accompany the seminar. Bibliographies for lecture topics will be provided digitally.

TOPICS DISCUSSED

Distinctive Aspects of Carbonates; Constituents and Textures; Classification Schemes

Limestone Diagenesis and Porosity Evolution: Controls, Processes and Products, and Timing

Dolomitization: Popular Models; Porosity Evolution and Timing Relationships

Carbonate Facies: Controls and Attributes; Influences of Easterly Trade Winds; Review of Carbonate Facies Models

Established (Rock-Based) Principles of Carbonate Depositional Sequences and Cyclicity

Classification of Carbonate Play Types: Conventional and Unconventional Case Studies

Bio:

Jeff Dravis is a carbonate geologist whose consulting activities primarily focus on aiding in the discovery of oil and gas deposits, or enhancing their development once they are found. He also conducts numerous applied carbonate training seminars for industry every year.

Jeff received his Bachelor of Science degree in Geology from St. Mary's University in San Antonio, Texas. He received a Master of Science degree in Marine Geology from the University of Miami's Rosenstiel School of Marine and Atmospheric Sciences. His thesis was entitled "Holocene Sedimentary Environments on Eleuthera Bank, Bahamas." Jeff then entered Rice University, Houston, Texas, to begin work on deep-water carbonates under the direction of Dr. James Lee Wilson. He was awarded a Ph D in Geology; his dissertation was entitled "Sedimentology and Diagenesis of the Upper Cretaceous Austin Chalk Formation, South Texas and Northern Mexico."

Dr. Dravis began his professional career with Exxon Production Research Company in Houston. There, he conducted applied research on carbonate facies, diagenesis and porosity evolution, but also headed up Exxon's worldwide training efforts in carbonates. This training included teaching in-house seminars, as well as leading combined modern (Bahamas and Florida) and ancient (Texas and New Mexico) carbonate field seminars for the corporation.

In 1986, Jeff started his own consulting practice in Houston. First, he founded Dravis Interests, Inc. to provide technical expertise and training in applied carbonate petroleum geology to the oil and gas industry. Then Dravis Geological Services was created to handle all technical consulting projects. Jeff has been involved in over 180

technical projects worldwide, working sequences ranging in age from Cambrian to upper Tertiary. He has presented over 270 in-house and field seminars to industry, both on a public and private basis, including dozens of seminars to Caicos Platform in the southeastern Bahamas. His clients are domestic and foreign oil companies, both majors and independents.

Jeff is an adjunct Professor of Geology at Rice University, where he teaches parts of courses, takes students into the field, and periodically serves on these committees. For the past two years, he has taught the carbonate geology segment of the University of Houston's Professional Master's Program in Petroleum Geology.

Dravis Interests, Inc. and Dravis Geological Services
Houston, Texas (<http://www.dravisinterests.com>)

*PARKING ON-SITE, LIGHT BREAKFAST, SNACKS
and LUNCH ARE INCLUDED.*

THERE WILL BE NO ONSITE REGISTRATION.

*Refunds for cancellations will be issued
if reservation is cancelled by noon November 8, 2018.*