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**36th ADVANCED CARBONATE FIELD SEMINAR  
CARBONATE FACIES AND SEQUENCES ON CAICOS  
PLATFORM, B.W.I. - DIRECT APPLICATIONS TO  
HYDROCARBON EXPLORATION AND DEVELOPMENT GEOLOGY**

**JUNE 2-10 2024**

**DRAVIS INTERESTS, INC.**

**INSTRUCTORS: JEFFREY J. DRAVIS  
HAROLD R. WANLESS**

**PURPOSE AND GOALS**

This seminar provides each participant with a thorough introduction to established Holocene and Pleistocene depositional models from Caicos Platform and other areas. These newer models are more applicable to the subsurface hydrocarbon exploration for, or development of, Devonian and Mississippian sequences in western Canada, the Cretaceous system around the Gulf of Mexico, and many other intracratonic basins in the world. Emphasis is placed on:

- Delineating controls on shallow marine carbonate deposition and potential play development
- Recognizing key attributes of typical carbonate facies and sequences
- Relating reservoir quality to depositional setting and early porosity modification
- Appreciating the role of climate and trade winds on carbonate deposition
- Predicting subsurface facies distribution and geometry
- Developing guidelines for predicting subsurface carbonate play relationships
- Relating observations to pertinent exploration and reservoir petroleum case studies

**WHO SHOULD ATTEND?**

Geologists and geophysicists involved in the exploration or development of hydrocarbon-bearing ancient shallow-marine carbonates. Engineers, geophysicists and managers benefit from the scale perspective. Earlier seminars were attended by geologists, geophysicists, engineers, and managers from major/independent oil companies in the U.S., Canada, England, Indonesia, South America, Germany, Norway and Saudi Arabia doing exploration and development geology. Many companies send teams (geologists, geophysicists, engineers).

## **WHY CAICOS PLATFORM?**

Caicos Platform in the S.E. Bahamas contains a complete spectrum of classical Holocene carbonate environments that are ideally suited for applying principles of carbonate sedimentology to petroleum exploration and development geology. Additionally, these sedimentary facies display significant differences from environments in the northern Bahamas and southern Florida. Therefore, one is exposed to a greater variety of controls on carbonate sedimentation than are observable on other Caribbean platforms. This includes newer models related to strong easterly trade winds, which had a dominating influence on many ancient carbonate environments. These relationships will better guide your exploration/exploitation of comparable ancient facies tracts in the subsurface.

Holocene facies observed on this seminar include:

- Mature barrier reef complex and associated environments
- Semi-arid channeled tidal flat complex with evaporites
- Platform-margin and platform-interior oolitic sand shoals and marine-cemented hardgrounds
- Platform-interior muds, peloidal sands and grapestones
- Coastal salinas with preserved evaporites and associated Holocene dolomitization
- Oolitic and skeletal beach ridge/dune complexes and associated freshwater diagenesis

Pleistocene facies observed in outcrop and cores are spectacular, and include:

- Platform-margin barrier reef and associated facies
- Upward-shoaling oolitic sand sequences with superbly preserved sedimentary structures

Our Pleistocene outcrops, borehole and seismic data further permit:

- Reconstruction of leeward platform-margin sequence evolution
- Climatic controls on early diagenetic modification of porosity, including karstification

### **NOTE:**

Two major hurricanes directly hit Caicos Platform since 2008: Category 4 “IKE” in 2008 (135 mph); and Category 5 “IRMA” in 2017 (175 mph). Both storms hit on September 7 of that year, as did Category 4 “DONNA” in 1960. We will show you what effects these three hurricanes had on both the marine and coastal geology on Caicos Platform.

**See these 2017 YouTube videos** from Caicos Platform to view what persistent, strong trade wind wave agitation is like. These videos were shot when the winds were blowing about 20 MPH. This is how ooids are made in stand-up waters on Caicos Platform!

Little Ambergris Cay – active ooid shoal (from Hal Wanless)

<https://www.youtube.com/watch?v=U0hdv7CUVOI>

Little Ambergris Cay – active ooid shoal (from Hal Wanless)

<https://www.youtube.com/watch?v=old6R9K4vv4>

And see our recent publications:

**Dravis, J.J. and Wanless, H.R.,** 2017, Impact of strong easterly trade winds on carbonate petroleum exploration – relationships developed from Caicos Platform, southeastern Bahamas, *Journal of Marine and Petroleum Geology*, v, 85, p. 272-300.

**Dravis, J.J. and Wanless, H.R.,** 2018, Reflux Dolomitization – A Holocene example beneath a coastal salina, West Caicos Island, Turks and Caicos Islands, *Journal of Marine and Petroleum Geology*, v, 97, p. 311-322.

## **INSTRUCTORS**

**Jeffrey J. Dravis:** Consulting petroleum geologist with over 40 years of experience and Adjunct Professor of Geology, Rice University; 8 years with Exxon Production Research and chairman of Exxon's Advanced Carbonate School; field trip leader to Bahamas and south Florida since 1979 and to Caicos since 1982; involved in research on Caicos Platform since 1981; since 1986, has consulted on conventional and unconventional carbonate plays in Ordovician, Permian and Pennsylvanian of west Texas; Jurassic & Cretaceous of U.S. Gulf Coast; Devonian and Mississippian of Western Canada; Devonian of Russia; and Jurassic/Cretaceous of Africa and Mexico, among many other areas.

**Harold R. Wanless:** Professor in the Department of Geography and Regional Studies, University of Miami, Florida and chair of Geological Sciences there for 19 years; consultant and field trip leader for Exxon and Tenneco; researcher in modern and ancient carbonates since 1966; NSF- and industry-funded research on Caicos since 1981. Extensive worldwide ancient carbonate experience.

**Including private versions, we have presented this seminar to industry 73 times!** We have been working on Caicos Platform since the early 1980's. Our 2017 *Journal of Marine and Petroleum Geology* paper summarizes our years of research on Caicos Platform, and some of its key applications to hydrocarbon exploration and exploitation. Contact J. Dravis for a copy, or see the reference noted above.

## **LOGISTICS – Please Read Carefully**

You should plan to arrive in Providenciales, Turks and Caicos Islands, no later than Sunday, June 2, 2024. American and United Airlines fly to Providenciales, as do other airlines from Canada. The seminar ends on Monday, June 10, 2024, **at noon**. Most people depart “Provo” after 3 PM that Monday for Miami and beyond; or they depart anytime the next day (June 11, 2024). If you need to leave early Monday morning to make air connections, let me know.

Each delegate must provide his/her own snorkeling equipment, including a personal safety flotation vest that must be worn at all times in the water. Delegates must be physically fit and in good health, and comfortable in the water. Scuba is **NOT** used on this seminar.

## COST

The fee for the seminar is **\$5,800.00 USD/Person**.

**Discounted Fee is \$5,000.00 USD/person when two or more people from the same company attend.**

The fee includes:

- Seminar introductory meeting in Caicos with lunch and non-alcoholic drinks.
- Local transportation to and from boats.
- Boat charters (5 days).
- Lunches and drinks in the field (delegates are responsible for their breakfasts, one lunch, all dinners & personal bar tabs, however). If you stay at Ports of Call, breakfasts are included with your room.
- Field guidebook with color images and numerous handouts; a detailed summary of our Caicos research and applications.
- Chartered over flight of Caicos Platform (one hour flight; either with a Twin Otter or a 30 seat, twin-engine Embraer [with air conditioning], depending on size of group).
- Travel drive with representative annotated Caicos aerial and underwater color slides, and Caicos Platform applications to hydrocarbon exploration & development geology.

### **Please Read Carefully:**

This seminar is headquartered at the Ports of Call Resort, which is located in the Grace Bay area on the island of Providenciales (<http://www.portsofcallresort.com>). This hotel is where we meet most days for introductory talks, and also board vehicles to be transported to boats. It is located close to many other restaurants, shops, condos and resorts of various price ranges. It is within short walking distance of our caterer (Big Al's Restaurant), who will supply our lunches and drinks when we go out in the boats.

If you stay at Ports of Call, they will hold a block of rooms for this seminar. I will make the room reservation for you to get the discounted rate. The owner of Ports of Call has told me that they will give us a discounted single standard room price of \$175.20 USD per night, plus 27% government taxes. This is a 20% discount for our group. That comes out to \$222.50 USD per day for eight nights, which includes the taxes. **Room also includes breakfast each day.** Room rate is the same for either Single or Double Occupancy (just add \$25 for an extra person); doubling-up saves more. Other bigger rooms are available. See their website for those prices. Specify your room preference (single or double) on this registration form. You pay for your room.

The Ports of Call Resort accepts most major credit cards for payment (Amex; Visa; MasterCard; Discover). If you want other lodging, you are free to make a room reservation elsewhere on Providenciales. But be aware that you will be responsible for your transportation to and from wherever we depart in boats for the field each day.

You are responsible for making your own flight arrangements to Providenciales and back. American Airlines has several flights a day from Miami International Airport to Providenciales. It may be more efficient and less expensive also if you link the American Airlines flight from Miami to Providenciales (Airport code: PLS) as part of your travel to Miami, Florida. Check with American Airlines to confirm exact times. Other airlines fly into Provo from other east-coast cities, as well. American Airlines and United Airlines fly occasionally nonstop from Houston, as well as from other U.S. cities. Flights from Canada to Provo are also possible. In any case, you are responsible for making your flight reservations to Providenciales, and back.

You should plan to arrive in Providenciales sometime on Sunday, June 2nd, or before. On Monday morning, June 3, we will begin the seminar with a series of lectures, followed by lunch, more lectures and then an afternoon snorkel practice. The seminar ends on Monday, June 10th at noon, after a morning of summary application lectures. Most people fly out later that day, or the next day, or they stay over longer to vacation. Call J. Dravis if any questions.

### **REFUND POLICY**

A full refund, less the nonrefundable registration fee (\$300), will be given if written cancellation is received by March 31, 2024. No refunds after March 31, 2024. Substitutions are allowed.

**LATE REGISTRATION** after March 31, 2024, will incur an additional \$500 fee, assuming space is available.

### **IMMIGRATION REQUIREMENTS**

Only passports are required for U.S./Canadian/British citizens; visas are required for most others. **It is your responsibility to determine if you need a visa.** Check with a nearby consulate or embassy. Double check with your travel agent (they have made mistakes in the past for some).

### **TAKE NOTE**

### **TURKS AND CAICOS CORONAVIRUS (COVID-19) UPDATE**

Turks and Caicos is open for tourism. There's no quarantine required. A TCI Assured Travel authorization, insurance, and COVID-19 test are no longer required.

**All travelers are encouraged be fully vaccinated against COVID-19.**

However, the COVID-19 vaccine requirement for visitors aged 18 and over was dropped on **April 1, 2023.**

## ENROLLMENT PROCEDURES

- Complete the registration form below and return with fee payable on a U.S. Dollar Account to  
**Dravis Interests, Inc., 4133 Tennyson St., Houston, Texas 77005**
- Enrollment deadline is: ~~MAY 1, 2024~~ **MARCH 31, 2024**
- Registration is complete only upon receipt of registration form and the seminar fee.  
NOTE: An invoice can be provided upon request, as well as wire transfer instructions.
- Credit card payment also is possible. J. Dravis can take MC, Visa and AMEX over the phone.
- All participants must sign a legal liability waiver.
- Registrants will be sent detailed information on logistics. Phone Jeff Dravis at (713) 819-4444 for more information, or e-mail: [jdravi@rice.edu](mailto:jdravi@rice.edu).

## WEBSITE:

<https://dravisinterests.com/wp-content/uploads/2023/04/2024-Spring-Caicos-E-Brochure.pdf>

## COMMENTS FROM PAST PARTICIPANTS:

“I left Caicos with an entirely new appreciation for the scale and complexity of carbonate deposition and diagenesis that will directly impact the ways in which I approach core, facies models, mapping and seismic interpretation. My experience in Caicos will undoubtedly bring me closer to achieving some “truth” in my carbonate work, now that I’ve seen reality!”

“Getting your feet on the ground is the only way to get a feel for the dynamics of depositional environments, to see the changes from one environment to another, abrupt or transitional, and to understand the scale...I am refreshed and reinvigorated.”

“The time I spent in the Bahamas diving and crawling thru the carbonate mud's and shells gave me an extraordinary understanding of the many Miss. cores I had examined. The ancient rocks came to life when I saw the modern carbonates. I recall standing in a mudflat as we pulled a 4-6 ft short core from the ground. The laminated algal mats and mud's and salts immediately came alive as I related them to the ancient cores I had so many times examined and the well logs that I then understood!. I can't say enough of how valuable the school was for me as a young carbonate geologist!!”

“Just wanted to take a minute to thank you again for an excellent session last week. It was certainly demanding both technically and physically but every time I pick up the course book (read some more on the plane home) it makes more and more sense to me. I also wanted to mention that the logistics were very well handled and it's easy to see that is no walk in the park considering all the variables out of your control. We were certainly well chaperoned at all levels and well fed and watered along the way including some upscale food and drink that was much appreciated after a long day.”

"Quite frankly, it was one of the best seminars that we have had the privilege to attend. The concepts and field observations presented during the course will definitely have an effect on our reservoir modeling..."

"To see the spatial relationship of reservoir potential to depositional setting in the modern was invaluable."

"Reefs are complex. No more big blue blobs on seismic."

"I also wanted to thank you for the great trip. I thought the outcrops to be the best carbonate outcrops I have ever seen! What a great natural laboratory, having living reef and Pleistocene reef outcrops adjacent to each other."

"Geologists should bring their reservoir engineer with them. That way, the whole exploration team can get on the same page in terms of facies and reservoir distribution."

"I improved my understanding of the geological setting. Allows reasonability checks of my seismic interpretation. Increased my knowledge of where and how to search for porosity."

"This seminar was not a snorkeling 'vacation.' I feel I learned a lot and my company got their money's worth."

"We don't think twice about spending \$10,000 to buy a seismic line to help us understand or define a play. This course does infinitely more in terms of understanding carbonate plays and will go a long way toward generating new ones."

"And thanks to you and Hal for the great seminar. I look at my maps in a different way now."

"Again, thanks for the recent Caicos field trip. You run the most professional field trip of those that I have attended..."

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**REGISTRATION FORM (JUNE 2-10, 2024)**

NAME \_\_\_\_\_ NATIONALITY \_\_\_\_\_

COMPANY \_\_\_\_\_

TITLE & YRS. EXPERIENCE \_\_\_\_\_

ADDRESS \_\_\_\_\_

CITY \_\_\_\_\_ STATE \_\_\_\_\_ ZIP \_\_\_\_\_

BUSINESS PHONE ( ) \_\_\_\_\_ FAX ( ) \_\_\_\_\_

E-Mail: \_\_\_\_\_ ROOM (Single or Double?) \_\_\_\_\_

T-SHIRT SIZE: \_\_\_\_\_

SWIMMING/SNORKELING EXPERIENCE \_\_\_\_\_

\_\_\_\_\_

**CHECKS PAYABLE TO:**

DRAVIS INTERESTS, INC., 4133 TENNYSON ST., HOUSTON, TEXAS 77005.

**WIRE TRANSFER OF PAYMENT IS POSSIBLE AND PREFERRED**

(Contact J. Dravis for bank wiring instructions)

**REGISTRATION DEADLINE IS NOW MARCH 31, 2024.**

Credit card payment over the phone is possible; check with J. Dravis.

**NOTE:** This seminar is always available to be presented on a private basis.