July 2004

Newsletter

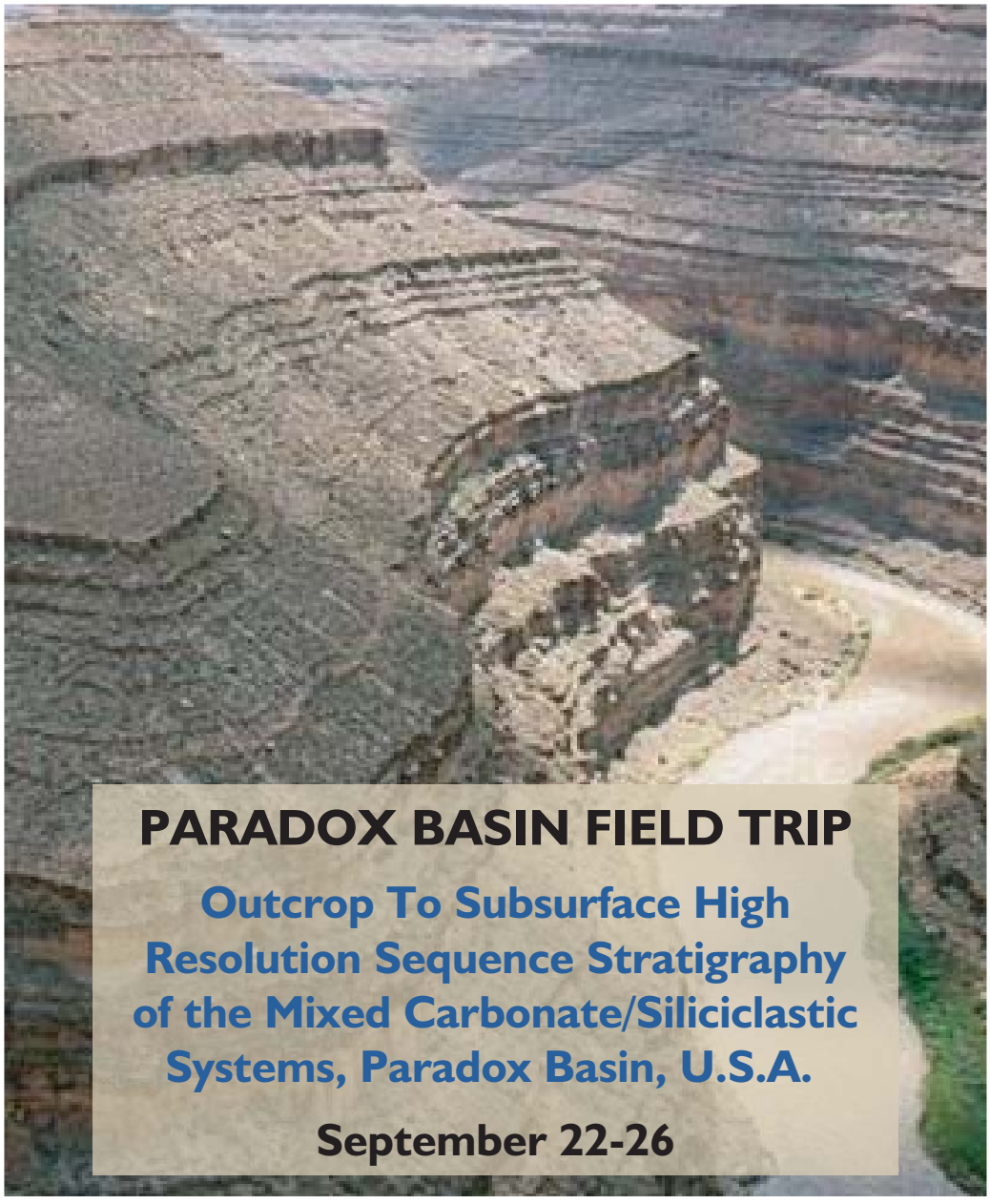
Comparative Sedimentology Laboratory

2004 Annual Review Meeting

Comparative Sedimentology Laboratory

September 20-21

followed by



PARADOX BASIN FIELD TRIP

Outcrop To Subsurface High Resolution Sequence Stratigraphy of the Mixed Carbonate/Siliciclastic Systems, Paradox Basin, U.S.A.

September 22-26

LOGISTICS

ANNUAL REVIEW MEETING MIAMI

September 20 - 21, 2004

Arrival: We recommend that you arrive in Miami on the evening of September 19th. The meeting will begin at 8:30 AM on the morning of September 20th in the seminar room at the University of Miami's Rosenstiel School of Marine & Atmospheric Science (RSMAS), 4600 Rickenbacker Causeway. The seminar room is in the Science/Administration Bldg., Rm. 103. We will provide transportation to the School; please meet in the lobby of the Hotel at 8:00 AM.

Departure: The meeting ends September 21 at approximately 4:30 pm. Those who do not attend the fieldtrip could leave the same evening.
Fieldtrip participants should make their own reservations for flights to Durango, CO on September 22, 2004. We recommend:

United Airlines #391 to Denver, departing Miami at 8:00 am and connecting flight on
United Express #7017 to Durango leaving Denver at 11:25 and arriving in Durango at 12:50 pm.

The field trip ends on Saturday, September 25, 2004 in Durango around 5:00 PM. A hotel room will be reserved for you for that night and you can book your flight out of Durango on Sunday, September 26, 2004.

Accommodation in Miami: As soon as we know how many people will be attending the Annual Review meeting, will reserve a block of rooms for the nights of September 19th, 20th and 21st (for field trip participants) at the University of Miami rate of $109.00 at the

Sonesta Hotel & Suites Coconut Grove,
2889 McFarlane Rd, Coconut Grove.

We will only reserve a block of rooms - YOU WILL NEED TO CALL TO MAKE YOUR OWN RESERVATION. **We must first know the number of people that will be attending as we have to sign a contract with the hotel so please send us your name, address, and email address as soon as possible. As soon as we know who will be attending we will send an email, to those individuals, with the hotel information so you can call to make your own reservation.**

Please contact Karen Neher as soon as possible until July 30th 2004

Karen Neher: 305 421 4684 kneher@rsmas.miami.edu

Afterwards contact Avis Miller
Avis Miller: 305 421 4662 amiller@rsmas.miami.edu

TENTATIVE PROGRAM
Comparative Sedimentology Laboratory
2004 Annual Review Meeting

Monday, September 20 — Morning

08:30 Welcome and coffee
08:45 Introduction, *Gregor Eberli*

Theme I: Carbonate Systems and Reservoir Characterization

09:00 Landscape structure of creeks, networks, and facies, Andros Island: implications for multi-scale spatial heterogeneity in reservoir analogs
Gene Rankey

09:20 Mineralogical, organic, and sedimentary microfabric characterization of Holocene sediments of the Great Bahama Bank
Robert Otto and Peter Swart

09:40 Cape Sable in times of transgression: sediment dynamics and perhaps.....a new stratigraphy model?
Brigitte Vlaswinkel and Gene Rankey

10:00 Three-dimensional sedimentologic architecture and geometry of the Pleistocene Miami Oolite: integrated core and GPR observations
Kelley Steffen, Gene Rankey, and Mark Grasmueck

10:20 Coffee break

11:00 Using high-resolution 4-D GPR to image fluid flow within the Miami Oolite
Steve Truss, Mark Grasmueck, David Viggiano, and Sandra Vega

11:20 What are the physical causes of GPR reflections in an oolitic environment? Modeling and preliminary lab results
Sandra Vega, Mark Grasmueck, and Steve Truss

11:40 Facies, geometry, and early fracturing of a mixed-system platform: Bocas del Toro, Panama
Donald F. McNeill

12:00 Lunch

Monday, September 20 — Afternoon

Theme I: Carbonate Systems and Reservoir Characterization

13:30 Geomorphology, grain attributes and fluid flow in a mixed carbonate-clastic tidal delta
Kelley Steffen and Gene Rankey

13:50 Drowned platforms in the Bahamas foreland Basin
Kelly Bergman, Gregor Eberli, Jose Luis Massaferro, and Tony Poiriez

14:10 Tectonostratigraphic co-evolution of the Antler foreland basin and Lower-Middle Mississippian prograding carbonates: quantifying the impacts of lithospheric strength on accommodation development
Matthew Buoniconti, Gregor Eberli, and Langhorne "Taury" Smith

14:30 The role of hydrothermal fluids on the reservoir quality of Mississippian Madison carbonates
David Katz, Gregor Eberli, Langhorne "Taury" Smith, Peter K. Swart, and Jason Kislak
14:50 Coffee break
15:30 3-D anatomy of dolomitized strike-slip faults at Tribes Hill (NY): integration of 3-D GPR survey with surface geology, mineralogy and isotopes
Mark Grasmueck, David Viggiano, and Langhorne "Taury" Smith
15 50 Sequence stratigraphy, porosity and velocity: indicators for fracture prediction
Layaan Al-Kharusi and Gregor Eberli
16 10 The Super-K In The Arab-D Dolomites: Revealed
Peter Swart and Dave Cantrell
15:00 Reception

Tuesday, September 21 Morning

Theme II: Petrophysics of carbonates

08:30 Effects of porestructure on sonic velocity in carbonates
Ralf Weger, Gregor Baechle, and Gregor Eberli
08:50 Saturation and pressure effects on sonic velocity of carbonates
Gregor Baechle, Gregor Eberli, and Ralf Weger
09:10 Porosity-permeability relationships in highly permeable Miocene carbonate platforms offshore Australia
Gregor Eberli, Steve Ehrenberg, Gregor Baechle, and Heike Delius
09:30 The role of macro- and microporosity in relating velocity to permeability in carbonate rocks
Gregor Baechle, Ralf Weger, and Gregor Eberli
09:50 Coffee Break
10:20 Sonic velocity and permeability of dolomites
Ralf Weger, Gregor Baechle, and Gregor Eberli

Theme III: Geochemistry and diagenesis of carbonates

10:40 Dolomitization of the Marion platforms offshore Australia
Kathleen Willis, Gregor Eberli, Peter Swart, and Steve Ehrenberg
11:00 Carbon isotope stratigraphy questioned
Peter Swart and Gregor Eberli
11 30 Lunch

Tuesday, September 21 Afternoon

Theme IV: Future plans

13:00 Presentation of future projects & discussion
15:00 Coffee Break
15:30 Introduction to the field trip to the Paradox Basin
16:30 Meeting adjourned

Fieldtrip Paradox Basin

Outcrop To Subsurface High Resolution Sequence Stratigraphy of the Mixed Carbonate/Siliciclastic Systems, Paradox Basin, U.S.A.

September 22 - 26, 2004

Fieldtrip leaders: Gregor Eberli & Layaan Al-Kharusi

Field Trip Costs: US$ 1200. - per person-

Included are: transportation from Durango, CO to Bluff, UT, boat on the San Juan River, hotels (double occupancy), meals until Saturday midnight. Your airfare to and from Durango is not included. An invoice will be e-mailed to you after registration.

Reservations

Please e-mail or call **Karen Neher** and **cc Gregor Eberli** as soon as possible and **no later than August 15, 2004**

Karen Neher: 305 361 4684 kneher@rsmas.miami.edu
Gregor Eberli: 305 361 4678 geberli@rsmas.miami.edu

Accommodations for Fieldtrip:

Rooms have been reserved (no action required by you) for the participants of the fieldtrip in the following hotels:

9/22- 9/25 Desert Rose Inn, Bluff, Utah
Phone: 435-672-2303

9/25-9/26 Doubletree, Durango, CO
Phone: 970-259-6580

Clothing and Field Equipment

For the field, you will need the items for two field days at outcrops plus one day on the river. The weather in the Paradox Basin can be from hot to cold. "Layering" your clothing will enable you to weather anything.

For the field days you need: hiking boots, short and/or long pants, sweater, rain gear or wind breaker, sun glasses (Polaroid) and a hat as well as a small back pack with your field equipment (camera, hammer, and hand lens).

For the river day, you additionally need shorts or swimsuit, short sleeve shirt or T-shirt, river sandals or canvas shoes that can (and will) get wet, rain jacket or poncho.

In the evenings, when it cools down, you need a sweater and long pants.

Items We Will Provide

Lunches and drinks, guidebooks, sample bags, and dry storage for your camera and gear on the river raft.

FIELD TRIP OBJECTIVES

Upper Paleozoic rocks in the Paradox basin of southwestern Colorado and southeastern Utah contain large hydrocarbon resources in subtle stratigraphic traps within a cyclic deposition of mixed carbonates, siliciclastics and evaporites. Deeply incised canyons along the San Juan River provide spectacular exposures of rocks lateral to the oil producing reservoirs in the nearby subsurface.

The goal of the field trip is to demonstrate how outcrop and subsurface data are integrated to develop reservoir models and in particular within the context of a predictive sequence stratigraphic framework. We will present the results of this year's fracture study in the basin. 3-D seismic data from a producing field will provide the subsurface data to discuss the exploitation strategy in these systems and compare to the production strategy in the Aneth Field. Geological, seismic and petrophysical data are integrated with the geology to refine and validate geologic concepts and develop an understanding of interwell- and reservoir-scale heterogeneities.

We will utilize the outcrops to examine the mixed carbonate-siliciclastic-evaporite depositional system that may be analogous to other oil producing basins. We will pay particular attention to the cyclic nature of Pennsylvanian strata and the vertical and lateral variations of reservoir and associated facies.

The vertical facies successions and cyclic nature of the strata will be studied in sections at Raplee Anticline and Honaker Trail. With river rafts we will reach the algal mound field at 8-Foot Rapid where we will observe the dimensions and heterogeneities of an exhumed algal mound field and relate it to subsurface data. The field sections will be used as points for discussion the significance of lateral and vertical variability observed in outcrop for the exploration and production history in the basin.

ITINERARY

Wednesday, September 22 — Travel to Bluff, Utah

06:30 Check in at Airport at United for flight #391
08:05 Flight leaves to Denver = United Airlines #391
11:25 Flight to Durango = United Express #7017
12:50 Arrival in Durango

Lunch in Durango then travel to Bluff, Utah

17:30 Arrival in Bluff, dinner and introductory discussions.

Thursday, September 23 — Honaker Trail

Travel to Honaker Trail with Stops at Gooseneck's Overlook.
All day hike along Honaker Trail. Lunch will be provided.
Sunset at Monument Valley. Group Dinner.

Objectives:
Basic orientation and field setting, introduction to the Paradox Basin stratigraphy, cycles and sequences; issues of scales and vertical reservoir heterogeneity; fractures in flat-lying strata.
Goosenecks Overlook - general overview of section, orders of cyclicity, lateral facies changes.

Friday, September 24 — 8-Foot Rapid algal mounds

All day raft trip on San Juan River from Bluff to Mexican Hat. Lunch provided.
Return to Desert Rose Inn. Group Dinner.

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Objectives:
Examine algal mound field exposed along San Juan River, in particular mound geometries and distribution and lateral and vertical variability of reservoir facies (algal mounds and ooid shoals); porosity and permeability distribution within mounds; petrophysical characteristics and comparison to seismic and log data.

Saturday, September 25 — Raplee Anticline and Aneth field

Travel to Raplee Anticline. Hike along the Raplee Anticline section. Lunch provided.
Travel to overlook on Aneth Field for discussion on production strategies.
Travel to Durango. Group Dinner.

Objectives:
RapleeAnticline - walk-through entire section exposed along west flank of anticline to examine the transgressive to regressive character of the Desert Creek, Lower Ismay and Upper Ismay sections, general facies types, vertical stacking patterns of high-frequency cycles (3-10 meter scale), biostromal mound geometries, and stacked ooid shoals.
Aneth Overlook - observe 40 acre spacing, discuss development and completions strategies of the field.

Sunday, September 26 — Travel Home

Travel home on your own. The Doubletree operates a shuttle to the airport.