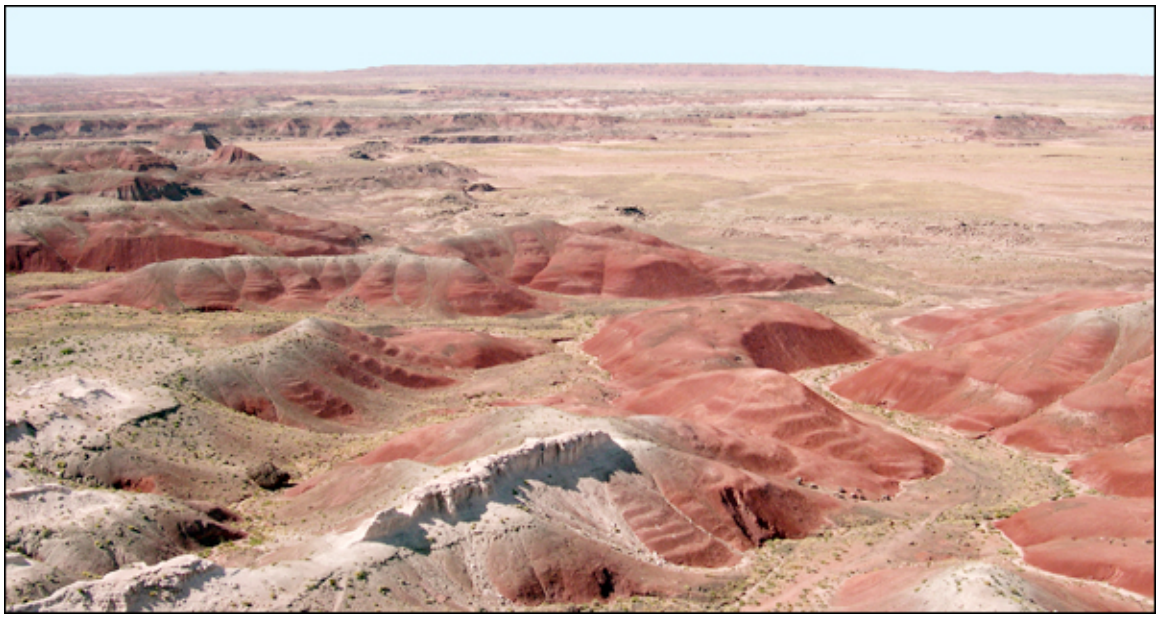

Colorado Plateau Coring Project (CPCP) Workshop

Dates: The CPCP Workshop will take place from 7:00 PM on the evening of November 13 to 5:00 PM on the afternoon of November 16. Participants should plan to arrive on the afternoon of November 13 and to leave on the evening November 16 or the morning of November 17.

Place: The hotel and conference location is the Hilton Garden Inn in St. George, Utah. The city of St. George is located on the western edge of the Colorado Plateau nestled among spectacular outcrops of early Mesozoic continental sedimentary rocks. It is 130 mi northeast of McCarran International Airport at Las Vegas, NV, which is about a 2 hr drive, and 41 mi west of Zion National Park, which is about a 50-minute drive. We will arrange a shuttle from McCarran International Airport at Las Vegas to the Hilton Garden Inn in St. George and back a limited number of times depending on demand on November 13th, 16th, and 17th.

> Hilton Garden Inn in St. George, Utah Address: 1731 Convention Center Drive, St. George, Utah, USA 84790,Tel: +1-435-634-4100, Fax: +1-435-634-4101
> Hotel Website:

We have a block of 60 rooms reserved at the Hilton Garden Inn and reservations MUST be made by October 13.

Workshop Organizers: Paul E. Olsen, Lamont-Doherty Earth Observatory of Columbia University, New York, NY (polsen@ldeo.columbia.edu)
Dennis V. Kent, Department of Geological Sciences, Geological Sciences Labs Building, Rutgers University, Piscataway, NJ (dvk@rci.rutgers.edu)
John W. Geissman, Department of Earth and Planetary Sciences, MSCO3-2040, 1 University of New Mexico, Albuquerque, New Mexico (jgeiss@unm.edu)

Costs: We have received a grants from DOSECC and NSF to offset workshop costs. Participants are responsible for making their own travel and lodging reservations. The cost of food at the ice-breaker, banquet, and one lunch will be directly covered by us. All other meals will be the responsibility of the participants, as will the cost of all alcohol. Participants will be reimbursed up to $1000 for travel, food, and lodging costs. Funds left over from unused domestic travel reimbursement will be used to subsidize any additional travel costs incurred by our international colleagues.

Website: **http://www.ldeo.columbia.edu/~polsen/cpcp/CPCP_home_page.html**
We have set up a web site to advertise to the scientific community and to communicate with participants. Please periodically check in to catch any changes to the itinerary.

CPCP WORKSHOP CONCEPT, OBJECTIVES, AND TENTATIVE SCHEDULE

Concept: The Colorado Plateau is the textbook example of layered sedimentary rocks in North America, representing the depositional history of the western Cordillera during much of the Paleozoic and Mesozoic. Although visually striking in the walls of canyons and mesas (e.g., Grand Canyon,), the strata are difficult to access for continuous descriptions, appropriate sampling density, and logs of environmentally significant proxies necessary to understand their history, despite more than two centuries of geologic, paleontologic, and resource exploration. This is especially true for Early Triassic to Early Jurassic age strata, which are part of a vast (~2.5 million km2) mostly non-marine depositional basin in the western part of Pangea that record regional and global tectonic and biotic evolution events including controversial crustal block rotations related to Pangea rifting and younger events, and one of the five largest extinctions of the Phanerozoic. A relatively modest scientific coring project, concentrated on this time-stratigraphic interval on the Colorado Plateau, coupled with less extensive coring over the lower part this target interval off the Plateau, would provide quintessential continuous reference sections to place the regional and global events of more than 60 million years of Earth History, as well as the 200 years of previous geoscience study, in a more precise chronostratigraphic and paleogeographic context.

Why the Triassic-Jurassic ?

- Massive plate tectonic reorganization with initial stages of the breakup of Pangea
- Emplacement of at least 3 giant flood basalt provinces (Siberian, Camp, Karoo-Ferrar)
- End member of Earth's climate system - extreme greenhouse conditions with no evidence of polar ice
- Evolution of all major extant groups of terrestrial vertebrates
- Establishment of modern extant invertebrate groups in present ecological roles
- Two major and one minor mass extinctions (Permo-Triassic, Triassic-Jurassic, end-Pliensbachian)

Why the Colorado Plateau ?

- It is the textbook example of layered sedimentary rocks
- It some of has the thickest and most well studied Triassic-Jurassic continental sequences
- It has some of the most fossiliferous continental strata in the world
- The strata represent a diverse suite of depositional environments of tropical Pangea
- The deposits span the Triassic-Jurassic boundary, one of the five largest extinctions of the Phanerozoic
- But, further progress is impeded by the striking lack of temporal resolution and uncertainties in global correlations
- Especially true of the tectonic history recorded by strata, including sequence boundaries and block rotations

Drilling Rationale

Of all the tectonic provinces in the western Cordillera, the Colorado Plateau has the thickest and most well studied Paleozoic and Mesozoic continental sequences as well as some of the most fossiliferous strata. Classic exposures of the Moenkopi Formation (Early and Middle Triassic age), Chinle Group (Late Triassic), and Glen Canyon Group (latest Triassic and Early Jurassic) in the American Southwest contain abundant megafossil plants, palynomorphs, microfossils, marine and non-marine invertebrates, and abundant and classic vertebrates (Lucas, 1998). These deposits represent a diverse suite of depositional environments and ecological niches of tropical Pangea, many of which are not represented in other Pangean basins. Obtaining sufficiently detailed chronostratigraphic and lithologic logs shoould allow the local response to Milankovitch forcing to be worked out by correlating the fluvial, eolian, and shallow lacustrine Colorado Plateau strata with established cyclicity in the contemporaneous eastern North American Early Mesozoic lacustrine sections. At least locally, deposition seems to have been essentially continuous across the Triassic-Jurassic boundary. Despite the long history of productive work, further progress is impeded by the striking lack of temporal resolution and uncertainties in global correlations with other lower Mesozoic strata, specifically on a global scale, and this deficiency hampers integrating the vast amount of information from the region into the global picture. Although the American Southwest, including the Colorado Plateau, is justifiably famous for spectacular exposures and striking badlands, many of the thickest sections are in the subsurface and the most continuous outcrops are either in inaccessible vertical cliffs or are heavily weathered, making sampling at the appropriate level of resolution practically impossible.

A focused coring program in Triassic through Lower Jurassic strata on and east of the Colorado Plateau would result in a quantum leap in our insight into issues of Pangean chronology, paleogeography, paleoclimate, and biotic evolution that also include those associated with the Triassic-Jurassic boundary.

Workshop Goals (can be modified during meeting)

1. Identification of clear, major hypotheses testable by coring the Early Mesozoic on and off the Colorado Plateau.
   - How are the hypotheses ranked?
2. Plan for complete cored section of the lower Mesozoic of the Colorado Plateau
   - How many coreholes?
3. Rational for selecting youngest stratigraphic level to core
   - Science issues for selection
4. Plan for complete cored section of Triassic off Plateau
   - How many coreholes?
5. Strategy to assure sufficient stratigraphic overlap between cores to assess lateral continuity
   - How much overlap?
6. Plan for coring in appropriate proximity to sources of surface data to assure registry
   - How close?

Tentative Basic Schedule

Tuesday, November 13:
Participants arrive
Ice breaker and overview in evening
Wednesday, November 14:
Plenary Session: Introduction, Science questions
Definition of break-out groups
Naming of rapporteurs:
Lunch
Breakout groups meet
Supper:
Evening discussion
Thursday, November 15:
Work on breakout reports:
Lunch at The St. George Dinosaur Discovery Site at Johnson Farm
Field Trip to Zion National Park
Workshop Banquet at the Gun Barrel Steak and Game House
Evening discussion
Friday, November 16:
Presentation of prefaces of breakout reports by rapporteurs
Tune up reports:
Lunch
Breakout reports Completed.
Final remarks and meeting closure
Some participants may wish to depart
Saturday, November 17:
Most participants leave

Important Dates

Oct 1. Commitment of participants to meeting
Oct 13. Remaining reserved rooms dropped
Oct 25. Deadline for abstracts on plenary talks
Oct 25. Deadline for reserving space on field trip
Oct 25. Deadline for sending flight information and reserving DOSECC van shuttle
Nov 13. Arrive at workshop
Nov 14. First full day of workshop
Nov 15. Field trip to Zion
Nov 16. Last day of Workshop
Nov 17. Most Participants leave

If you wish to attend, please email Paul E. Olsen, Lamont-Doherty Earth Observatory of Columbia University, New York, NY (**polsen@ldeo.columbia.edu.edu**)

Please Note: Please check periodically the workshop's www site for updates.
http://www.ldeo.columbia.edu/~polsen/cpcp/CPCP_home_page.html