

## **Cooperation in Scientific Ocean Drilling: Forging Industry-Academic Partnerships**

October 15-16, 1999, Houston, TX  
The Warwick Hotel

### **Potential ODP-Industry cooperative research topics**

The bold topics (5) were the ones democratically chosen as highest priority by the workshop participants.

1. Compaction and controls on it - How is compaction controlled by state of stress, primary & secondary wave velocities, lithology, pore pressure, temperature & time, and other physical properties?
- 2. Latitudinal variation in C-cycle - Is there a relationship between the geographic distribution of carbon and paleoproductivity (production) & source rocks (preservation)?**
3. Quality of hydrocarbons - What dictates the quality of hydrocarbons? Factors here relating to tectonics, fluid flow, microbial activity, and thermal properties?
4. Chronostratigraphy/deep-water benthic fauna - What is the time stratigraphic significance of the deep-water faunas? What are their water-mass distributions and migration histories? How can we calibrate the older taxa, particularly for predictive applications relating to Mesozoic paleobathymetry?
5. Pore water chemistry/salinity - What physical/biological factors control the variation seen in pore water chemistry/salinity?
- 6. Distribution of gas hydrates - What parameters control their distribution? The availability of hydrocarbon for these deposits is related to?**
- 7. Overpressure-mechanisms and generation - What is the relationship of overpressure to compaction, disequilibrium, and other possible generative causes? May they be structurally induced? Contrasts in the overpressure regimes of continental margin vs. abyssal plain settings?**
8. Heat distribution along passive margins - What is the relationship of heat to fluid movement, the relative importance of conduction vs. convection processes, and an explanation of the variation of present-day anomalies in heat flux along passive margins?
9. Evolution of physical properties of hydrocarbon seals - What are the elements of a seal that enable it to confine oil and/or gas? How to these factors relate to physical and chemical diagenesis?
10. Late rifting stages - What are the geological events associated with initial break-up, particularly as they relate to faulting, salt movement, heat injection (thermal history), and general deformation mechanisms?
11. General uplift/subsidence of continental margins - Can a general history of continental margin uplift and subsidence be derived?
12. Exhumation of passive margins - Why do passive margins exhume? What are the post break-up mechanisms for inversion (pop-up) events? Why do they form where they do (in both time and space)?
13. Salt/shale tectonics - How are these materials emplaced? What is the nature of the salt/sediment interface (pressure, fluids, and composition) and the bio-lithostratigraphic inversion? What are the rock mechanical & rheological properties of these substances?

14. Arctic Ocean and seaways - What is the fundamental stratigraphy, thermal history, chronostratigraphic framework, ridge/rift structure, and spreading nature and timing of the Arctic Ocean and its associated seaways? Connections to Tethys? The nature of the Eurasian/North American plate boundary? The seaways: their sediment sources, paleoproductivity, and paleocirculation?
15. Interaction of plumes and spreading ridges - Is the association of mantle plumes with spreading ridges coincidental? What is the nature of their uplift, heat flow, and effects on margins?
16. Slope stability - When and why do they become unstable?
17. Liquid CO<sub>2</sub> sequestering and greenhouse gas monitoring - What can we contribute to the discussions of greenhouse gas management?
- 18. Predictive nature of sequence stratigraphy models - What is the predictive value of the Vail/Exxon "eustatic" curve, and can it be adequately tested?**
- 19. Turbidite facies and architecture - What factors explain sand distributions, rates of failure and subsidence, migration of deep marine channels & resulting internal connectivity, and channel filling during bypass and abandonment phases? When do levees contain significant amounts of sand? Can we determine global base-level (vs. climatic & tectonic) controls adequately? What is the origin of onlap patterns on basin margins? What is the distribution of, and what are the controls on, HARP deposition?**

**Following topics were presented during the workshop as existing or possible future ODP proposals involving both academia and industry**

<b>Topic</b>	<b>Champion</b>
New Jersey near-shore	Greg Mountain mountain@ldeo.columbia.edu
Grand Banks slope/basin	Mike Enaschescu enachesj@cadvision.com
Scotian Shelf – deep water (Cret.-Neogene)	David Brown dbrown@cnsopb.ns.ca and David Piper
Maldives – Oligocene-Miocene	Andrei Belopolsky andrei@rice.edu
Rockall/Norwegian Margin (Cret.-Neogene)	Felix Gradstein felix.gradstein@saga.com
N.E. Greenland Shelf	Tony Dore tony.dore@statoil.com
Gulf of Mexico – Pleistocene Fluid, Faults and Turbidites	Peter Flemings flemings@essc.psu.edu and Hans Nelson hans@ocean.tamu.edu

### **Proposal Tips - Contents of an initial proposal**

- Proposal Executive Summary
- Topic
- Scientific objective
- Type of area
- Type of platform
- Special technologies
- Contact Person: Name, Address, E-mail, Telephone, Fax
- Content:
  - o 3 pages text – bullets
  - o Map – cross section
  - o Model
  - o 3D figure
  - o etc.