

**Preliminary Schedule**  
**AGU Chapman Conference on the Role of Marine Organic Carbon and Calcite**  
**Fluxes in Driving Global Climate Change, Past and Future**  
**24-27 July 2005**  
**Woods Hole, Massachusetts, USA**

**Sunday 24 July 2005**

Time	Speaker	Invited/ Contributed	Title
8:30 – 8:45h			Introduction to Conference
8:45 – 9:30h	D. Archer	Invited	The Scientific Frontier of the Twilight Zone
9:30 – 10:00h	R. Zeebe	Invited	Organic and Carbonate Carbon Fluxes, Ocean Carbonate Chemistry, and Atmospheric CO <sub>2</sub>
10:00 – 10:30h	J. Sarmiento	Invited	Estimates of CaCO <sub>3</sub> Production and Export in the World Ocean
10:30 – 11:00			Coffee Break
11:00 – 11:30h	A. Watson	Contributed	Carbonate and Organic Carbon Production in the Photic Zone
11:30 – 12:00h	F. Chai	Invited	Influence of Diatoms on Ecosystem Functioning and Carbon Cycle: An Equatorial Pacific Story
12:00 – 13:00h			Lunch Break
13:00 – 13:30h	D. Hutchins	Invited	Elevated Temperature and pCO <sub>2</sub> Effects on Algal Community Structure in the Bearing Sea: Potential Biological Impacts and Biogeochemical Feedbacks
13:30 – 14:00h	G. Watson	Invited	Simulating the Distribution of Coccolithophores in Relation to Other Phytoplankton Functional Groups in the Global Oceans
14:00 – 16:00h			Poster Session 1A: Production & 1B: Export

**Monday 25 July 2005**

8:30 – 9:00h	Zondervan		What Controls the Surface Ocean's Biogenic Calcium Carbonate to Carbon Production Ratio?
9:00 – 9:30h	A. Winguth	Invited	Simulated Present and Future Changes of the PIC:POC Ratio
9:30 – 10:00h	Ziveri	Invited?	What Controls Coccolith Carbonate Fluxes?
10:00 – 10:30h			Coffee Break
10:30 – 11:00h	U. Passow	Invited	Marine Snow – Processes Determining the Flux of POC, Calcium Carbonate, Opal and Terrigenous Material
11:00 – 11:30h	Wakeham	Invited	The Flux of Particulate Material in the Ocean and New Insight into the Mechanisms That Drive It
11:30 – 12:00h	Paytan	Invited	Organic Matter Composition, Recycling Susceptibility, and the Effectiveness of the Biological Pump: An Evaluation Using NMR Spectra of Marine Plankton
12:00 – 13:15h			Lunch Break
13:15 – 13:45h	Jackson	Invited	The Role of Coagulation in Particle Transport

13:45 – 14:15h	L. Stemman	Invited	Marine Aggregates Dynamics in the Upper 1000m Depth Water Column Inferred From a 10 Years Ocean Survey Using the Underwater Video Profiler
14:15 – 14:45h	C. Klaas	Invited	Mineral Composition and Particulate Organic Carbon Flux in the Upper Water Column
14:45 – 15:15h	Lam	Contributed	The Fluffiness Factor for Ballasting: Lowering the Effective Density of Biogenic Silica
15:15 – 15:45h			Coffee Break
15:45 – 17:00h	Open Microphone		Community Discussion 1: Issues of Production and Water Column Fluxes
17:00 – 19:00h			Dinner Break
19:00 – 21:00h			Student Round Table

### **Tuesday 26 July 2005**

8:30 – 9:00h	Broecker	Invited	
9:00 – 9:30h	Berelson	Invited	The Flux of Carbonate and Organic Carbon to Deep Sediment Traps and to Sediments: The Coupling of Corg:bSI in Margin Settings and Cogr:CaCO <sub>3</sub> in Open Marine Settings
9:30 – 10:00h	Anderson	Contributed	Redistribution of Silicon in the Glacial Ocean? A Test of the Silicic Acid Leakage Hypothesis
10:00 – 10:30h			Coffee Break
10:30 – 11:00h	Kienast	Invited	Biogenic Fluxes in the Eastern Equatorial Pacific
11:00 – 11:30h	Mekik	Invited	Reconstructing the Rain Ratio in the Eastern Equatorial Pacific
11:30 – 12:00h	Murray	Contributed	Sources of Fe to the Central Equatorial Pacific Ocean in the Holocene and Pleistocene
12:00 – 13:30h			Lunch
13:30 – 14:00h	Chase	Invited	Radiochemical Tracers of Particle Flux and Particle Composition
14:00 – 14:30h	Stoll	Invited	Geochemical Indicators of Coccolithophorid Productivity
14:30 – 15:00h	Loubere	Invited	Pacific-Atlantic Thermocline Circulation and Biogenic Fluxes
15:00 – 17:30h			Poster Session 2: Flux Variation in Time
17:30 – 20:00h			Clam Bake

### **Wednesday 27 July 2006**

8:30 – 9:00h	A. Ridgwell	Invited	PETM Signature of the Rain Ratio?
9:00 – 9:30h	J. Zachos	Invited	CCD/Lysocline Shoaling and Recovery During the Paleocene Eocene Thermal Maximum: Implications for Long-term Carbon Sequestration
9:30 – 10:00h	H. Elderfield	Invited	Past Changes in Carbon and Calcium Carbonate Fluxes
10:00 – 10:30h			Coffee Break
10:30 – 12:00h	Open Microphone		Community Discussion 2: Synthesis of our State of Knowledge

**Poster Session 1A: Production, Sunday, 24 July 2005 2:30 – 4:00PM**

First Author	Invited/ Contributed	Title
Austin, W.	Contributed	Archival Phytoplankton: Towards a Seasonally Resolved Record of the 13C Suess Effect in the NE Atlantic, 1948-Present
Brauch, J. P.	Contributed	Changes in Land Vegetation and the Marine Carbon Cycle After a Breakdown of the Thermohaline Circulation
Chou, W. C.	Contributed	Estimated Net Community Production During the Summer Season at SEATS Time-series Site, Northern South China Sea: Implications for Nitrogen Fixation
Conte, M. H.	Contributed	The Oceanic Flux Program Time-Series Record of Organic Carbon and Carbonate Fluxes in the Deep Sargasso Sea
Fujii, M.	Contributed	Modeling Carbon and Silicon Cycling in the Equatorial Pacific
*Izumi, R.	Contributed	Investigating the Impact of Anthropogenic CO <sub>2</sub> on Surface Ocean pH Using an Earth System Model (ESM)
McKinley, G. A.	Contributed	Understanding Ocean Processes with Inert Gas Observations and Models
*Prasad, M. B. K.	Contributed	Dynamics and Biogeochemistry of Carbon in a Tropical Mangrove Ecosystem of Southeast India
Schmittner, A.	Contributed	Fluxes of POM and Calcite in a Global Ocean Ecosystem – Carbon Cycle Model and Their Influence on Nutrient, DIC, Alkalinity and Oxygen Distributions
*Tjiputra, J.	Contributed	Optimization of marine Particulate Organic and Inorganic Carbon Fluxes Parameterizations by Assimilation of In Situ Observations into an Adjoint Ecosystem Model
Tseng, C.-M.	Contributed	Temporal Variability of Mixed-layer Oceanic CO <sub>2</sub> Species at the SEATS
Wang, X.	Contributed	Primary Productivity and Export Production in the Equatorial Pacific: Ecosystem and Biogeochemical Controls
Wang, X.	Contributed	Net Community Production, New Production and Export Production in the Upper Water Column of the Equatorial Pacific: Linkage and De-coupling

**Poster Session 1B: Export, Sunday, 24 July 2005 2:30 – 4:00PM**

Acker, J. G.	Contributed	Can Estimates of Global Neritic Carbonate Export from Reefs and Carbonate Platforms be refined Using Remote Sensing
Brown, C. W.	Contributed	Assessing the Physical Environment Associated with Coccolithophorid Blooms
Escobar, E.	Contributed	Carbon Stable Isotopic Composition and Characterization of Particles in Offshore Waters of the SW Gulf of Mexico
*Hind, A. J.	Contributed	Zooplankton versus Snow; Dissolution of CaCO <sub>3</sub> in the Surface Ocean
*Jokulsdottir, T.	Contributed	The Control of Ballast on the Particulate Organic Carbon Sinking Flux to the Sea Floor
Poulton, A. J.	Contributed	Plankton Mineralisation in the Atlantic Ocean
Schiebel, R.	Contributed	Planktic Foraminiferal Test Flux and Dissolution in the Modern Ocean

**Poster Session 2: Flux Variation in Time, Tuesday, 26 July 2005 3:00 – 4:30PM**

Bijma, J.	Invited	Carbonate Chemistry, Carbon Cycle and Climate Change: A Multidisciplinary View (“6C”)
Toggweiler, R.	Contributed	CaCO <sub>3</sub> Compensation Revisited: How CaCO <sub>3</sub> Compensation Leads to 100-kyr Variations in Atmospheric CO <sub>2</sub>
*Bradmillar, L. I.	Contributed	Opal Burial in Equatorial Pacific Sediments: A Test of the Silicic Acid Leakage Hypothesis
Brovkin, V.	Contributed	Effect of Changes in Rain Ratios on Glacial pCO <sub>2</sub> Simulated by Coupled Climate-Biogeochemistry Model
Loubere, P.	Invited	Reconstructing the Organic Carbon to Calcite Flux Ratio from Deep Sea Sediments
Marchitto, T. M.	Contributed	Deep Pacific CaCO <sub>3</sub> Compensation and Glacial-Interglacial Atmospheric CO <sub>2</sub>
Munhoven, G.	Contributed	Effect of Glacial-interglacial Rain Ratio Variations on Atmospheric CO <sub>2</sub> Levels and Sedimentary Carbonate Preservation/Dissolution Processes
*Richaud, M.	Contributed	Silica Leakage During Glacial Times
Rickaby, R. E. M.	Contributed	A Myr Record of Coccolithophore Sr/Ca and Oceanic Carbonate Production
*Warnock, J.	Contributed	Evaluating Opal Preservation in the Eastern Equatorial Pacific, and Reconstructing Glacial Opal Fluxes
Mekik, F.	Contributed	Is Carbonate Compensation from the last Deglaciation Responsible for the Gradual Increase in Atmospheric CO <sub>2</sub> During the Holocene?
*Fyke, J. G.	Contributed	The Sensitivity of the Marine Hydrate Stability Zone to Future Climate Change

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