

**CHAPMAN CONFERENCE ON ABRUPT CLIMATE CHANGE
BYRD POLAR RESEARCH CENTER, OSU**

Program

Sunday - 14 June 2009

5.00-6.00 pm: Registration

6.00-8.00 pm: Icebreaker

University Plaza Hotel

3110 Oletangy River Road, Columbus, Ohio 43202

Monday – 15 June 2009

8-8:30am: Registration

8:30- 8:45am: Opening remarks

8:45-12:30 pm Session: **Polar climate variability**

Chair: L. Polyak (Ohio State University): **co-chair: A. Voelker** (LNEG, Portugal)

8:45-9:05am: *Invited* **R. Alley**: Ice-Core Records of North-Atlantic-Linked Abrupt Climate Changes

9:05-9:25: **H. A. Bauch**: A Massive Cold Event in the Polar North during the Last Interglacial Warm Period

9:25-9:45: *Invited* **B. Otto-Bliesner**: Transient Simulation of Climate over the Last 21,000 Years (TraCE-21,000): Deglacial Evolution and Abrupt Changes

9:45-10:05: **L. Polyak**: Evidence for Abrupt Climate Changes in Sedimentary Records from the Arctic Ocean

10:05-10:20am: Coffee Break

10:20-10:40am: *Invited* **K. Kawamura**: Millennial-scale Southern Hemisphere Climatic Variability during the Last Seven Glacial Periods and its Relation to Northern Hemisphere Climate

10:40-11: *Invited* **E. Steig**: Abrupt Climate Change in Antarctica: A Review and Some Possible Mechanisms

11-11:20: **L. Menviel**: On the Origin of Antarctic Warming Events: A Modeling Study of Causes and Effects

11:20-12:30 pm: Discussion

12:30-2:00 pm: Lunch

2:00 pm: POSTER SESSION

5:30 pm: The End

Tuesday - 16 June 2009

9-12:30 pm Session: **High latitude atmosphere-ocean dynamics and the meridional overturning circulation**

Chair: T. Marchitto (University of Colorado): **co-chair: A. Tripati** (Cambridge University)

9-9:20am: *Invited* **K. Pahnke**: Increased Northward Incursion of Antarctic Intermediate Water during Heinrich Event 1 and the Younger Dryas

9:20-9:40: *Invited* **R. F. Francois**: Abrupt changes in the strength and geometry of the Atlantic Meridional Overturning Circulation during the last deglaciation recorded by $^{231}\text{Pa}/^{230}\text{Th}$ in North Atlantic sediment.

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9:40-10: *Invited* **T. L. Delworth**: CCSP Synthesis Report on Abrupt Climate Change - Atlantic Meridional Overturning Circulation

10-10:20: *Invited* **J. P. Severinghaus**: Abrupt Increases in Atmospheric ^{18}O of O_2 (a Proxy for Monsoon failure), Kr & Xe (Proxies for Deep Ocean Temperature), and CO_2 Recorded on the Same Time Scale by Gases in Ice Cores

10:20-10:35am: Coffee Break

10:35-10:55am: *Invited* **A. J. Voelker**: See-Saw Patterns in Intermediate and Deep Waters of the North Atlantic Ocean Linked to Millennial-Scale Climate Variability

10:55-11:15: **H. Rashid**: New assessment for the last four glacial cycles' Northern Hemispheric ice-sheet variability from the IODP Site U1313 of the North Atlantic

11:15-11:35: *Invited* **J. Lynch-Steiglitz**: Density Structure and Transport in the Florida Straits during the Younger Dryas and Heinrich Events 1-3

11:35-12:30 pm: Discussion

12:30-2:00 pm: Lunch

2:00 pm: POSTER SESSION

5:30 pm: The End

Wednesday - 17 June 2009

9-12:30 pm Session: **Low to mid-latitude ocean-atmosphere dynamics**

Chair: H. Rashid (Ohio State University): **co-chair: K. Pahnke** (U. Hawaii)

9-9:20am: *Invited* **K. Hughen**: Western Atlantic Intertropical Convergence Zone Variability over the Last Full Glacial Cycle

9:20-9:40: **T. M. Quinn**: Paleo-ENSO Records Derived from Fossil Corals (7-13 ka) from the Western Pacific Warm Pool

9:40-10: **T. M. Marchitto**: Millennial-Scale Variations in Eastern North Pacific Upwelling Temperatures Since the Last Deglaciation

10-10:20: **M-T. Chen**: Millennial Sea Surface Temperature Changes Over the Past 40,000 Years in the Subtropical Western Pacific

10:20-10:35am: Coffee Break

10:35-12:30 pm Session: **Abrupt climate forcing from CO_2**

10:35-10:55: *Invited* **R. F. Anderson**: Wind-Driven Upwelling in the Southern Ocean and the Deglacial Rise in Atmospheric CO_2

10:55-11:15: *Invited* **L. D. Stott**: Hypothesized Causal Link between Glacial/Interglacial Atmospheric CO_2 Cycles and Liquid CO_2 Storage/Release from the Deep Sea

11:15-11:35: **J. Ahn**: Abrupt Atmospheric CO_2 Changes during Antarctic Warming Event 1

11:35-12:30 pm: Discussion

12:30-1:00 pm: Lunch

1:00 - 6:00 pm: FIELD TRIP

Thursday - 18 June 2009

9-12:30 pm Session: **Abrupt changes during the Holocene and their impact on civilizations**

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Chair: R. S. Bradley (U. Massachusetts, Amherst): **co-chair: L. G. Thompson** (Ohio State University)

9-9:20am: *Invited* **L. G. Thompson**: Abrupt Climate Change: A Paleoclimate Perspective from the World's Highest Mountains

9:20-9:40: *Invited* **H. Weiss**: Social Adaptations to Holocene Abrupt Climate Changes in West Asia

9:40-10: *Invited* **R. S. Bradley**: Abrupt Climate Change in the Late Holocene

10-10:20: **B. S. Paliwal**: Abrupt Holocene Climatic Change in the Northwestern India and Disappearance of Sarasvati River and the End of Vedic Civilization

10:20-10:35am: Coffee Break

10:35-10:55am: **J. Feynman**: Climate Stability and Development of Agricultural Societies

10:55-11:15: **G. H. Miller**: Abrupt Onset and Intensification of Ice Cap and Glacier Growth Around the Northern North Atlantic During the Little Ice Age: A Role for Volcanic Forcing?

11:15-11:35: *Invited* **A. Tripathi**: Holocene and Glacial Temperatures from Clumped Isotope Thermometry in Foraminifera and Coccoliths

11:35-12:30 pm: Discussion

12:30-2:00 pm: Lunch

2:00 pm: POSTER SESSION

5:30 pm: The End

Friday - 19 June 2009

9-12:30 pm Session: Abrupt climate Change during glacial Terminations

Chair: R. Francois (University of British Columbia): **co-chair: P. Martin** (University of Chicago)

9:-9:20am: *Invited* **R. L. Edward**: Timing, Nature, and Causes of the Terminations of the Last Four Ice Age Cycles

9:20-9:40: **P. Aharon**: Rapid Changes in Times of Climate Chaos: A Stalagmite Deglaciation Record from Dixieland

9:40-10: *Invited* **B. P. Flower**: Meltwater Routing and the Atlantic Meridional Overturning Circulation during the Last Glacial-Interglacial Cycle: A Gulf of Mexico Perspective

10-10:20: **L. Tarasov**: A Calibrated Deglacial Meltwater Chronology for the Northern Hemisphere

10:20-10:35am: Coffee Break

10:35-12:30 pm Session: Abrupt climate Change and the meridional overturning circulation

10:35-10:55am: **A. V. Fedorov**: Stability of the Atlantic Meridional Overturning Circulation: Implications for Abrupt Climate Change

10:55-11:15: **J. B. Anderson**: Diachronous Climate Change in the Antarctic Peninsula Region: Results from Shaldril and Other Long Coring Efforts

11:15-11:35: **K. J. Meissner**: The Younger Dryas: A Data to Model Comparison to Constrain the Strength of the Overturning Circulation

11:35-12:30 pm: Discussion

12:30 pm: Closure of the Confernece

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POSTER PRESENTATION

Monday – 15 June 2009

- Applegate, P.J.: Effects of Sampling Criteria on the Distributions of Cosmogenic Exposure Dates from Degrading Moraines
- Bash, E.R.: Paleoclimatic Inferences in the Wasatch Mountains Based on Glacier Mass-Balance and Ice-Flow Modeling
- Boslough, M. B.: Problems with the Younger Dryas Boundary (YDB) Impact Hypothesis
- Engelhart, S.E.: A Role for Greenland Mass Loss in 20th Century US Atlantic Coast Sea-Level Rise?
- Gajewski, K.: Abrupt Climate Changes during the Holocene and Late Glacial Across North America from Pollen and Paleolimnological Records
- Gaidos, E.: Dynamics of the Ice Shelf on Proglacial Lake Agassiz as a Stochastic Driver of Late Pleistocene Climate
- He, F.: The Role of AMOC and CO₂ on the Evolution of Polar Temperature during the Last Deglaciation: a Transient GCM Study with CCSM3
- Hoffmann, S.S.: Abrupt and Millennial-Scale Changes in Arctic Sedimentary ²³¹Pa/²³⁰Th
- Hou, J. Exceptional Sensitivity of New England Climate to Abrupt Changes in Atlantic Meridional Overturning Circulation during the Early Holocene
- Levac, E.: The Impact of Early Holocene Lake Agassiz Floods based on new Pollen, Dinoflagellate and Isotopic Data from the Northeast Newfoundland Shelf
- Lewis, C.F.: Correlating Lake Agassiz Floods to the Onset of the 8.2 cal ka Cold Event
- Melton, J.R.: Abrupt Climate Transitions and the $\delta^{13}\text{CH}_4$ Record: New Measurements and Old Corrections
- Montes-Hugo, MA: Climate modes and phytoplankton blooms in four major coastal Antarctic polynyas
- Orsi, A.: Magnitude and Temporal Evolution of Interstadial 8 Abrupt Temperature Change Inferred From $\delta^{15}\text{N}$ and $\delta^{40}\text{Ar}$ in GISP2 Ice Using a New Least-Squares Inversion
- Otieno, F.: Role of Insolation, Atmospheric Circulation, Greenhouse Gases and Topography on the Inception of Laurentide Ice Sheet
- Spielhagen, R.F.: Arctic Ocean Freshwater Events and Their Possible Role in Abrupt Climate Changes in the Late Quaternary
- Talling, P.J.: The Physical Record of Meltwater Floods as Marine Sediment Layers, and Temporal Relationships between Meltwater Flooding and Giant Submarine Slope Failures
- Thornalley, D.J.R.: Meltwater Floods and Abrupt Deglacial Climate Change in the North Atlantic
- Wagner, A.J.: Model Simulations of the 8.2 ka Event
- Zotov, L.V.: Comparative Analysis of Benthic Foraminiferal Isotopic Records from Atlantic and Pacific Oceans over the Past 1 Myr

Tuesday - 16 June 2009

- Bryan, S. P.: Millennial-Scale Changes in Deep Ocean Circulation and Carbon Cycling During the Last Deglaciation: Evidence from the Arabian Sea
- Crampton, J.: Modulation of Abrupt Climate Change in the Southwest Pacific during Antarctic Cold Reversal - Younger Dryas Time

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- Galbraith, E.D.: A Bipolar Nutrient Seesaw Hypothesis
- Hamm, E.: A Test for the Presence of Covariance between Time-uncertain Series of Data with Application to a Collection of Proxy Records Showing Millennial Variability
- Kemp, A.C.: The Timing and Magnitude of a Recent Acceleration in the Rate of Relative Sea-Level Rise (North Carolina, USA)
- Kopp, R.E.: Global and Local Sea Level During the Last Interglacial: A Probabilistic Assessment
- Lund, D.C.: Sea Level Forcing of Mid-ocean Ridge Magmatism on Milankovitch Timescales
- Mohtadi, M.: High Latitude Control on Tropical Indian Ocean during the Past 22,000 Years
- Patton, G.M.: Mg/Ca Paleothermometry in the Central Gulf of Cadiz and the Iberian Margin during Heinrich Events
- Pol-Holz, R De: Antarctic Intermediate Water Radiocarbon during the Last Deglaciation
- Raynolds, R.G.: Communicating Past and Present Rates of Climate Change
- Rial, J. A.: Modeling Abrupt Climate with Independent, Complementary Climate Models and a Possible Origin of the 1500yr Oscillation
- Robertson, A.K.: Paleoproductivity Variations in the Eastern Equatorial Pacific over Glacial and Interglacial Timescales
- Russell, J.M.: Abrupt Climate Change in the Southeast African Tropics Between 0 and 60,000 Yr BP: Testing the Influence of ITCZ Migration on Temperature and Precipitation in the Southern Tropics
- Shiau, L.J.: The Last 50,000-Year Biogenic Sedimentation, Biomarkers, and Terrigenous Input Records off the Southern Papua New Guinea (IMAGES MD052928)
- Singh, V.B.: Abrupt Changes in Benthic Foraminiferal Assemblages and Stable Isotope Record Around 3-4 Ma in the Southeast Indian Ocean, Signatures of Closing of the Indonesian Seaway
- Uchinda, M.: Abrupt Ventilation Changes of the North Pacific Mid-Deep Water During the Last Glacial to Deglacial Period: Implications for Active North Pacific Deep Water Formation Synchronized with AMOC
- Yu, P.S.: High- to Low-Latitude Teleconnection and ENSO-Like Variability of Equatorial Pacific Climate over the Last Glacial Cycle

Thursday - 18 June 2009

- Abubakar, Babagana: The Impacts of Global Climate Change on the Lake Chad Region of Africa: The Lake Chad and Associated Problems
- Acma, Bulent: Climate Change and Tourism: Southeastern Anatolia Region and Southeastern Anatolia Project (GAP) in Turkey as a Case Study
- Agarwal, S: Frequent Change in the Indian Monsoon Rainfall Intensity Over Past 30 ka and Its Impact on Vegetation: Evidence from Isotope Ratio of Soil Carbonate, Ganga Basin, India
- Besonen, M. R.: Evidence for an Abrupt, Mid-1st Millennium AD Desiccation Event Recorded in Lacustrine Sediments from Central Western Turkey
- Boch, R.: Abrupt Climate Change during the Last Glacial Period Recorded in Stalagmites from the European Alps
- Briggs, C. M.: Cascading Effects and Systemic Impacts of Abrupt Climate Change: Assessing Ecological and Social Tipping Points
- Dwomoh, K.A.: Abrupt Change in Earth Climate

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- Gabrielli, P.: The Widespread Abrupt Transition from the Holocene Thermal Maximum to the Neoglacial at ~5 kyr BP: What are the Drivers and the Mechanisms?
- Kazemi, A.: Scolecodonts and Their Biostratigraphy in Ordovician and Silurian Rocks, Kopet Dagh, North Iran
- Kumasi, T.C.: Land Cover Change in the Barekese River Basin of Ghana from 1973-2006
- Machalett, B.: Long Term Seasonality Changes and Abrupt Climate Shifts Recorded in Highly Resolved Dust/Loess Sequences across Euras
- Morrill, C.: Statistical Detection of Mid-Holocene Abrupt Climate Changes from Proxy Records
- Orland, I.J.: High-Resolution Paleoclimate Records From Soreq Cave Speleothems: Sub-annual Resolution by Ion Microprobe
- Rashid, H.: Demise of Indus Valley Civilizations Linked to the Decline of Indian Ocean Monsoon
- Ruzmaikin, A.: The 1500-Year Variability During the Holocene: Amplitude and Phase Relationships
- Singer, S.F.: On Causes and Mechanisms of the 1500-Year Climate Cycles
- Torfstein, Adi: Dry-spells in the Levant during the Last Deglaciation Identified by Dead Sea Lake Levels
- Wathen, S.F.: Abrupt Climate Change and Ecosystem Response: A 2,000 Year History of Severe Droughts, Extreme Temperatures, and Stand-Replacing Fires in the Sierra Nevada in Response to Abrupt Climate Change
- Xu, J. Recent Atmospheric Temperature Change Observed from the Microwave Sounding Unit
- Ward, P.L.: Major Changes in the Rate of Volcanic Activity Cause Rapid Warming and Slow Cooling Predominantly in the Northern Hemisphere
- Wang, X.F.: Rapid Amazonian Moisture Changes during the Last Glacial Period

The End