

ECORD Summer School on Paleooceanography 2007

August 13 - 24, University of Bremen

"Lectures and interactive discussions on the paleoceanography of the Cretaceous to Cenozoic Oceans are combined with practicals on core logging and time-series analysis techniques using the facilities of the [IODP Bremen Core Repository \(BCR\)](#). A focus of both lectures and discussions will be on key topics of ocean heat transport and nutrient cycles, on recent developments in integrated stratigraphy, and on recent studies of North Atlantic and Arctic Ocean climate variability."

Venue: University of Bremen, MARUM building, room 2070, www.rcom.marum.de

Programme

Monday August 13

09:00 – 09:15 **Welcome and opening of the Summer School**

Prof. Dr. Gerold Wefer, University of Bremen

Introduction to Paleoclimate Research – lectures and exercises

09:15 – 12:30 **Ocean heat transport and paleocirculation**

*Prof. Dr. Ralf Tiedemann, Alfred Wegener Institute for Polar and
Marine Research, Bremerhaven*

10:30 – 11:00 Coffee break

12:30 – 13:30 Lunch

13:30 – 17:00 **Cretaceous and Paleogene deep-ocean circulation**

Prof. Dr. Debbie Thomas, Texas A & M University

15:00 – 15:30 Coffee break

17:30 **Ice breaker party with buffet**

(MARUM building, area next to room 2070)

Tuesday August 14

Introduction to Paleoclimate Research – lectures and exercises

09:00 – 12:30 **Rapid climate changes**

Dr. Stefan Mulitza and Dr. André Paul, University of Bremen

10:30 – 11:00 Coffee break

12:30 – 13:30 Lunch

13:30 – 16:30 **Ocean anoxia**

Prof. Dr. Wolfgang Kuhnt, University of Kiel

15:00 – 15:30 Coffee break

16:30 – 17:15 The Integrated Ocean Drilling Program

*Dr. Hans Christian Larsen, Vice President of Science Planning,
Head, IODP Management International Sapporo Office*

Wednesday and Thursday August 15 - 16**IODP TOPIC Symposium: North Atlantic and Arctic climate variability**

Participation in the symposium.

The registration desk and the poster sessions will be found in the MARUM building, lectures will be held in the NW2 building, room C0290.

More information is available under www.iodp.org/topical-symposium/2/

Friday August 17**Integrated stratigraphy – lectures and exercises****09:00 – 10:30 The use of magnetic field records in stratigraphy**

Prof. Dr. Jim Channell, University of Florida

10:30 – 11:00 Coffee break

11:00 – 12:30 From composite depth scales to time series analysis

Dr. Heiko Pälike, National Oceanographic Centre, Southampton

12:30 – 13:30 Lunch

13:30 – 17:00 Biostratigraphy – exercises

Dr. Barbara Donner, University of Bremen

15:00 – 15:30 Coffee break

Saturday August 18

Free time to explore Bremen

Sunday August 19**Trip to Bremerhaven**

Bus departure 09:45 MARUM building, University of Bremen

11:00 – 12:30 Visit of the German Maritime Museum (guided tour)

12:30 – 14:00 Lunch

14:00 – 15:00 Introduction to ice cores

*Dr. Sepp Kipfstuhl, Alfred Wegener Institute for Polar and
Marine Research, Bremerhaven*

15:00 – 17:00 Visit of the Alfred-Wegener-Institute for Polar and Marine Research

Arrival 18:00 MARUM building, University of Bremen

Monday August 20**Practical – Core logging and time-series analysis**

09:00 – 10:30 **Introduction to core logging: Physical properties of sediments**

Dr. Jens Gruetzner, University of Bremen

10:30 – 11:00 Coffee break

11:00 – 11:45 **XRyFluorescence Scanning: Method and Application**

Dr. Rik Tjalingii, University of Kiel

11:45 – 12:30 **Composite records and time-series analysis: Some basics**

Dr. Thomas Westerhold, University of Bremen

12:30 – 13:30 Lunch

13:30 – 17:00 **Practical: Core logging and time-series analysis**

(three groups of 10 students)

Group I: MultiSensor Core Logging, Digital Imaging (Dr. J. Gruetzner)

Group II: XRF-Scanning, core description (Dr. R. Tjalingii)

Group III: Composite record splicing and time-series analysis

(Dr. T. Westerhold)

15:00 – 15:30 Coffee break

Tuesday August 21**Practical - Core logging and time-series analysis**

09:00 – 12:30 Practical continued – exchange of groups

10:30 – 11:00 Coffee break

12:30 – 13:30 Lunch

13:30 – 17:00 Practical continued – exchange of groups

15:00 – 15:30 Coffee break

Wednesday August 22**Presentations by Summer School participants****Talks with discussion**

Moderated by Dr. Stephan Steinke and Dr. Henning Kuhnert, University of Bremen

09:00 – 9.15 **Physical properties of the ANDRILL-MIS core**

Diana Magens, AWI Bremerhaven

09:15 – 9:30 **Atlantic ²³¹Pa/²³⁰Th profiles - applying AMS and ICPMS**

Jörg Lipphold, University of Heidelberg

09:30 – 9:45 **Pleistocene record of terrigenous input in the Eastern Equatorial Pacific inferred from XRF**

Daniel Rincon-Martinez, AWI Bremerhaven

09:45 – 10:00 **Climatic variability of MIS 7 on the Vøring Plateau with emphasis on the benthic foraminifera and oxygen isotopes**

Kristin Grasmø, University of Bergen

10:00 – 10:15 **Submillennial climate variability in mid-Holocene - Evidence from foraminiferal oxygen isotopes from Voldafjorden, western Norway**

Heidi Kjennbakken, University of Bergen

10:15 – 10:30 **Macroecological patterns in Holocene coccolith sizes**

Sandra Herrmann, ETH Zurich

10:30 – 11:00 Coffee break

11:00 – 11:15 **Automation of the measurement of ^{13}C - ^{18}O abundance in carbonates for “clumped isotope thermometry” - a new approach in paleothermometry**

Thomas Schmid, ETH Zurich

11:15 – 11:30 **Paleoceanographic changes in the Alboran Sea (western Mediterranean) during MIS 6 and 7**

Beatriz González Mora, University of Salamanca

11:30 – 11:45 **Deposits of thermohaline currents on slopes west of Ireland - a micropalaeontological study**

Nick Owen, Trinity College

11:45 – 12:00 **Trace metal cycling and productivity variations during Southern Ocean algal blooms**

Maria Teresa Hernandez Sanchez, University of Bristol

12:00 – 12:15 **Recent trends of Upwelling Intensities in various global datasets**

Nikesh Narayan, University of Bremen

12:15 – 12:30 **Looking into the subsurface of fluid seeps, using high resolution seismics to interpretate their geological nature**

Feng Ding, University of Bremen

12:30 – 13:30 Lunch

Talks with discussion

Moderated by Dr. André Paul and Dr. Stefan Mulitza, University of Bremen

13:30 – 13:45 **Geotechnical measurements to characterise and identify slope sediments and landslide mechanisms**

Annika Förster, University of Bremen

13:45 – 14:00 ***Paleoenvironmental evolution in the SE-Pacific during the Pliocene - Preliminary results from XRF-scanning***

Cornelia Saukel, University of Bremen

14:00 – 14:15 Characteristics and geological significance of $^{87}\text{Sr}/^{86}\text{Sr}$ ratio in core sediments in eastern South China Sea

Zhang Xiaoyu, Zhejiang University

14:15 – 14:30 Sedimentary processes and palaeoenvironments in Spitsbergen fjords

Matthias Forwick, University of Tromsø

14:30 – 14:45 Recovery of marine productivity after the K-T Boundary: Molecular evidence from Stevns Klint, Denmark

Julio Sepulveda, University of Bremen

15:45 – 15:00 Terrestrial Vegetation Change in the Mediterranean Region associated with the Sapropel S1: Timing and Characteristics

Ulrich Kotthoff, Frankfurt University

15:00 – 15:30 Coffee break

15:30 – 15:45 The Plio-Pleistocene of the Eastern North Atlantic: a dinoflagellate cyst viewpoint

Stijn De Schepper, University of Bremen

15:45 – 16:00 Rapid redox changes during Late Cretaceous black shale formation - A high-resolution geochemical study of OAE 3

Christian März, AWI Bremerhaven

16:00 – 16:15 Low resistivity pay: the role of chlorite in controlling resistivity responses

Joanne Tudge, University of Leicester

16:15 – 16:30 Compound-specific ^{14}C -analysis of lipid biomarkers

Stephanie Kusch, University of Bremen

16:30 – 16:45 East African continental climate change: results from the Lake Malawi Drilling Project and seismic reflection surveys

Bob Lyons, Syracuse University

Thursday August 23

IODP: Structure and Objectives

09:00 – 10:30 IODP long range plan, organisation and panel work

*Dr. Jochen Erbacher, Federal Institute for Geosciences and
Natural Resources (BGR) in Hannover
and Dr. Ursula Röhl, University of Bremen*

10:30 – 11:00 Coffee break

11:00 – 12:30 Exercise: Writing of a proposal

Dr. Ursula Röhl and Dr. Jochen Erbacher

12:30 – 13:30 Lunch

13:30 – 17:00 **Exercise: Writing of a proposal** (continued)

15:00 – 15:30 Coffee break

Friday August 24

Interpretating data from IODP-cores

09:00 – 12:00 **Case studies from the SE-Pacific**

*Dr. Frank Lamy, Alfred Wegener Institute for Polar and
Marine Research, Bremerhaven*

10:30 – 11:00 Coffee break

12:00 – 12:30 **Awards for best oral presentations and farewell**

Prof. Dr. Gerold Wefer, University of Bremen