

ECORD Summer School on “The Deep Subseafloor Biosphere” 2008

September 1 - 12, University of Bremen

"Lectures and interactive discussions on the deep subseafloor biosphere are combined with practicals on IODP shipboard logging and analytical work using the facilities of the IODP Bremen Core Repository (BCR). A focus of both lectures and discussions will be on key topics of subseafloor microbial communities, habitability and environmental conditions and the deep biosphere's role in the global carbon cycle. "

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

Preliminary Programme (as of February 1, 2008)

Monday September 1

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

Prof. Dr. Dierk Hebbeln, Univ. Bremen

Introduction to the Deep Subseafloor Biosphere

09:15 – 12:30 **The deep subseafloor biosphere: history and overview**

Prof. Dr. Richard J. Parkes, Cardiff; Prof. Dr. BoB. Jørgensen, MPI Bremen

10:30 – 11:00 Coffee break

12:30 – 13:30 Lunch

Theme 1: Microbial communities

13:30 – 17:00 **Biogeography and composition of the subseafloor biosphere**

F. Inagaki, Kochi, JAMSTEC; A. Teske, UNC Chapel Hill

15:00 – 15:30 Coffee break

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

(MARUM building, area next to room 2070)

Tuesday September 2

09:00 – 12:30 **Methods for the quantification and characterization of subseafloor communities**

R.J. Parkes, Cardiff; F. Inagaki, Kochi; H. Cypionka, B. Engelen, both at Oldenburg; A. Schippers, BGR Hannover; J. Lipp and K.-U. Hinrichs, Bremen

10:30 – 11:00 Coffee break

12:30 – 13:30 Lunch

Theme 2: Habitability and environmental conditions

13:30 – 17:00 **Sources of energy, carbon, and nutrients in subsurface environments**

K.J. Edwards, USC, Los Angeles; S. D'Hondt, URI, Narragansett; W. Bach, Bremen

15:00 – 15:30 Coffee break

Wednesday September 3

09:00 – 12:30 **Habitats 1: sediments**

T. Ferdelman, V. Heuer, K.-U. Hinrichs, B.B. Jorgensen, all Bremen

10:30 – 11:00 Coffee break

12:30 – 13:30 Lunch

13:30 – 17:00 **Habitats 2: subseafloor ocean and crustal rocks**

W. Bach, Bremen; K.J. Edwards, Los Angeles

15:00 – 15:30 Coffee break

Thursday September 4**Theme 3: The deep biosphere in the global carbon cycle**

09:00 – 12:30 **Gas hydrate reservoirs**

G. Bohrmann, V. Heuer, K.-U. Hinrichs; all at Bremen

10:30 – 11:00 Coffee break

12:30 – 13:30 Lunch

13:30 – 17:00 **“The deep biosphere strikes back” – the role of methane hydrate for carbon cycle and climate**

G.R. Dickens, Rice Univ., Houston; G. Bohrmann, Bremen.

T. Ferdelman, V. Heuer, K.-U. Hinrichs, B.B. Jorgensen, all Bremen

15:00 – 15:30 Coffee break

Friday September 5

09:00 – 10:30 **Closing discussion on future targets and drilling strategies for IODP deep biosphere studies**

All available lectures.

10:30 – 11:00 Coffee break

11:00 – 12:30 **Exercise: Writing of an IODP proposal**

Dr. Jochen Erbacher, Federal Institute for Geosciences and

Natural Resources (BGR) in Hannover and Dr. Ursula Röhl, Univ. of Bremen

12:30 – 13:30 Lunch

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

15:00 – 15:30 Coffee break

Saturday September 6

Free time to explore Bremen

Sunday September 7

Field Trip to the German Wadden Sea (to be confirmed)

Monday September 8**Presentations of own PhD/postdoc projects by Summer School participants**

Moderation by Prof. Dr. Dierk Hebbeln, University of Bremen

Tuesday September 9**Practical – Core Description, Cell counting and initial interstitial water chemistry**

09:00 – 10:00 **Introduction to core description and colour scanning**

Dr. Frank Lamy, AWI Bremerhaven and Dr. Mahyar Mohtadi, Univ. of Bremen

10:00 – 10:30 Coffee break

10:30 – 11:15 **Shipboard techniques for counting cells**

*Dr. A. Schippers, Federal Institute for Geosciences and
Natural Resources (BGR) in Hannover*

11:15 – 12:00 **Initial interstitial water chemistry**

Dr. Martin Kölling, University of Bremen

12:00 – 13:00 Lunch

13:00 – 18:00 **Practical: Core Description, Cell counting and initial interstitial water chemistry**

(three groups of 10 students, rotating every 1.5 hours)

Group I: Core description and colour scanning (Dr. F. Lamy, Dr. M. Mohtadi)

Group II: Cell counting (Dr. A. Schippers)

Group III: Initial interstitial water chemistry (Dr. M. Kölling)

15:30 – 16:00 Coffee break

Wednesday September 10**Practical – Core logging and core splicing**

09:00 – 09:45 **Introduction to core logging: Physical properties of sediments**

Dr. Jens Gruetzner, University of Bremen

09:45 – 10:30 **Downhole Logging Integration**

Dr. S. Davies, University of Leicester, UK

10:30 – 11:00 Coffee break

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

Dr. Ursula Röhl, University of Bremen

11:45 – 12:30 **Core splicing – linking different holes of an individual site towards a composite record: Some basics**

Dr. Thomas Westerhold, University of Bremen

12:30 – 13:30 Lunch

13:30 – 17:00 **Practical: Core logging and core splicing**

(three groups of 10 students)

Group I: MultiSensor Core Logging (Dr. H. Kuhlmann, Dr. J. Gruetzner)

Group II: XRF-Scanning (Dr. U. Röhl)

Group III: Core splicing and time-series analysis (Dr. T. Westerhold)

15:00 – 15:30 Coffee break

Thursday September 11

Practical - Core logging and core splicing

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

Friday September 12

Introduction to IODP and ECORD

09:00 – 10:30 **IODP and ECORD: Structure and Objectives**

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 **IODP Core Curation**

Dr. Walter Hale, University of Bremen

12:30 – 13:00 **Awards for best oral presentations and farewell**

Prof. Dr. Dierk Hebbeln, University of Bremen