ECORD
European Consortium for Ocean Research Drilling

Newsletter #12

April 2009

IODP
INTEGRATED OCEAN DRILLING PROGRAM

ESO to start New Jersey Shallow Shelf Expedition in May 2009

Inside this issue:

From the Council Chair

First I would like to offer congratulations to all partners in the program for what looks like a very exciting year to come in 2009. The *JOIDES Resolution* is finally back in service and Expedition 320, Pacific Equatorial Age Transect I, started on March 5, 2009 in Honolulu, Hawaii. *Chikyu* is on schedule for NanTroSEIZE in May having set sail from Port of Kobe on February 15, 2009 with the thruster repairs being confirmed after testing carried out in Kumano Basin on March 4. And ECORD finally has contracts in place to run Expedition 313, the New Jersey Shallow Shelf mission-specific platform operation also in May 2009 *(see pages 3-4)*. This will be the first year when all drilling ships in the program will be delivering expeditions together as originally anticipated. It has been a very difficult period for the Implementing Organizations and the funding agencies over the last 18 months, but now I hope we can move forward with delivering the unique science on which the program is based.

In recognition that there is still much cutting-edge science to be done using ocean drilling, planning has started for a programme beyond IODP in 2013 as reported in the last Newsletter by Severino Falcon-Morales. The funding agencies, led by the Lead Agencies of the US and Japan, held the first meeting of the International Working Group Plus (IWG+) in Lisbon on January 23, 2009. Terms of Reference for IWG+ and proposals for membership of the group were discussed for ratification at the next meeting due to be held in Washington DC in June 2009. Although the framework for 'The New Ocean Drilling Program' will need to be worked out, it is the science which drives what needs to be done. There is much in this Newsletter describing the science preparation in Europe and internationally, and I hope that you will all get actively involved in defining the science for another phase of ocean drilling. As members of ECORD, I would ask you to reach out and attract new colleagues in Europe who have not yet appreciated what can be achieved scientifically using ocean drilling.

IODP already has many scientific achievements to celebrate, such as Expedition 302, the Arctic Coring Expedition and Expedition 310, Tahiti Sea Level both led by ECORD. ECORD will need to show the politicians and public in Europe that the science can deliver not only fundamental breakthroughs in our understanding of the way in which our planet works, but also that the science will help society to tackle the pressing issues of our changing world. Climate change, natural hazards and the sustainable use of our natural resources remain challenges to be addressed by the science of ocean drilling. I am sure the community will add to this list in its preparation for a new programme.

Finally, I should note all the hard work that is undertaken by all parties tasked with delivering IODP and in particular our constituent parts of ECORD, including the publishers of this Newsletter! Despite the difficulties, everyone continues to champion IODP whether relatively new to the program or getting to be an old-timer like myself. Many of the original ECORD Council have now taken up new positions, some still engaged with IODP and others no longer, and I would like to express my personal thanks for the friendship and support they have given over the years. I am sure that you will join with me in wishing well to all those moving on to pastures new and encouraging all now engaged in IODP to great achievement.

Chris Franklin, Council Chair, March 2009

The ECORD Newsletter is published by the ECORD Outreach Team - Patricia Maruéjol (EMA), Alan Stevenson and Albert Gerdes (ESO) and Bonnie Wolff-Boenisch (ESSAC) - who are grateful to all authors who have contributed to this issue.
Electronic version is available for download at: http://www.ecord.org/pub/nl.html
Contact: Patricia Maruéjol, ECORD Managing Agency, ema@ipgp.jussieu.fr - Imprint:Vagner Graphic

http://www.ecord.org

Front cover: The liftboat Kayd (Montco Offshore, Inc.), the mission-specific platform that ESO will use during the New Jersey Shallow Shelf Expedition (photo D. Smith).


Dan Evans

ECORD Science Operator **News**


Alan Stevenson

A busy year for ESO

In 2009, the ECORD Science Operator plans to implement two mission-specific platform expeditions on behalf of IODP. The New Jersey Shallow Shelf (NJSS) Expedition will take place between May and late July followed later in the year by the Great Barrier Reef Environmental Changes Expedition (GBREC).

The New Jersey Shallow Shelf (NJSS) Expedition

The liftboat *Kayd,* owned by a Gulf of Mexico company called Montco, has been contracted as the platform and DOSSEC will provide the drilling operators. The *Kayd* will sail from Louisiana in early April to reach Atlantic City by about April when the New Jersey Shallow Shelf Expedition will mobilise. Mobilisation will take place at the Coast Guard quay and is expected to be completed by May 2 when the *Kayd* will sail the short distance to the working area. DOSECC will fit a CS4002 rig into the platform using a cantilever over the bow. The limited deck space will be completely filled by drillpipe, other drilling equipment and ESO's 9 containers to provide laboratory and office space as well as reefers for the core.

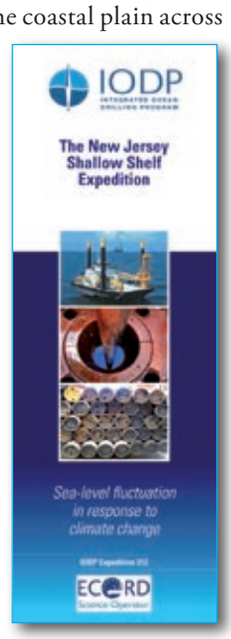

The liftboat Kayd is the mission-specific platform to be used during the New Jersey Shallow Shelf Expedition. Here it is seen being used to carry out repairs to a small platform in the Gulf of Mexico (photo D. Smith)

The expedition, which will take about 12 weeks to complete, is supported by the International Continental Scientific Drilling Program (ICDP).
The expedition will be led by co-chief scientists Professor Gregory Mountain of Rutgers University, USA and Dr Jean-Noël Proust of the Centre National de la Recherche Scientifique (CNRS) based at the University of Rennes in France *(see page 4)*. The co-chief scientists will lead a team of 26 scientists from ten countries including the ECORD members Canada, Denmark, Finland, France, Germany and the UK. The offshore phase of the expedition will take about 12 weeks to complete and in November of 2009, the entire science party will gather at the Bremen Core Repository to complete the scientific analyses.

The expedition team will core three sites between 45 and 60 km off the coast of New Jersey in shallow waters about 35 metres in depth. The NJSS expedition's science objectives were described in an article in ECORD Newsletter #7. Drilling operations will focus on collecting cores from early to mid-Miocene sedimentary sequences (14-24 million years old). Major developments in the Earth's climate system during this period included intense Arctic glaciation and the mid-Miocene 'Climatic Optimum' when ice sheets were at a relative minimum extent. The scientists aim to estimate the timing and magnitude of global sea level in response to the climate variations during Miocene time and determine the relationship between sea-level change and the architecture of sediments.
Greg Mountain explains "The New Jersey continental margin is an ideal location to investigate the history of sea-level change and its relationship to sediment stratigraphy because the sediments were deposited rapidly in an area that was tectonically stable, allowing fossils suitable for age control to be preserved throughout the time interval of interest. An additional advantage is that we already have large datasets of seismic, well log and borehole data, which help us to understand the geological setting from the coastal plain across the shelf to the continental rise".

As the offshore phase of the expedition is expected to last about three months, members of the science party and the ESO team will rotate throughout the operation. The platform is capable of holding about 6-7 days water supply, so regular supplies will be taken to the platform. This will also allow the changes in personnel to take place. The supply vessels will operate from Staten Island, New York.

Reports from the platform will be included on the expedition page on the ESO web site. The web site includes information about the expedition and the people involved in the project.



The New Jersey Shallow Shelf Expedition Co-Chief Scientists

Professor Gregory Mountain, Rutgers University, New Jersey, USA

Greg is an expert on the acquisition, processing and interpretation of seismic reflection data. He graduated from Brown University, Rhode Island in 1972 and went on to Columbia University, New York City to carry out his Masters and Doctoral work on marine geology. His research interests include the origin, maintenance and burial of submarine canyons on continental slopes. He has worked on establishing core-seismic correlations and map surfaces to evaluate the role of eustasy, sediment supply, continental glaciation, mass wasting, and other processes that have built the stratigraphic record contained in continental margin sediments off the coast of New Jersey. Greg's interests also include the evolution of abyssal sediment drifts in the North Atlantic; the understanding of processes controlling sedimentation from shelves to abyssal plains across the Mediterranean margin south of France and the tectonic development of transtensional basins in the Gulf of California using high-resolution seismic profiles to map sediment distribution and fault history.
Greg can be seen talking about the NJSS expedition in a short film available on the NJSS web page.

Dr Jean-Noël Proust, Research Director in Sedimentology at the Centre National de la Recherche Scientifique (CNRS)

Jean-Noël is currently based at the Geosciences Department of the University of Rennes 1, France. He graduated from the University of Poitiers in 1987 and completed a PhD at the University of Strasbourg. He also studied at the University of Lille. Jean-Noël has twenty years experience working on sequence stratigraphy of siliciclastic and carbonate rocks from outcrop, cores, logs and seismic data interpretation. His expertise concentrates on the influence of sea-level changes on continental to shallow-marine sediment partitioning in the rock record. He has worked in the field in Russia, Africa, SW Pacific, Europe and North America investigating late Proterozoic rocks to Holocene sediments. He ran numerous shallow-marine seismic surveys and coring campaigns along the French Atlantic passive margin coasts. In 2006, Jean-Noël was expedition co-chief on the *Marion Dufresne* coring campaign in the Tasman Sea and SW Pacific active margins. His most recent research focuses on untangling tectonic and climate controls on sediment distribution along active and passive margins and the overall calibration of sediment fluxes to the ocean.

NJSS Expedition 313 - http://www.eso.ecord.org/expeditions/313/313.htm

Great Barrier Reef Environmental Changes (GBREC) Expedition

Contract negotiations are still taking place, however ESO expects to start operations on the GBREC expedition in October-November 2009. The co-chief scientists are Dr Jody Webster of the University of Sydney, Australia and Dr Yusuke Yokoyama of the University of Tokyo, Japan.

In March 2009, the co-chief scientists met with the ESO team in Edinburgh to discuss the operations. Their visit provided the opportunity for Alan Stevenson, the ESO Outreach Manager to put some questions to Jody and Yusuke about the expedition.

Environmental change is obviously of interest to everyone, but why is it necessary to take samples from the Great Barrier Reef to get a better understanding of these changes?

First of all, we have to emphasise that the cores we collect will be taken from fossil reefs, we will not be taking samples from any living corals. The importance of the Great Barrier Reef is that it's an area of the Australian shelf that has been essentially stable over the last 20,000 years, so it's an ideal location to look at the reefs that have developed at different sea levels and climates throughout this period. We know that actively growing coral reefs thrive in less than about 20 metres of water, so we can study a series of fossil reefs down to about 130 metres water depth and develop our understanding of the past sea-level and oceanographic conditions at the time the corals were living.

Are these fossil reefs a recent discovery?

The reef structures have been known since the 1980s, but it's only in the last twenty years that we have had the technology to investigate them in detail. It's important that we understand the morphology of the reefs before we even start to collect cores. The main advance has been the use of multibeam echosounder and LADS (Laser Airborne Depth Sounder), which has allowed us to get a better idea about the detailed shapes of the reefs. These data were submitted to the IODP panels to show that we had a good understanding of the reef morphology.

If you have known about the reefs for some time, why are you taking cores from them now?

Basically, we were not able to core coral reefs until the IODP structure was put in place. The addition of mission-specific platforms to the IODP's capability has allowed us to work in shallow-water reef environments and recover high-quality cores, such as we did during the Tahiti Sea-Level Expedition in 2005.

How will the GBREC Expedition add to the research that was carried out in Tahiti?

To construct global sea-level models, we need records of change from as many locations as possible. Tahiti is a volcanic

island, so a different setting to the Great Barrier Reef. Other sea-level records that are used by scientists include those from Barbados, which is an active area compared to the stable setting of the GBR. The Great Barrier Reef also has a much greater diversity of coral species than Tahiti - looking at environments with multiple species is very important in building up the complete story.

So coral reefs are one of the best recorders of sea-level change?

Yes. Another advantage is that their calcium carbonate skeletons allow us to date them very accurately. The precision can be as good as to within 10-20 years of the time that the corals were growing, depending on the age and the method used. Some of the techniques we use to sample the corals can also give information on seasonal or even monthly changes in parameters such as water temperatures or acidity of the oceans.

Dr Jody Webster (left) and Dr Yusuke Yokoyama examine corals from the Tahiti Sea-Level Expedition.

Can we use the information you will acquire to understand the seas as they are today?

We will be able to relate sea-surface temperatures recorded in the corals at the time they were forming to modern temperatures. Some of the most significant phenomenons today are inter-annual events such as the El Niño Southern Oscillation (ENSO), which can have a significant impact on our weather; periods of drought in north-eastern Australia can be associated with ENSO events. One very important question is, how will global warming influence ENSO in the future? This is of primary importance in planning and an excellent way of improving predictions is to look at different warm and cold periods in the past and try to understand how ENSO behaved during these periods. Short of having a crystal ball, detailed records from the past may provide us with the best way of predicting future surface-temperature changes.

Are there other ways we can use the scientific results to understand or predict future changes in the environment?

Looking at the coral-reef records will provide us with a much better understanding of events that were driven by past ice-sheet collapse in the polar regions. The meltwater pulses created by these events are recorded as sea rises or drowning events in the corals. There is some evidence that these ice-sheet collapses in the past have happened very quickly, within several hundred years, and predictions of the future of our ice sheets tend not to account for this type of accelerated change. The meltwater events have also been linked to changes in ocean circulation, which can influence the global climate. Understanding the timing, duration and magnitude of past meltwater events is an excellent way of contributing to our understanding of how the present ice-caps might change in the future.

ESO and the scientific team are working very closely with the Great Barrier Reef Marine Park Authority (GBRMPA) during the expedition. What benefits can the science provide to the management of the reef?

There are considerable uncertainties as to how the Great Barrier Reef will respond to changes in our oceans, such as acidification, increasing sea-level rise, sea-surface temperatures and turbidity in the next 20-30 years. The scientific drilling will provide information to the GBRMPA about the environmental thresholds of the reef during the last 20 ka - during a period of abrupt sea rise and climate change. This will provide important insights into how robust the reef is over different timescales and under different environmental conditions. Previous drilling through the modern Great Barrier Reef has shown that it is perhaps three to four hundred thousand years old and has died and regrown six times during that period, so there is a natural cycle of life and death. On each occasion the reef has re-established itself more or less as it was before, but all previous events occurred before man had any influence on the environment. Our research on the evolution of the GBR over the last 20 ka will help us to understand the present distribution of corals and how they currently fit into the cycle of reef growth or decline.

GBREC Expedition 325 - http://www.eso.ecord.org/expeditions/gbr/gbr.htm

Dan Evans, ESO Science Manager and Alan Stevenson, ESO Outreach Manager
http://www.eso.ecord.org

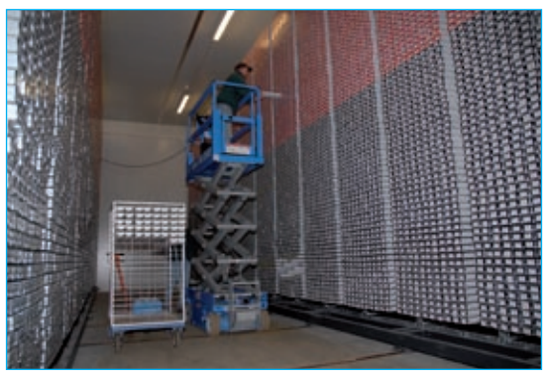
New arrivals at IODP Bremen Core Repository (BCR) enhance unique scientific collection in Europe

Ursula Röhl

The ocean drilling programs have been proven to be the most successful international collaborative research programs in the history of Earth sciences. Since 2003, deep drilling beneath the ocean floor has been carried out worldwide through the Integrated Ocean Drilling Program (IODP), a multi-platform program with the recently refurbished US *JOIDES Resolution*, the Japanese riser vessel *Chikyu*, and ECORD´s mission-specific platforms (MSPs). The cores retrieved offer a unique view into the origin, development, and present-day structure of the ocean floor.

The Bremen Core Repository (BCR), home to all cores from the IODP, Ocean Drilling Program (ODP), and Deep Sea Drilling Project (DSDP) retrieved in the Atlantic Ocean, Mediterranean and Black Seas and Arctic Ocean, is operated at the University of Bremen within the framework of the German participation in IODP. It is one of three IODP repositories (besides the Gulf Coast Repository (GCR) in College Station, Texas, and the Kochi Core Center (KCC), Japan) and was established in the summer of 1994, receiving ODP cores at the time. The BCR has a very modern refrigerated storage area with a movable rack system *(right, top)* and state-of-the-art laboratory and office space. From its opening in 1994 in a warehouse in the harbour of Bremen until July 2005, when the BCR moved to the Center for Marine Environmental Sciences (MARUM) building, its core collection grew to a total of 79,270 m of cores from ODP/IODP Expeditions 151 through 307.

During the recently finalised legacy core redistribution project *(Firth, Gupta and Röhl, 2009)*, the BCR received an additional 60,226 m of DSDP/ODP cores (DSDP/ODP Legs 2 through 150) sent in forty-one 40-ft containers from College Station, Texas (GCR) and Lamont, New York (from the former East Coast Repository, ECR, which was officially closed on September 30, 2008). Also during the redistribution project the cores from ODP Leg 165 (Caribbean Sea) and Southern Ocean ODP Legs 178 and 188 left Bremen and are now stored at GCR. The BCR collection now comprises about 140 km of deep-sea cores from 82 legs/expeditions in around 190,000 d-tubes, which represents the accumulation of all drill cores recovered during four decades of scientific ocean drilling in the Atlantic and Arctic Oceans as well as the Mediterranean and Black Seas. These cores are now more easily accessible in Europe and available to be studied, sampled, and analysed in detail by national, regional, and international researchers and science teams.



Reefer (refrigerated core store) © MARUM

Arrival of new cores © IODP-BCR

Sampling cores from the Porcupine Basin (IODP Expedition 307) at the BCR © IODP-BCR

An average of around 200 scientists visit the repository annually, sometimes working on the cores in week-long sampling meetings relatively soon after an expedition *(left, bottom)*. As many as 50,000 samples per year are taken by guests and by the repository staff. The repository is an important contact point for scientists from all over the world - about 2,000 visitors so far - and therefore also significantly contributes to the exchange and transfer of marine science knowledge at the University of Bremen. This is of especially great value for students and young scientists, as it leads to enhanced scientific interactions and promotes international professional cooperation at an early stage of their careers. The ECORD Summer School in Bremen takes advantage of the BCR and offers a unique opportunity to bring European PhD students and young PostDocs in particular into contact with IODP, to inform them about current research within this exciting international scientific program, and to prepare them for future participation in IODP expeditions. Very effective training is achieved by taking the summer school participants on a 'virtual ship' where they get an insight into 'shipboard' methodologies applied on the drilling vessels of the program. A wide spectrum of methods, including core curation, visual core description, physical properties measurements, and petrographic observations are taught according to the high standards normally observed on IODP expeditions. Participants are introduced to a full range of IODP-related topics, from a general introduction to the methods of compiling IODP proposals.

The large BCR core reefer and additional laboratory and office space greatly facilitate core sampling and scientific analysis, and also provide an improved service to the community. The

to continue on page 9


Albert Gerdes *Alan Stevenson*

ECORD Outreach and Education Activities


Bonnie Wolff-Boenisch *Patricia Maruéjol*

The Outreach team met in Paris on January 15-16, 2009, to discuss ECORD activities for the year and in particular the presentation of IODP at EGU 2009 in Vienna, April 19-24, see ***http://www.ecord.org/pi/egu09***. The publication of this issue of the ECORD Newsletter is timed to coincide with the EGU 2009 Conference and the start of the New Jersey Shallow Shelf Expedition in May.

Past Conferences and Meetings

More than 15,000 scientists and researchers attended the AGU 2008 meeting, in San Francisco, from December 15 to 19. The IODP booth was organised by Nancy Light (IODP-MI) where a video wall demonstrated 12 video segments, which have been posted on YouTube - ***http://fr.youtube.com/user/OceanDrilling***, where IODP has opened a new online channel. French scientist/author Christine Laverne signed copies of her new book, "Drill Me a Painting", which describes her experiences during DSDP, ODP, and IODP expeditions. Approximately 250 copies of Christine's book were distributed to teachers and researchers in San Francisco. The IODP Townhall Meeting attracted nearly 400 people to hear a leadership panel answer questions about the program's future operations and funding.

From November 14 to 16, 2008, ECORD/IODP organised an exhibition booth *(below)* at the 'Ville Européenne des Sciences', a major public event for scientific outreach at the Grand Palais in Paris. The booth was put together by France's ECORD member, the Centre National de la Recherche Scientifique (CNRS) and manned by representatives and scientists from CNRS, various French universities and ECORD. Among

the many exhibits in the booth, the highlights were the new, specially designed posters about the deep-sea drilling vessel *Chikyu* and the IODP research themes; a jigsaw puzzle made up of the tectonic plates; computer animations of riser drilling created by CDEX, demos of optical image logs; three core replicas as well as samples of oceanic crust and corals and microfossils observations. The younger visitors were invited to take part in a quiz about IODP and left the booth with

a paper model of the *Chikyu* to build. Over the course of the three days, the booth attracted large numbers of visitors as well as magazine and radio reporters *(above)*, who were interested in learning about the scientific challenges of ocean drilling. Past climate changes and the technological challenges of ocean drilling were two of the main topics of questions and discussions, but visitors were also eager to know about geodynamic processes of the Earth and the deep biosphere.
Visit a photo gallery at: ***http://www.ecord.org/pi/paris-ves***.

New Public Resources

- A new IODP article for "Responding to Climate Change (RTCC)" was released at the UN Climate Change Conference held in Poznan, Poland, on December 1-12, 2008 and is available on line at: ***http://www.rtcc.org/2009/html/oceans-2.html***.
- The final report of the ECORD-Net project is published and available on-line at: ***http://www.ecord.org/enet/ecord-net.***
- A new ESO brochure entitled "Managing Mission-Specific Platform Expeditions" is in preparation and will be released this summer.
- The ESSAC brochure entitled 'Leading and Coordinating Ocean Drilling Science in Europe' is currently under revision and will be published at the INVEST Conference in September 2009.

All ECORD Publications are posted on-line at: ***http://www.ecord.org/pub/publications.html***.

- Five IODP Core Replicas are available for display at temporary exhibitions, conferences and summer schools in Europe:

1. Arctic Coring (IODP Expedition 302),
2. Tahiti Sea-Level (IODP Expedition 310),
3. PETM - Early Cenozoic Extreme Climates: the Walvis Ridge Transect (ODP Leg 208),

Check and Subscribe to "ECORD News", the RSS newsfeed that keeps you up to date:
http://www.ecord.org/RSS/news_ECORD.xml

4. K/T Boundary - Black Nose Paleoceanographic Transect (ODP Leg 171 B),

5. Basalt-gabbro contact - Superfast Spreading Crust (IODP Expedition 312).

Check availability at: ***http://www.ecord.org/pi/promo.html*** and contact: **ema@ipgp.jussieu.fr**

- Education and science resources are posted on: ***http://www.essac.ecord.org/index.php?mod=education***

ECORD on-line

- New videos about IODP and ECORD are featured on YouTube at ***http://fr.youtube.com/user/OceanDrilling*** and ***http://fr.youtube.com/user/ECORDESO***.
- A search page has been implemented on the ECORD web site - ***http://www.ecord.org/addresses.html*** to find ECORD people and information posted on all ECORD web sites - ESSAC, ESO and ECORD.
- Reports of workshops (ESF Magellan Workshop Series and IODP Workshops) can be found on the ESSAC web site as well as links to other scientific resources: ***http://www.essac.ecord.org/index.php?mod=education&page=scientific-res***
- The ECORD-Net project funded by the European Commission from December 2003 to August 2008 has come to an end *(see page 20)*, the corresponding web pages have been revamped with a short description of the eight workpackages as well as the outcomes reported and all related publications.

Visit ***http://www.ecord.org/enet/ecord-net.html***.

ECORD Educational Activities

ECORD 2009 Summer Schools

The 2009 ECORD summer school on 'Geodynamics of mid-ocean ridges' will be held from August 31 until September 11, 2009 at the MARUM, University of Bremen. The thematic focus of the summer school is slow spreading mid-ocean ridges, which is more diverse in lithology and structure than fast-spread oceanic crust. Topics ranging from mantle melting to tectonic exhumation of mantle to hydrothermal/microbial interactions will be covered in lectures. Participants will also be introduced to a full range of IODP related topics from a general introduction to the program to compiling IODP proposals. Information about when and how to apply for the summer school will be available in spring 2009. For detailed information visit ***http://www.glomar.uni-bremen.de/ECORD_Summer_School_2009.html*** or contact gratmeyer@marum.de

The Urbino Summer School in Paleoclimatology and ECORD, in collaboration with the School of Rock, will organise two events at the University of Urbino, Italy. The first event 'Introductory Course to Ocean Drilling Sciences & Paleoclimate' from July 15 to 21, 2009 will deal with Ocean Drilling Sciences with a main focus on the stratigraphy and sedimentology of deep-sea sediments as paleoclimate archives. The second event 'Past Global Change Reconstruction & Modelling Techniques' July 23 to August 5, 2009 will give an introduction to past climates variability and dynamics of Cretaceous and Cenozoic climate at different time scales. Integration of lectures on the many different areas of paleoclimatology including biogeochemical cycling, paleoceanography and climate models. The deadline for early-registration was March 15, 2009. For detailed information and how to apply, visit ***www.uniurb.it/ussp***.

ECORD Scholarships 2009

A call for ECORD Scholarships 2009 to attend one of the 2009 ECORD summer schools is open till April 12, 2009: ***http://www.essac.ecord.org/flyer/Call_Scholarships_2009.pdf***. In 2008, 13 young scientists from 8 countries have been selected from 45 applicants from 16 ECORD and non-ECORD countries to receive an ECORD scholarship. The funding of the ECORD Scholarships has been increased in 2009 and 15 young scientists will receive a scholarship.

ECORD Summer Schools 2010

ECORD has opened a call to host an ECORD summer school for students and young scientists at an ECORD institution in summer 2010. Thematic topics of the summer school should cover the research areas of the Initial Science Plan - ***http://www.iodp.org/isp/*** - of the IODP. Further information is available at ***http://www.essac.ecord.org/flyer/Call_to_host_SumSch2010_conv.pdf***. The deadline is April 30, 2009.

School of Rock 2009

The School of Rock 2009, an initiative of the Consortium for Ocean Leadership, opened a call offering the unique opportunity for teachers to take part in a research expedition aboard the recently relaunched *JOIDES Resolution*. The expedition is scheduled from June 23 to July 5, 2009. The participants will be among the first to work and sail aboard the newly renovated ship. In this context two berths are available for ECORD teachers. About 28 applications were received from teachers, including those from Europe. The selection process is ongoing. Please check here: ***http://www.oceanleadership.org/learning/school_of_rock/09***

ECORD Distinguished Lecturer Programme

A new series of the ECORD Distinguished Lecturer Programme was launched in autumn 2008 and will continue until June 2010. ESSAC has received many applications to host the lectures from ECORD and non-ECORD countries *(page 10)* posted on ***http://www.essac.ecord.org/index.php?mod=education&page=dlp***.

ECORD Outreach Team: Patricia Maruéjol, EMA, Alan Stevenson and Albert Gerdes, ESO and Bonnie Wolff-Boenisch, ESSAC
http://www.ecord.org/pi/promo.html

Where to find information about ECORD/IODP Education and Outreach?

- **ECORD Outreach Resources - www.ecord.org/pi/promo**

Publications - brochures/flyers and posters - and ODP/IODP core replicas are available upon request.

- **ECORD Education - www.ecord.org/edu/education**

Summer schools, ECORD Distinguished Lecturer Programme, Teachers' Activities
Education and science resources: http://www.essac.ecord.org/index.php?mod=education


Catherine Mével

Message from the ECORD Managing Agency Director

We have now entered the second half of the 10-year IODP program. After some difficult times, we have finally reached the situation where all three platforms will be operating simultaneously this year for the benefit of the science community. As I write these lines, the completely renovated *JOIDES Resolution* has just recovered the first sediment cores from the Pacific Equatorial Age Transect Expedition. For the first time, the *Chikyu* will soon operate in riser mode for IODP off Japan to better understand the seismogenic zone as a continuation of the long-term NanTroSEIZE project. ECORD will also deliver new and exciting science; the New Jersey Shallow Shelf Expedition will start this May, and the prospects are good for the Great Barrier Reef Environmental Changes Expedition that is scheduled for this Autumn *(see pages 3-5)*.

Achievements during the final five years of the program will definitively have an impact on the future of scientific ocean drilling. The ECORD Council has expressed concern that the deep biosphere initiative of the Initial Science Plan has not yet been fully addressed, but hopefully this will be done soon, for exciting highly ranked proposals are waiting to be implemented.

Various activities to prepare for post-2013 drilling have already started, both at the European and the international level. The workshop organised by ESSAC at EGU in April will feed into the larger INVEST meeting to be held in September at Bremen *(see pages 10-11)*. INVEST will be a meeting of the global community and will be the first major step towards the elaboration of a science plan for the future. I encourage the community to think differently in terms of both scientific objectives and program structure. We will have to be creative to convince colleagues, administrators and politicians alike that continued access to ocean drilling capability is critical to conducting new and innovative research both to increase our knowledge of the Earth system and for the benefit of society.

The ECORD Council itself is already actively engaged in thinking about the new program post-2013, and the Council membership has changed significantly in the recent months. Unfortunately a number of the 'founder members' of ECORD have now moved to other positions, and I take this opportunity to thank them for their work and to convey the pleasure I have had to work with them. Making the consortium work is a considerable team effort; I have appreciated their commitment and wish them well in their new positions. I also welcome the new members who will bring a fresh outlook on ECORD and IODP.

There will also be a change at the IODP level where the Board of Governors has appointed a new IODP-MI President, Kyoshi Suyehiro, who is leaving his position as the Executive Director of Research at JAMSTEC in Japan. Kyoshi will take over from Manik Talwani who successfully led the program to be fully operational and initiated a potentially fruitful dialogue with industry. His task will be not only to run the program until its end in 2013, but also to promote a vision for the future. Kyoshi will start his work in May and I look forward to collaborating with him as this exciting program continues its evolution.

Catherine Mével, ECORD Managing Agency Director
http://www.ecord.org/ema.html

came from page 6

infrastructure of the MARUM and the Faculty of Geosciences, University of Bremen, includes an exceptional set of state-of-the-art and high-capacity facilities, for both the initial handling and for highly sophisticated analyses of marine sediments, including several non-destructive core logging systems (e.g., XRF core scanners, X-ray CT scanner). These facilities are also used to complete analyses that were not carried out on board. For example, IODP MSPs are normally not equipped with the laboratory facilities usually done on other IODP drilling vessels with more laboratory space. The Onshore Science Party (OSP) at the BCR takes place after MSP offshore operations are completed. At the OSP, cores are split and scientists have their first opportunity to study, analyse, and sample the cores in detail. This new concentration of cores at the BCR now also provides a tremendous opportunity in making the oldest drill cores easily available to non-destructive analytical systems that did not exist when many of these cores were first obtained. Therefore, the consolidation of old and new cores from similar regions should increase the use of this tremendous and still growing collection, a highly valuable scientific treasure both within and beyond Europe's borders.

Ursula Röhl, ESO Curation and Laboratory Manager

Reference

Firth, J., Gupta, L. and Röhl, U. (2009) New focus on the tales of the Earth - legacy cores redistribution project completed. Scientific Drilling, 7, 31-33, doi:10.2204/iodp.sd.7.03.2009

Related Web Links

BCR: *http://www.marum.de/en/IODP_Core_Repository.html*
IODP core repositories: *http://www.iodp.org/repositories/2/*
IODP: *http://www.iodp.org*
ODP: *http://www-odp.tamu.edu*
DSDP: *http://www.deepseadrilling.org*

Gilbert Camoin

ECORD Science Support & Advisory Committee
Updates

Bonnie Wolff-Boenisch

As I write this article the *JOIDES Resolution* has left Hawaii to carry out the first expedition of the Pacific Equatorial Age Transect program (Expeditions 320 with co-chief scientists H. Pälike and H. Nishi and 321 with co-chief scientists I. Raffi and M. Lyle) after a long interruption due to her refitting. This expedition clearly marks the rebirth of IODP with all drilling capabilities deployed simultaneously for the first time and the completion of ten expeditions before the end of 2010. Precise dates and official notification regarding these expeditions can be found in the table *below* and on the IODP web site at ***http://www.iodp.org/expeditions/***.

Over the last months we have completed the staffing of the following expeditions: 'Canterbury Basin Expedition 317' with co-chief scientists C. Fulthorpe and K. Hoyanagi, 'Wilkes Land Expedition 318' with co-chief scientists C. Escutia and H. Brinkhuis *(see pages 18-19)*, 'Bering Sea Expedition 323' with co-chief scientists C. Ravelo and K. Takahashi, 'New Jersey Shallow Shelf Expedition 313 with co-chief scientists G. Mountain and J.N. Proust *(see pages 3-4)*, and 'Great Barrier Reef Environmental Changes Expedition 325 with co-chief scientists J. Webster and Y. Yokoyama *(see pages 4-5)*. ECORD's enthusiasm and strength are demonstrated by the high number of applications to sail on IODP vessels and the selection of 61 scientists, including five co-chief scientists, engaged in seven expeditions for which the staffing has been finalised so far. ESSAC has also recently completed the selection of the ECORD scientists for the 'Shatsky Rise Expedition 324' with co-chief scientists W. Sager and T. Sano, which is scheduled from September to November 2009 and the NanTroSEIZE expeditions scheduled from May to October 2009: the Stage 2 'Subduction Input Expedition 322' with co-chief scientists S. Saito and M. Underwood and 'Riser/Riserless Observatory-1 Expedition 319' with co-chief scientists L. McNeill, E. Araki, T. Byrne and D. Saffer, which will include the first riser drilling operations by the *Chikyu*.

IODP Expeditions Drilling Schedule

Expedition	Drillship	Dates
Pacific Equatorial Age Transect (PEAT)	*JR*	March 5 - May 5, 2009
New Jersey Shallow Shelf	MSP	on or around May 2- Aug. 2009
Pacific Equatorial Age Transect (PEAT)/ Juan de Fuca	*JR*	May 5 - July 5, 2009
NanTroSEIZE 2 - Riser/Riserless Observatory 1	*Chikyu*	May 5 - Aug. 31, 2009
Bering Sea	*JR*	July 5 - Sept. 4, 2009
NanTroSEIZE 2 - Subduction Input	*Chikyu*	Sept. 1 - Oct. 10, 2009
Shatsky Rise	*JR*	Sept. 4 - Nov. 4, 2009
Great Barrier Reef Environmental Changes	MSP	Nov. - Dec. 2009
Canterbury Basin	*JR*	Nov. 4, 2009 - Jan. 4, 2010
Wilkes Land	*JR*	Jan. 4 - March 9, 2010

from http://www.iodp.org/expeditions - MSP: Mission-Specific Platform, *JR: JOIDES Resolution*

After the successful first phase of the ECORD Distinguished Lecturer Programme with a total of 23 talks in 15 ECORD and non-ECORD countries by the 2007-08 lecturers (Judy McKenzie, Benoît Ildefonse and Paul Wilson), the second phase of the programme was launched in September 2008 and will continue until June 2010. ESSAC has received applications to host the lectures from 31 institutions in 16 countries. Seven lectures by the 2008-2009 ECORD Distinguished Lecturers, Peter Clift, Achim Kopf and John Parkes have already been given in four countries; 22 additional lectures in nine other countries are scheduled until October 2009. The time and venue of the lectures are published on: ***http://www.essac.ecord.org/index.php?mod=education&page=dlp***.

ESSAC has recently issued a call for ECORD scholarships to attend one of the two ECORD-sponsored 2009 summer schools: 'Past Global Change Reconstruction and Modelling Techniques' in July-August 2009, Urbino, Italy, and 'Geodynamics of Mid-Ocean Ridges', September 2009 in Bremen, Germany *(see page 8)*. In 2008, thirteen young scientists from eight countries were selected from 45 applicants from 16 countries to receive an ECORD scholarship. The funding of the ECORD scholarship programme has been increased at ESSAC's request and fifteen young scientists will therefore receive a scholarship in 2009. In parallel, the funding of the ECORD summer schools has been also significantly increased.

Recently ESSAC has also been involved in the selection of two teachers from over 28 applications to take part in a research expedition, from June 23 to July 5, 2009 aboard the *JOIDES Resolution* in the frame of the 'School of Rock 2009', an initiative of the Consortium for Ocean Leadership.

At its last meeting held on 27-28 October 2008 in Tübingen, Germany, ESSAC has defined the format of a new tool called 'ECORD Grants', which will consist of small and short-term grants to cover travel and laboratory expenses to work on DSDP/ODP/IODP cores and/or data. The objective of this programme is to increase the use of the relevant materials, and to attract more young scientists and IODP newcomers. This concept has been accepted by the ECORD Council and the first 'ECORD Grants' will be offered in 2010.

ESSAC is very active in preparing the 'IODP New Ventures in Exploring Scientific Targets' (INVEST) Conference, which will be held on September, 23-25, 2009 in Bremen, Germany *(see page 17)*. An EGU Interdivsion Session *(see page 11)* entitled 'Beyond 2013 - The Future of European Scientific Drilling' (convenors: G. Camoin and R. Stein will be followed by a 2-day ESF Magellan workshop at the University of Vienna specifically addressing the future of European scientific drilling research with the objective to sharpen European interests in the future IODP. The key items of the

EGU Session and the workshop include: the future of ECORD, new research initiatives and emerging fields in scientific drilling, relationships between IODP and other programmes, collaboration between academia and industry, and new technologies and the mission-specific platform approach. In parallel, ESSAC has initiated a web forum, which provides all people interested in scientific drilling with the opportunity to be included in discussions regarding not only the aspects listed above but also the IODP achievements and perspectives, the IODP and ECORD structures, and the problems that IODP has faced in the past.

The ESSAC activities are developing in parallel with the very successful ESF Magellan workshop series. Three ESF Magellan-sponsored workshops have been or will be held in 2009: 'Cold-Water Carbonate Reservoir systems in Deep Environments-COCARDE' in Fribourg, Switzerland was convened by S. Spezzaferri *(see page 13)*, 'Evolution of the Baltic Sea through the Last Glacial Cycle' in Copenhagen, Denmark, was convened bt J.B. Jensen, and 'Beyond 2013 - The Future of European Scientific Drilling' in Vienna, Austria is convened by G. Camoin, R. Stein and M. Wagreich. Furthermore, this programme will also fund a 'Magellan Introductory Course in Ocean Drilling Sciences' in Urbino, Italy, convened by H. Brinkhuis, prior to the ECORD summer school 'Past Global Change Reconstruction and Modelling Techniques' *(see page 8)*.

In conclusion, while preparing the next ESSAC meeting, which will be held on May 26-28, 2009 in Sesimbra, Portugal, I am confident that ESSAC has grown considerably and extended its activities and is now playing a pivotal role to better serve the ECORD contribution to IODP. This could not have been achieved without the dedication and hard work of Bonnie Wolff-Boenisch, the ESSAC Science Coordinator and of the ESSAC delegates, as well as the strong support from the ECORD Council members. The Sesimbra meeting will be the last for the ESSAC Office in Aix en Provence before its rotation to Bremerhaven, Germany, next October with Rüdiger Stein as the new ESSAC Chair.

Gilbert Camoin, ESSAC Chair
http://www.essac.ecord.org

EGU 2009 Sessions related to scientific drilling

'Beyond 2013 - The Future of European Scientific Drilling Research' - Interdivision Session

In preparation for the 'IODP New Ventures in Exploring Scientific Targets' (INVEST) Conference - a major community-wide conference addressing all international IODP partners - USA, Europe, Japan, Canada, Asian and Oceanian countries - to be held from September 23 to 25, 2009, ECORD is organising an EGU Interdivision Session to discuss future directions of scientific ocean drilling and to outline ECORD's vision of scientific drilling beyond 2013.
Convenors: G. Camoin and R. Stein - http://meetingorganizer.copernicus.org/EGU2009/session/1355

Oral Programme
Thursday, 23 April 2009 - 13:30 -15:00 , Room 36

- J.H. Behrmann: A critical review of existing innovative science and drilling proposals within IODP
- R. Stein and B. Coakley: Scientific drilling in the Arctic Ocean: a challenge for the next decades
- R. Zahn, C. Feibel, and ICDP/IODP co-PIs: Land - Ocean climate linkages and the human evolution - new ICDP and IODP drilling initiatives in the East African Rift Valley and SW Indian Ocean
- B. Ildefonse, N. Abe, P.B. Kelemen, H. Kumagai, D.A.H. Teagle, D.S. Wilson, and Mission Moho Proponents: Mission Moho: rationale for drilling deep through the ocean crust into the upper mantle
- P. Favali and L. Beranzoli: Seafloor observatories, benefits for the marine and earth sciences and synergies
- A. Camerlenghi: Addressing submarine geohazards through scientific drilling.

Poster Session
Thursday, 23 April 2009, Hall A
Display time: 08:00–19:30 - Attendance time: 17:30–19:00

The following key items will be addressed:

- The future of ECORD (science, technology, management),
- New research initiatives and emerging fields in scientific drilling,
- Relationships between IODP and other programmes (e.g. ICDP, IMAGES etc),
- Collaboration between academia and industry,
- New technologies and the mission-specific platform approach.

'New findings and achievements in ocean and continental drilling (IODP-ICDP)': Climate:Past, Present, Future Session

This joint IODP-ICDP session (CL33) presents major scientific achievements in ocean and continental drilling with special emphasis on the European contributions to IODP and ICDP.
Convenors: U.Röhl, H. Brinkhuis, D. Hodell and B. Ildefonse - http://meetingorganizer.copernicus.org/EGU2009/session/274

Oral Programme: ***Thursday, 23 April 2009 - 15:30 -17:00 , Room 27***
Poster Session: ***Thursday, 23 April 2009, Hall X/Y - Display time: 08:00–19:30 - Attendance time: 17:30–19:00***

Workshop and Conference Announcements

- ESF Magellan Series - *http://www.esf.org/magellan*
  - *Beyond 2013 - The Future of European Scientific Drilling Research - April 24-25, 2009, Vienna, Austria*
- IODP-MI Workshops - *http://www.iodp.org/workshops*
- Distinguished Lecturer Programme 2008-09 - *http://www.essac.ecord.org/index.php?mod=education&page=dlp*

International Conferences:

- EGU 2009, April 19-24, 2009, Vienna, Austria - http://meetings.copernicus.org/egu2009/
- JPGU 2009, May 16-21,2009, Chiba, Japan - http://www.jpgu.org/meeting_e/index.html
- Joint AGU-GAC, May 24-27, 2009, Toronto, Canada - http://www.agu.org/meetings/ja09/
- AOGS 2009, August 11-15, 2009, Singapore - http://www.asiaoceania.org
- INVEST, September 23-25, 2009, Bremen, Germany - http://www.marum.de/iodp-invest.html

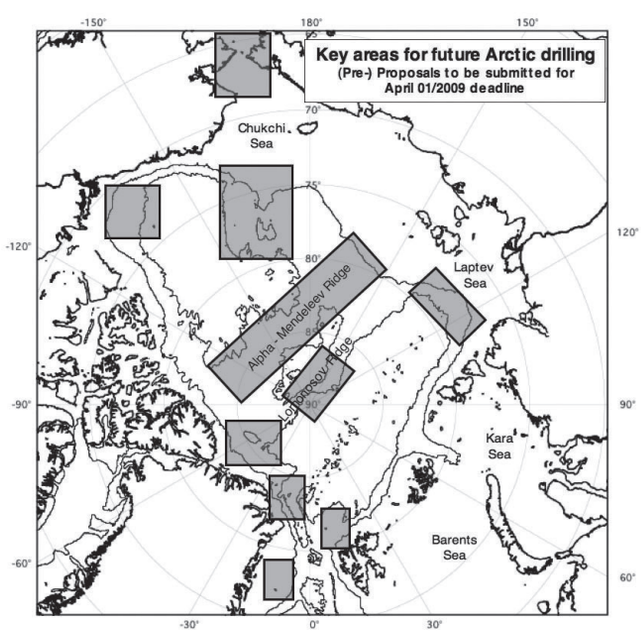
Workshop and Conference Reports

♦ Arctic Ocean History: From speculation to reality, November 3-5, 2008, Bremerhaven, Germany

Convenors: Bernard Coakley (bcoakley@gi.alaska.edu) and Rüdiger Stein (Ruediger.Stein@awi.de)

Although major progress in Arctic Ocean research has been made during the last decades, the knowledge of its short- and long-term paleoceanographic and paleoclimatic history as well as its plate-tectonic evolution is much behind that from the other oceans. That means - despite the importance of the Arctic in the climate system - the database we have from this area is still very weak, and large parts of the climate history have not been recovered at all in sedimentary sections. With the successful completion of IODP Expedition 302 ('Arctic Coring Expedition' - ACEX), the first MSP expedition within IODP, a new era in Arctic research has begun. The success of ACEX has certainly opened the door for further scientific drilling in the Arctic Ocean, and will frame the next round of questions to be answered from new drill holes to be taken during the next decades.
In order to discuss and plan the future of scientific drilling in the Arctic Ocean, an international workshop was held at the Alfred Wegener Institute in Bremerhaven, Germany, from November 3 to 5, 2008. About 95 scientists from ECORD, US, Russia, Japan, and Korea and observers from oil companies participated in the workshop. Funding of the workshop was provided by the European Science Foundation (ESF Magellan Workshop Series Programme), the Consortium for Ocean Leadership (US), the Arctic Ocean Sciences Board, and the Nansen Arctic Drilling Program as well as by sponsorships from British Petroleum, ConocoPhillips, ExxonMobil, Norwegian Petroleum Directorate, Shell International, and StatoilHydro.

The major targets of the workshop were: **(1)** to bring together an international group of Arctic scientists, young scientists and ocean drilling scientists to learn and exchange ideas, experience and enthusiasm about the Arctic Ocean; **(2)** to develop a scientific drilling strategy to investigate the tectonic and paleoceanographic history of the Arctic Ocean and its role in influencing the global climate system; **(3)** to summarise the technical needs, opportunities, and limitations of drilling in the Arctic; and **(4)** to define scientific and drilling targets for specific IODP-type campaigns in Arctic Ocean key areas to be finalised in the development of drilling proposals.



The first day of the workshop focused on presentations about the history of the Arctic Ocean, the legacy of high latitude ocean drilling, the existing site survey database, the possibilities of collaboration with industry and the process of developing ocean-drilling legs through IODP. The next day and a half was spent in thematic and regional break-out groups discussing the particular questions to be addressed by drilling and the particular targets for Arctic scientific drilling. Within the working groups, key scientific questions, site surveys (available and needed) as well as strategies for reaching the overall goals were discussed and - as one of the main results - core groups for further development of drilling proposals were formed. Based on discussions at this meeting, about ten new pre-proposals will be submitted to IODP for the April 1, 2009 deadline, i.e., at a critical time, both for the future of Arctic Ocean science and the future of scientific ocean drilling.

♦ COld-water CArbonate Reservoir systems in Deep Environments (COCARDE): a Pilot Industry-Academia Partnership in Marine Research Drilling, January 21-24, 2009, Fribourg, Switzerland

Convenor: Sylvia Spezzaferri (silvia.spezzaferri@unifr.ch)

Cold-water carbonate mounds supporting cold-water coral ecosystems, often dominated by *Lophelia pertusa (below)* and *Madrepora oculata*, are widespread along the Atlantic European margins. Since the late nineties, more and more cold-water coral carbonate mound and coral bank provinces have been reported along the Atlantic margins from Norway to Mauritania.

Lophelia pertusa. Photo taken during the cruise BiSCOSYSTEMS, May 2008 (courtesy Lies DeMol and David Van Rooij).

In the past ten years, the 'modern cold-water coral carbonate mound research' community has accumulated new insights in (**i**) their occurrence along continental margins and their structural and basinal setting; (**ii**) their province landscapes; (**iii**) their size and composition; (**iv**) the key players in their development: external vs internal biogeochemical controls, related biotopes; (**v**) role of microbial communities in their development; (**vi**) possible primary templates for reservoir compartments, (**vii**) fluid-migration pathways and implications for reservoir connectivity, (**viii**) early diagenesis, carbonate dissolution and precipitation, dolomitisation, and hence (**ix**) controls on reservoir porosity - primary and secondary - permeability and compartmentalisation. These topics are of particular interest to the hydrocarbon industry.

As part of the ESF Magellan Workshop Series Programme on Marine Research Drilling, a workshop, entitled 'COld-Water CArbonate Reservoir systems in Deep Environments (COCARDE): A Pilot Industry-Academia Partnership in Marine Research Drilling', was held in Fribourg, Switzerland on January 21-24, 2009. The workshop gathered together 37 scientists, some of whom are involved in two IODP Proposals (689 and 673) on related topics, as well as ESF EUROCORES, ESF EUROMARC and EU-FP6-7 projects.
The participants, representing a wide spectrum of disciplines in geosciences and biology, joined with the aim to discuss and plan future research strategies and joint projects with the industry, ideas which have been germinated also within IODP. The themes of the workshop focused on **1)** Palaeoenvironment; **2)** The Microbial Filter; **3)** Petrophysical Characterisation; **4)** Connectivity and Compartmentalisation – the Fluid System; **5)** Advancing our Insight in Phanerozoic Reef Systems – the Slope Niche.

One of the most important outcomes of the workshop was the identification of the need for combined research efforts on fossil and modern cold-water carbonate settings to provide the baseline reference standard for a better understanding of these exceptional systems and their potential as hydrocarbon reservoirs.

Participants: *Silvia Spezzaferri, Stephan Margreth, Giordana Gennari, Andre Strasser, David Jaramillo, University of Fribourg, Switzerland; Jean-Pierre Henriet, Lies De Mol, Hans Pirlet, and David Van Rooij RCMG, Ghent University, Belgium; Anneleen Foubert, University of Leuven, Belgium; Christian Dullo, Andres Rüggeberg and Jacek Raddatz, IFM-GEOMAR, Kiel, Germany; Jürgen Titschack, University of Erlangen-Nuremberg, Germany; Laura Wehrmann, Max Planck Institute for Marine Microbiology, Bremen, Germany; Veerle Huvenne, National Oceanography Centre, Southampton, Great Britain; Tim Freudenthal and Claudia Wienberg, MARUM, University of Bremen, Germany; Kai Mangelsdorf, GeoForschungsZentrum (GFZ) Potsdam, Germany; Andrew Wheeler, University College Cork, Ireland; Roberto Barbieri, University of Bologna, Italy; Luis Menezes Pinheiro, Universidade de Aveiro, Portugal; Menchu Comas, CSIC and University of Granada, Spain; Judith A. McKenzie and Stefanie Templer, ETH, Zurich, Switzerland; Jan Pawlowski, Daniel Ariztegui and Elias Samankassou, University of Geneva, Switzerland; Furu Mienis, Alina Stadniskaia, Cees van der Land, Royal Netherlands Institute for Sea Research (Royal NIOZ), The Netherlands; Stephanie Larmagnat and Merouane Rachidi, University of Laval, Canada; Naima Hamoumi, Mohamed V University Rabat-Agdal, Morocco; Driss Chafiki, Cadi Ayyad University, Marrakech, Morocco.*

Detailed reports of the workshops are posted on the ESSAC web site at:
http://www.essac.ecord.org/index.php?mod=education&page=scientific-res

ECORD Representatives
in IODP Committees and Panels of the Science Advisory Structure

Engineering Development Panel (EDP)		
Maria Ask	Sweden	maria.ask@ltu.se
Roland Person	France	roland.person@ifremer.fr
Lothar Wohlgemuth	Germany	wohlgem@gfz-potsdam.de
John Thorogood	UK	

Scientific Technology Panel (STP)		
Georges Gorin	Switzerland	georges.gorin@terre.unige.ch
Sebastian Krastel	Germany	skrastel@ifm-geomar.de
Marc Reichow	UK	mkr6@le.ac.uk
Douglas Schmitt	Canada	doug@phys.ualberta.ca

Science Planning Committee (SPC)		
Jan Behrmann	Germany	jbehrmann@ifm-geomar.de
Gilbert Camoin	France	gcamoin@cerege.fr
Gretchen Früh-Green	Switzerland	frueh-green@erdw.ethz.ch
Hugh Jenkyns	UK	hughj@earth.ox.ac.uk

Science Advisory Structure Executive Committee (SASEC)		
Nicholas Arndt	France	arndt@uij-grenoble.fr
Gerold Wefer	Germany	gwefer@marum.de

Environmental Protection and Safety Panel (EPSP)		
Michael Enachescu	Canada	michaele@mun.ca
Philippe Lapointe	France	philippe.lapointe@total.com
Bramley Murton	UK	bjm@noc.soton.ac.uk
Dieter Strack	Germany	ddhstrack@aol.com

Site Survey Panel (SSP)		
Christoph Gaedicke	Germany	gaedicke@bgr.de
Gilles Lericolais	France	gilles.lericolais@ifremer.fr
Holger Lykke-Andersen	Denmark	hla@geo.au.dk
Neil Mitchell	UK	neil.mitchell@manchester.ac.uk

Science Steering and Evaluation Panel (SSEP)		
Serge Berné	France	serge.berne@univ-perp.fr
Henk Brinkhuis	Netherlands	h.brinkhuis@uu.nl
Daniele Brunelli	Italy	daniele.brunelli@unimore.it
Julie Carlut	France	jcarlut@geologie.ens.fr
Timothy Elliott	UK	tim.elliott@bris.ac.uk
Kai-Uwe Hinrichs	Germany	khinrichs@uni-bremen.de
Achim Kopf	Germany	akopf@uni-bremen.de
Heiko Pälike (co-chair)	UK	heiko@noc.soton.ac.uk

ESSAC Delegates and Alternates

Country	Delegate	*Alternate*
Austria	Werner E. Piller werner.piller@uni-graz.at	*Michael Wagreich* *michael.wagreich@univie.ac.at*
Belgium	Rudy Swennen rudy.swennen@geo.kuleuven.ac.be	*Jean-Pierre Henriet* *jeanpierre.henriet@ugent.be*
Canada	Neil Banerjee neil.banerjee@uwo.ca	*Ulrich G. Wortmann* *uli.wortmann@utoronto.ca*
Denmark	Marit-Solveig Seidenkrantz mss@geo.au.dk	*Paul Knutz* *knutz@geol.ku.dk*
Finland	Kari Strand kari.strand@oulu.fi	*AnnaKaisa Korja* *annakaisa.korja@helsinki.fi*
France	Gilbert Camoin (chair) gcamoin@cerege.fr	*Benoit Ildefonse* *benoit.ildefonse@gm.univ-montp2.fr*
Germany	Rüdiger Stein (vice-chair) ruediger.stein@awi.de	*Jochen Erbacher* *j.erbacher@bgr.de*
Iceland	Bryndís Brandsdóttir bryndis@raunvis.hi.is	*Guðrún Helgadóttir* *gudrun@hafro.is*
Ireland	Xavier Monteys xavier.monteys@gsi.ie	*David Hardy* *david.hardy@gsi.ie*
Italy	Elisabetta Erba elisabetta.erba@unimi.it	*Leonardo Sagnotti* *sagnotti@ignv.it*
Netherlands	Lucas Lourens llourens@geo.uu.nl	*Stefan Schouten* *schouten@nioz.nl*
Norway	Nalan Koç nalan@npolar.no	*Helga F. Kleiven* *kikki@uib.no*
Portugal	Fatima Abrantes fatima.abrantes@ineti.pt	*Luis F. Menezes Pinheiro* *lmp@geo.ua.pt*
Spain	Menchu Comas mcomas@ugr.es	*Victor Diaz del Rio* *diazdelrio@ma.ieo.es*
Sweden	Ian Snowball ian.snowball@geol.lu.se	*Eve Arnold* *emarnold@geo.su.se*
Switzerland	Judith McKenzie judy.mckenzie@erdw.ethz.ch	*Helmut Weissert* *helmut.weissert@erdw.ethz.ch*
United Kingdom	Rachael H. James R.H.James@noc.soton.ac.uk	*Rosalind Rickaby* *rosalind.rickaby@earth.ox.ac.uk*

More information at: ***http://www.essac.ecord.org***

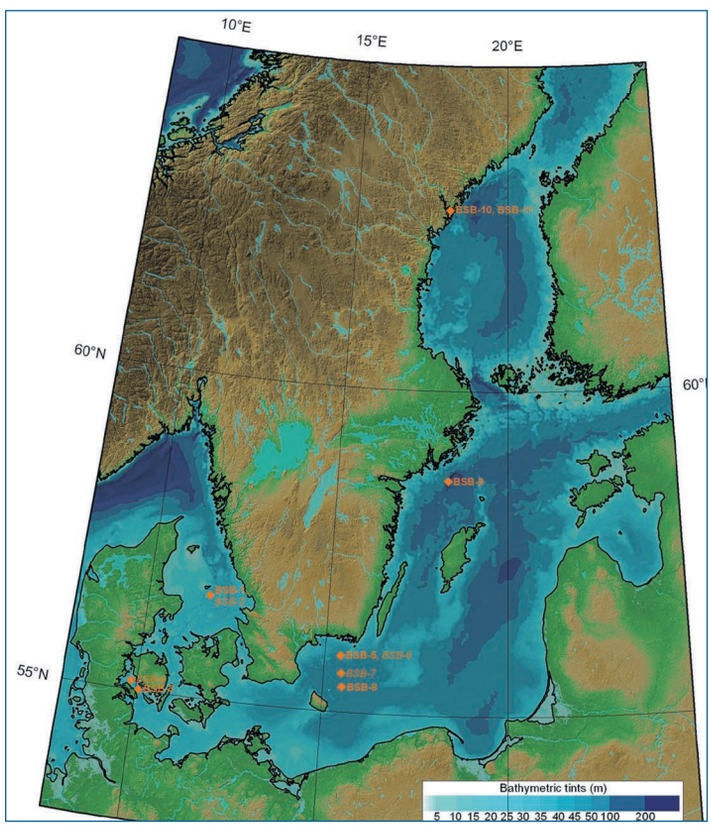
Highlights of IODP Proposals

Paleoenvironmental evolution of the Baltic Sea through the Last Glacial Cycle - an IODP drilling initiative

T. Andrén, S. Björck, B. B. Jørgensen, K. L Knudsen, K. Lambeck, J. Harff, A. Bitinas, E. Emelyanov, M. Jakobsson, J. B. Jensen, A. Kotilainen, V. Spiess, S. Uścinowicz, S. Veski and V. Zelchs

IODP Proposal 672

The Baltic Sea Basin (BSB) is one of the world's largest intra-continental basins, and has served as a depositional sink throughout its geological history, and its accumulated sediments comprise a unique high-resolution paleoenvironmental archive. The high sedimentation rates (1-5 m/1000 years) in the BSB provide a unique opportunity to reconstruct climatic variability of global importance, controlled by e.g. changes in North Atlantic meridional overturning circulation (MOC), the North Atlantic Oscillation (NAO) and the Arctic Oscillation (AO) in great detail (up to interannual time-scale).



Bathymetric map of the BSB with the proposed sites (italics=alternate sites) indicated (IODP Proposal 672full, 2008).

Our knowledge of the development of the BSB is based on results from short cores (up to 20 m long, covering mainly the Late Pleistocene and Holocene) and regional interpretations mostly based on terrestrial records. An IODP initiative to support mission-specific platforms would provide us with a composite of sediments covering the time span of the whole last Glacial Cycle. This initiative would provide answers to the following scientific questions:
(1) the transition from glacial to interglacial periods and vice versa, and its regional driving forces, **(2)** periodicities in Fennoscandian Ice Sheet dynamics and its possible feedback to the MOC. Seismic profiling has revealed, **(3)** varved Holocene BSB sediments as detailed archives of changes in Holocene atmospheric circulation patterns, including variations in AO and NAO, and **(4)** influence of glacial/interglacial change on microbial communities.
Eemian sequences are expected to be found in the western Baltic Sea, particularly in the Little Bealt area (BSB-3), which is regarded as having been ice free before the LGM. There is the prospect of recovering complete records of the early and middle Weichselian in the western Baltic, whereas the northern Baltic has late Pleistocene to Holocene sediments with high resolution.

A full proposal for a Baltic Sea drilling initiative within the frame of the IODP program is being prepared by a team of scientists from Australia, Denmark, Estonia, Finland, Germany, Latvia, Lithuania, Poland, Russia, and Sweden.

How to Submit an IODP Drilling Proposal ?
next submission deadline: October 1, 2009
Further information on ESSAC website at:
www.essac.ecord.org

A Letter from Ireland

Irish Involvement in IODP

In 2005 the Irish government announced that Ireland would affiliate to IODP by joining ECORD *(see http://www.iodp.org/ireland-joins-ecord/)*. Through the agency of the Geological Survey of Ireland (GSI), scientists of Irish colleges and institutes now have access to the outstanding science that has become a feature of this program. Indeed, 2005 saw the first ODP/IODP expedition to take place entirely in Irish waters. The expedition, 307 (April 26 - May 16, 2005) drilled three sites at Challenger Mound (170m high) in the Porcupine Seabight, west of Ireland *(see http://iodp.tamu.edu/scienceops/expeditions/exp307.html)*. The platform to carry out this ambitious drilling program was the American rig vessel, the *JOIDES Resolution*, which at 143 metres is one of the largest research ships in the world. She successfully drilled 11 holes, of average 200m length, in three target sites, recovering 1400m of sediment core.
Scientific results provided a new age model for the first complete section drilled through a deep-water coral mound. The 155m-log section from Challenger Mound in the Porcupine Seabight, southwest of Ireland, is on Miocene siliciclastics and consists entirely of sediments bearing well-preserved cold-water coral *Lophelia pertusa*. Two Irish based scientists took part in this expedition, Boris Dorschel (University College Cork - UCC) and Xavier Monteys (GSI).

The JOIDES Resolution in Dublin Port, readying for IODP Expedition 307 (photo Integrated Ocean Drilling Program).

The National Committee for IODP ("IODP Ireland")

The principal aims of the committee are to maximise participation for Irish scientists in IODP and to ensure that Ireland's scientific priorities are considered in developing the IODP science plan. The committee endeavours to encourage and assist Irish scientists to submit drilling proposals and attend workshops on the various themes of the IODP science plan; to encourage and rank applications from Irish scientists and students to sail on IODP expeditions; to nominate and assist students to attend summer schools; to elect delegates to the ECORD and IODP committees. Once demand for participation from Irish scientists is demonstrated, a case can be made for an increase in Ireland's contribution to IODP, which in turn will increase our quota of opportunities.

The committee has supported an Irish scientist (Dr. Peter Haughton, University College Dublin - UCD) in winning a berth on the Canterbury Basin Expedition (Expedition 317 on the *JOIDES Resolution*, originally scheduled for November 2008 but now rescheduled for November 2009. It has also supported the successful application of Kristine Larson of Trinity College for an ECORD Scholarship, as well as awarding two IODP Ireland Scholarships to assist students (Lee Toms, UCD and Billy Wood, National University of Ireland, Galway - UIG) to attend an ECORD sponsored summer school on Palaeoclimate Modelling in Urbino, Italy. Separately, under RTDI funding three Irish universities have been able to purchase a range of marine instrumentation useful in drilling-related scientific analysis. UCD has purchased an Itrax geochemical scanner, Trinity College a laser granulometer and NUI Maynooth an MSCL core logger.

Juergen Titschack (Sedimentologist, Universität Erlangen-Nürnberg), Anneleen Foubert (Paleomagnetist, Universiteit Leuven), and Boris Dorschel (Science Observer/Sedimentologist, University College Cork) discuss some of their findings in the core lab - IODP Expedition 307, (photo Integrated Ocean Drilling Program).

The National Committee membership is: Pat Shannon (University College Dublin - UCD), Robin Edwards (Trinity College Dublin - TCD), Peter Croker (PAD), Andy Wheeler (University College Cork - UCC), Fiona Grant (Marine Institute, MI), Xavier Monteys, Koen Verbruggen and Brian McConnell (Geological Survey of Ireland - GSI). It is intended to co-opt other members to cover expertise gaps in low-temperature geochemistry and geomicrobiology.

Koen Verbruggen, ECORD Council delegate

The Future of IODP - New Ventures in Exploring Scientific Targets (INVEST)

From September 23 to 25, 2009 scientists from the IODP community will come together in Bremen to discuss "New Ventures in Exploring Scientific Targets" (INVEST). The meeting is being organised as a large, multidisciplinary, international community meeting, whose focus is to define the scientific research goals of the second phase of the IODP, expected to begin late in 2013. INVEST is open to all interested scientists and students as the principal opportunity for international science community members to help shape the future of scientific ocean drilling. The goals of INVEST are to:

- synthesise and summarise the state of knowledge across major interdisciplinary geoscience themes,
- identify emerging science fields,
- develop new research initiatives and recommend scientific implementation strategies,
- address societal relevance of future drilling, and
- outline fiscal and technological needs.

Further details including funding and travel support can be found at the INVEST website: ***http://marum.de/iodp-invest.html, and on www.iodp.org***

In preparation for INVEST, a workshop "Beyond 2013 : the Future of European Scientific Drilling Research" is convened by Gilbert Camoin, Rüdiger Stein and Michael Wagreich at the University of Vienna, Geocenter, April 24-25, 2009 *(see pages 10-11)*. Scientific context, goals, topics, and format of the workshop are available under ***http://www.essac.ecord.org/documents/Beyond_2013_annoucement.pdf***

View of the "ECORD Armada" for drilling the Lomonosov Ridge, close to the North Pole during the Arctic Coring Expedition (IODP Expedition 302), © ECORD/IODP.

The INVEST conference will comprise plenary and breakout-group sessions as well as keynote lectures. A detailed conference programme will be made available on June 30, 2009.

An opening address entitled "Ocean Drilling: A 21st Century Endeavour to Understand the Earth System" will be given by Vincent Courtillot. Keynote lectures are provided by:

- **Andrew Fisher** - Achievements and Challenges in Subseafloor Hydrogeology during Scientific Ocean Drilling,
- **David Hodell** - Paleoclimate Opportunities to Constrain Abrupt and Rapid Climate Change,
- **Tori Hoehler** - The View from Space: What Ocean Drilling can Tell us About Habitability" - Life's Limits, and the Possibilities for Life Beyond Earth,
- **Bo Barker Jørgensen** - Microbial Life in the Deep Seabed - the Starving Majority,
- **Jeff Kiehl** - Paleoceanography: Providing Critical Knowledge to Improve Climate Model Predictions,
- **Naohiko Ohkouchi** - Future Directions in Probing Global Biogeochemical Cycles,
- **Terry Plank** - Down and Back Again: Cycles and Growth at Convergent Margins,
- **Kiyoshi Suyehiro** - Ocean Borehole Observatories: Scanning and Sounding the Earth in Motion,
- **Doug Toomey** - Outstanding Questions of Crust-Mantle Interaction Below the Ocean Basins: What can Deep Earth Sampling Tell us?, and
- **Jim Zachos** - The Potential and Promise of Studies of Past Warm Worlds.

The DP Hunter, the drilling vessel of the Tahiti Sea-Level Expedition (IODP Expedition 310), © ECORD/IODP.

Wolfgang Bach, Co-Chair of the scientific organising committee

Host and Contacts:

INVEST Conference, c/o Gerold Wefer, MARUM, Universität Bremen, Leobener Str., 28359 Bremen, Germany,
Tel.: +49 (0)421 218 65521, *IODP-INVEST@marum.de*

IODP-MI, Hans Christian Larsen, Vice-President of Science Planning , *INVEST@iodp-mi-sapporo.org*

Scientific organising committee:
Christina Ravelo (co-chair), Wolfgang Bach (co-chair), Jan Behrmann, Gilbert Camoin, Bob Duncan, Katrina Edwards, Sean Gulick, Fumio Inagaki, Heiko Pälike, and Ryuji Tada.

IODP Expedition 318: Cenozoic East Antarctic Ice Sheet Evolution from Wilkes Land Margin Sediments Drilling the Greenhouse-Icehouse Transition

Carlota Escutia Dotti[1], Henk Brinkhuis[2] and Adam Klaus[3]

When did Antarctica become glaciated? Were the ice sheets stable after they had formed? Understanding the evolution and dynamics of the Antarctic cryosphere from its probable inception during the Eocene–Oligocene transition (~34 Ma), through the periods of climate change during the Cenozoic, is of major scientific and societal interest *(Fig. 1)*. The transition from Greenhouse to Icehouse Earth was the most significant step in large-scale Cenozoic planetary change, impacting e.g., global sea level, albedo, and oceanographic and biotic evolution. State-of-the-art climate models combined with paleoclimatic proxy data now suggest that the main triggering mechanism for initial

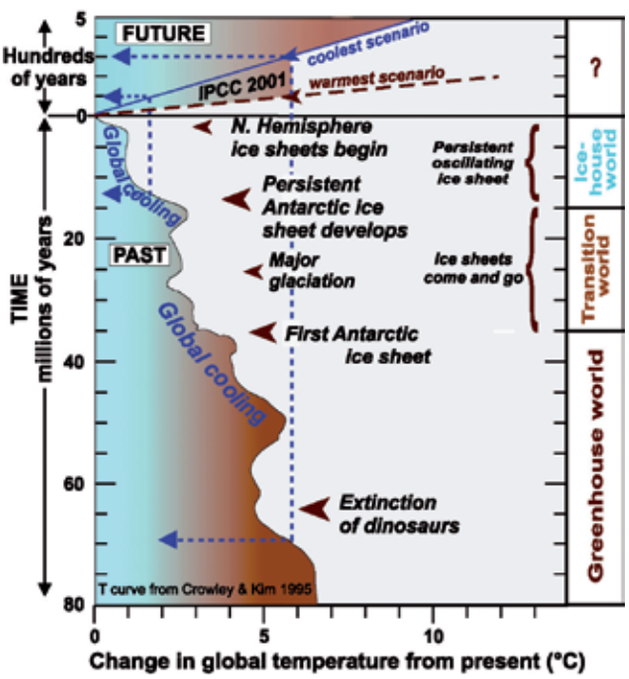


Fig. 1: Earth's temperature variability during the last 80 m.y. bas.ed on reconstructions from deep-marine oxygen isotope records. Future atmospheric temperature scenarios, based on Intergovernmental Panel on Climate Change 2001 greenhouse trace gas forecasts, are shown at top of diagram.

inception and development of the Antarctic glaciation was the decreasing levels of CO_2 concentration in the atmosphere *(Fig. 2)*. With current rising atmospheric greenhouse gases resulting in rapidly rising global temperatures, studies of polar climates, and the Antarctic cryosphere behavior in particular, are prominent on the research agenda. How stable will Antarctic ice be in the future? Important lessons from the past can be learned from the circum Antarctic sedimentary archive. Recognising this, international ocean drilling around the Antarctic margin over the past decades yielded important information, while ANDRILL is now breaking records in drilling continuous Neogene cores. Yet, crucial sectors of the Antarctic margin, notably the Wilkes Land margin south of New Zealand, remained uncharted. Here, the giant ice and moraine feeder channels of the East Antarctic Ice Sheet (EAIS) reach the ocean, as they did in the past. Some years ago, recognising the importance of this region, Carlota Escutia

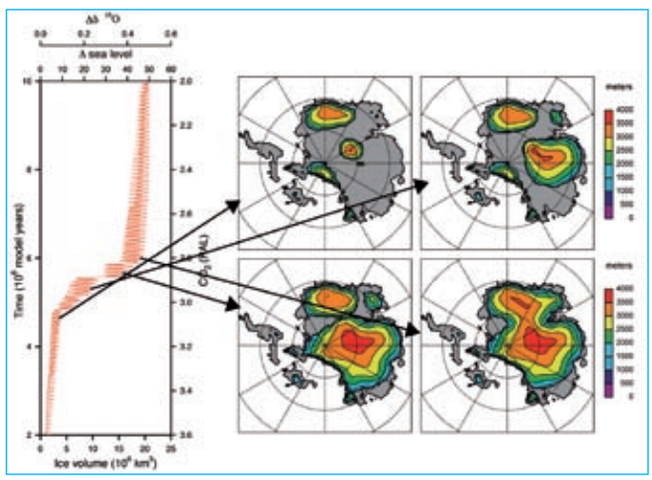


Fig. 2: Simulated initiation of East Antarctic glaciation in the earliest Oligocene, using a coupled GCM-ice sheet model (from DeConto and Pollard, 2003a). This model shows the main triggering mechanism for initial inception and development of the East Antarctic Ice Sheet were the decreasing levels of CO_2 concentration in the atmosphere. Note these models show the initiation of glaciation to take place in a "two-step" cooling trend. The first step resulting in glaciation in the Antarctic continental interior, discharging mainly through the Lambert Graben to Prydz Bay, and the second step resulting in the connection an expansion of the ice sheet, reaching sea level in the Wilkes Land at a later stage.

and colleagues produced a strong drilling proposal (482full) using a wealth of seismic information. Eventually, that proposal was combined with Ancillary Project Letter 638 (by Dunbar and others, Holocene), and transformed into IODP Expedition 318 to the Wilkes Land margin of Antarctica and planned for the *JOIDES Resolution*, operating under contract with the U.S. Implementing Organization (USIO). The expedition is currently scheduled to begin in Wellington, New Zealand, in January 2010 and end in Wellington the following March, with Escutia and Brinkhuis as co-chief scientists, and Klaus as staff scientist.

Drilling the Antarctic Wilkes Land margin is designed to provide long-term records from along an inshore to offshore transect *(Fig. 3)*, of Antarctic glaciation and its intimate relationships with global climatic and oceanographic change. The principal goals are

1. To obtain the timing and nature of the first arrival of ice at the Wilkes Land margin (referred to as the «onset of glaciation») inferred to have occurred during the earliest Oligocene (Oligocene isotope event-1),

2. To obtain the nature and age of the changes in the geometry of the progradational wedge interpreted to correspond with large fluctuations in the extent of the East Antarctic Ice Sheet (EAIS) and possibly coinciding with the transition from a wet-based to a cold-based glacial regime (late Miocene–Pliocene?),

3. To obtain a high-resolution record of Antarctic climate variability during the late Neogene and Quaternary, and

4. To obtain an unprecedented, ultrahigh resolution (i.e., annual to decadal) Holocene record of climate variability.

The Wilkes Land drilling will provide constraints of the age, nature, and paleoenvironment of deposition of the previously only seismically inferred glacial sequences. Determining the chronostratigraphy of the Wilkes Land sediments, which is at present nonexistent, is critical to ground-truth the existing glacial-stratigraphic and ice sheet volume models for this margin. Ice sheet models suggest that the Wilkes Land margin became glaciated in

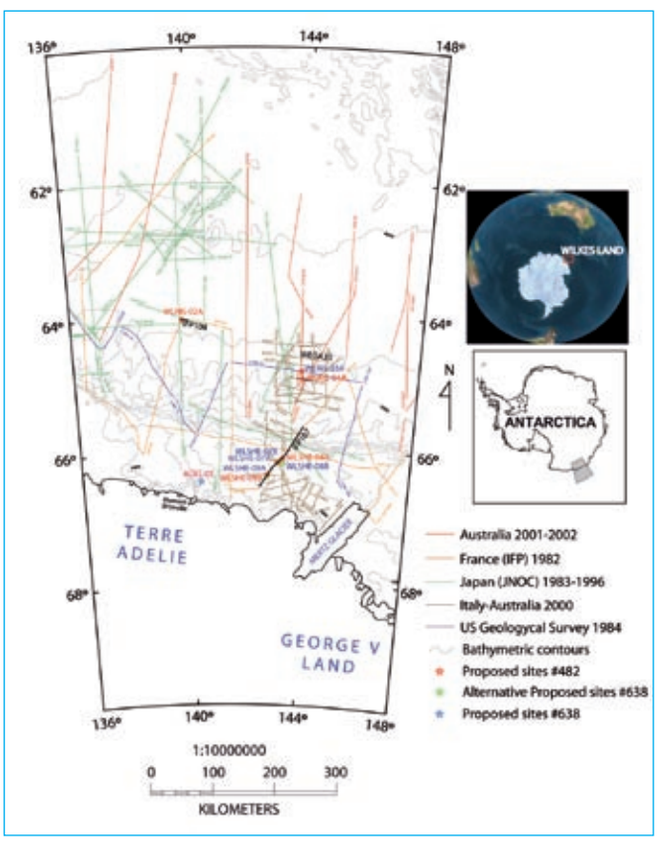


Fig. 3: Drilling sites and profile locations. Primary sites (red) and all alternate sites (blue) are shown in more detail on ***http://publications.iodp.org/scientific_prospectus/318/index.htm***

the later stages of East Antarctic glaciation, after Prydz Bay and the Weddell Sea; therefore, it is presumed to be more sensitive to future temperature changes. Drilling the Wilkes Land margin has a unique advantage in that Unconformity WL-U3, inferred to separate preglacial strata below from glacial strata above in the continental shelf, can be traced to the continental rise deposits, allowing sequences to be linked from shelf to rise *(Fig. 4)*. The EAIS in the Wilkes subglacial basin is grounded below sea level and therefore may have been more sensitive to climate changes in the late Neogene. The sedimentary sections on the Wilkes Land margin may therefore not only hold the record of the time when the EAIS first reached this margin, but also the record of ice sheet fluctuations during times when the EAIS is thought to be more stable (15 Ma–recent). This information is critical for developing reliable models of future Antarctic ice sheet behavior.

To obtain the most complete record of the history of Antarctic glaciation, the drilling strategy is to sample sediments from this margin in a shelf-rise-abyssal plain transect. The continental shelf strata *(Fig. 4)* contain the direct (i.e., presence or no presence of ice), albeit low, resolution record of glaciation. The corresponding continental rise and abyssal plain strata *(Fig. 4)* contain the distal (i.e., cooler versus warmer) but more continuous and easier to date record of glaciation. Our plan is to conduct coring and wireline logging operations at five sites: one on inner shelf continental shelf deep basins (proposed Site ADEL-1B or alternates), two on the continental shelf (proposed Sites WLSHE-09B and WLSHE-08A or alternates), one on the continental rise (proposed Site WlRIS-04A-or alternate), and one on the abyssal plain (proposed Site WLRIS-02A or alternate) *(Fig. 3)*. Furthermore, Site ADEL-01B and alternate proposed Site ADEL-01C *(Fig. 3)* is designed

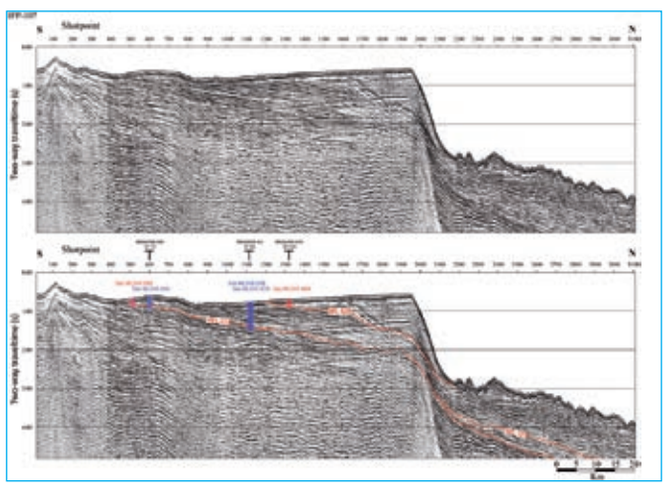


Fig. 4: Uninterpreted and interpreted multichannel seismic reflection Profile IFP-107 across the Wilkes Land shelf and continental slope and base of slope. The profile crosses one of the Wilkes Land shelf banks (where Sites WLSHE-09A,-09B, -07A and -07B are located) and an erosional shelf trough (where sites WLSHE-08A and -08B are located). The two main regional erosional unconformities in this margin are shown in the interpreted profile. Unconformity WL-U3 is interpreted to separate preglacial strata below from glacial strata above. Unconformity WL-U8 is interpreted to mark a change in the glacier regime possibly coinciding with the transition from wet-based to a cold-based more persistent ice sheet. Also shown are the locations of proposed priority sites (red) and alternate sites (blue). See Fig. 3 for location of profile.

to sample the 200–230 m of unprecedented expanded Holocene sedimentary drape (the drift unit) overlying a hard reflector that is interpreted as a glacial diamict.

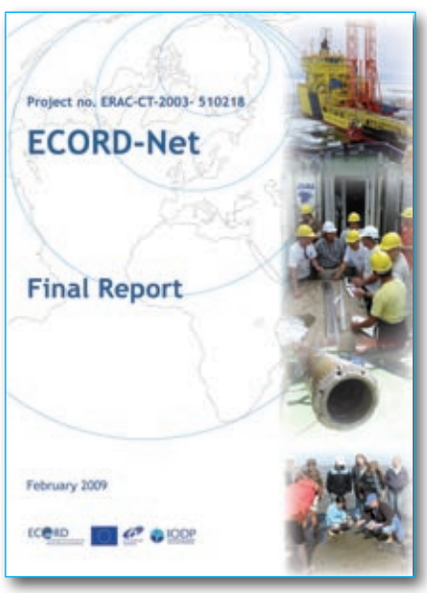
It won't be an easy ride. The planned drill sites are situated in an area of pronounced latitudinal gradients in wind because of the effects of the off-the-continent katabatic winds as well as the location of the frontal zone between polar easterlies and westerlies. Average January–March wind speeds can be from 6.4 to 7.7 m/s, but may reach up to 23 m/s at the shelf sites. The sea ice conditions, based on analysis on satellites, ships, continental stations, and synoptic modeling, may vary strongly from year to year. Whereas the sites farthest offshore may be ice free in the Austral summer, the shelf sites may not. But nothing we can't handle – cross your fingers!

1: *Instituto Andaluz de Ciencias de la Tierra, CSIC-Univ. de Granada, Spain,* ***2:*** *Institute of Environmental Biology, Palaeoecology, Laboratory of Palaeobotany and Palynology, Utrecht University, The Netherlands,*3: *United States Implementing Organization, Integrated Ocean Drilling Program, Texas A&M University, USA.*

ERA-NET

The EC-funded ECORD-Net has ended
December 2003 - August 2008

The ECORD-Net project (no. ERAC-CT-2003-510218) was funded under the European Commission's 6th Framework Programme with the main objectives of developing the structure and mechanisms for coordinating and funding ocean drilling research in Europe, and joining the international Integrated Ocean Drilling Program (IODP) as a single European member. The ECORD-Net project initially included seven workpackages and nine partners, and was funded for 48 months (December 2003 to November 2007) at the level of €2,238,087. Subsequently, the project was expanded to include an additional workpackage and two partners, for which an extra €400,000 was allocated to the budget. The projet duration was also extended to 57 months (August 2008). ECORD-Net was coordinated by INSU-CNRS (France).



At the end of ECORD-Net, the objectives of the project have been fully met. The European Consortium for Ocean Research Drilling (ECORD) is up and running and has proved its effectiveness in building the European research area in ocean drilling. It can be considered as a very successful example of integration at the European level to increase the visibility and strength of Europe in an international programme. The influence of ECORD and its intellectual contribution are well acknowledged within IODP by the Lead Agencies from the USA and Japan.

Seventeen countries (Austria, Belgium, Canada, Denmark, Finland, France, Germany, Iceland, Ireland, Italy, the Netherlands, Norway, Portugal, Spain, Sweden, Switzerland and the United Kingdom) have joined ECORD by signing a Memorandum of Understanding (MoU) and ECORD has joined IODP as a single European member. By negotiating with one voice, ECORD was able to obtain a good deal and the preferential status of 'contributing member' within IODP. Through the ECORD Managing Agency (EMA), ECORD is now able to pool annually about €16.5 million to participate in a €160 million international program. This has allowed ECORD to establish itself as one of the three IODP platform operators, together with the USA and Japan.

The ECORD Science Support and Advisory Committee (ESSAC) has been very active in leading and organising scientific ocean drilling in Europe. 40% of the drilling proposals to IODP have been submitted by ECORD scientists; they represent about one third of the IODP expedition participants (128 so far) and a significant number have been appointed as co-chief scientists. ESSAC has developed support activities that aim to train young scientists, reach out to new communities, and convey the exciting achievements of IODP to schools.

The ECORD Science Operator (ESO) has set up a model to implement mission-specific platform expeditions (MSPs) in areas inaccessible to the other IODP platforms (the drillships *JOIDES Resolution* and *Chikyu*), opening new fields of research in shallow waters and ice-covered areas. Two very successful MSP expeditions have been implemented.

- The Arctic Coring Expedition (ACEX) retrieved the first drill cores to be taken from beneath the Arctic seabed, providing a unique archive of the climatic evolution at the polar region of the Arctic during the last 56 million years.
- The Tahiti Sea-Level Expedition obtained the best ever core recovery from drowned fossil corals off Tahiti, allowing scientists to reconstruct sea-level variations and environmental changes during the last deglaciation.

Two more expeditions will be implemented by ESO during 2009 *(see pages 3 to 5)*.

A particularly important achievement of ECORD-Net has been the development of the Deep-Sea Frontier initiative, which aims to improve the future integration of ocean drilling with other approaches that will lead to a better understanding of the processes occurring at the deep seafloor. This initiative will hopefully be integrated in the strategy for marine and maritime sciences that should develop in Europe, as recommended in the 'Aberdeen Declaration' approved by ECORD in 2007.

Within the European funding agencies, the ECORD partners have already started thinking about the future of ocean drilling post 2013. The ECORD Council has tasked a 'vision group' to investigate the best approach to secure ocean drilling in Europe and its integration with other activities in the deep sea, for the sustainable use of the oceans within a concerted European Marine and Maritime Policy.

Coordinator: Catherine Mével - mevel@ipgp.jussieu.fr
http://www.ecord.org/enet/ecord-net

ECORD Contacts

ECORD Council (as of April 1, 2009)	ESSAC-ECORD Science Support and Advisory Committee
Chair: Fernando Barriga - f.barriga@fc.ul.pt **Vice-Chair:** Chris Franklin - cfr@nerc.ac.uk	**Chair:** Gilbert Camoin - gcamoin@cerege.fr **Vice-Chair:** Rüdiger Stein - ruediger.stein@awi.de **ESSAC Office:** essac@cerege.fr
EMA - ECORD Managing Agency	**ESO - ECORD Science Operator**
Director: Catherine Mével - mevel@ipgp.jussieu.fr **EMA Office:** ema@ipgp.jussieu.fr	**Science Manager:** Dan Evans - devans@bgs.ac.uk **Operations Manager:** Dave Smith - djsm@bgs.ac.uk