

IODP-Canada to Exhibit at GAC-MAC 2011

25–27 May 2011, Ottawa, Canada



IODP - Canada will have an exhibition booth at the upcoming joint annual meeting of the Geological Association of Canada, the Mineralogical Association of Canada, the Society of Economic Geologists and the Society for Geology Applied to Mineral Deposits (GAC – MAC – SEG – SGA) to be held at the University of Ottawa from 25–27 May 2011. Over a thousand Earth sciences specialists from Canada, the US and Europe will be present. Ottawa 2011's motto - *Navigating Past & Future Change* - highlights this meeting's commitment to exploring both the scientific and the societal aspects of Earth sciences.

For more details on IODP-Canada's activities please go to www.iodpcanada.ca or contact the IODP-Canada Coordinator, Diane Hanano at coordinator@mail.iodpcanada.ca.

The 5th ECORD Summer School 2011

12–13 September 2011, Bremen, Germany



The 5th
ECORD
Summer

School in Bremen, to be held from 12–13 September 2011 at the MARUM - Center for Marine Environmental Sciences at the University of Bremen, Germany, aims to bring PhD students and young Postdocs in touch with



IODP at an early stage of their career, inform them about the actual research within this international scientific program, and to prepare them for future participation in IODP expeditions. Such training will be achieved by taking the summer school participants on a "virtual ship" utilizing the unique facilities linked to the IODP Bremen Core Repository where they get familiarized with a wide spectrum of state-of-the-art analytical technologies and core description methods including core logging/scanning according to the high standards on IODP expeditions. In addition, the topic "Subseafloor Fluid Flow and Gas Hydrates" will be covered by lectures and discussions with leading researchers in the field. A one-day field trip on a research vessel will round out the program.

This comprehensive approach – combining scientific lectures with practicums on IODP-style "shipboard" measurements – is the blueprint for the Bremen ECORD summer school covering the three major topics of the IODP Initial Science Plan. The Summer School will be organised by Dierk Hebbeln, Director of the Bremen International Graduate School for Marine Sciences GLOMAR, Gerhard Bohrmann, head of Department of Marine Geology, Heiner Villinger, Head of Department of Marine Sensors, and Ursula Röhl, IODP Curator at the Bremen Core Repository, all at the University of Bremen, Germany. For detailed information visit www.gloamar.uni-bremen.de/ECORD_Summer_School.html.

ECORD Invites You to Host a Lecture



Since
2007, the
European

Consortium for Ocean Research Drilling has sponsored the ECORD Distinguished Lecturer Programme, an initiative for a lecture series to be given by leading scientists involved in the Integrated Ocean Drilling Program. The program is designed to bring the exciting scientific discover-

ies of the IODP to the geosciences community in ECORD and non-ECORD countries.

2010–2012 Lecturers:

Kai-Uwe Hinrichs, MARUM, University of Bremen, Germany

Title: "Benthic archaea – the unseen majority with importance to the global carbon cycle revealed by IODP drilling."

Dominique Weis, Pacific Center for Isotopic and Geochemical Research, University of British Columbia, Canada

Title: "What do we know about mantle plumes and what more can we learn by IODP drilling?"

Helmut Weissert, ETH Zürich, Switzerland

Title: "Carbon cycle, oceans and climate in the Cretaceous: lessons from ocean drilling (DSDP to IODP) and from records on continents."

Applications to host a Distinguished Lecturer are accepted from any college, university or non-profit organization in all European countries and Canada. Applications from non-traditional IODP and ECORD audiences within the European Community are especially welcome. Apply via e-mail to essac.office@awi.de. Further information at <http://www.essac.ecord.org/index.php?mod=education&page=dlp>

The ESF Magellan Workshop Series Program



The ESF
Magellan
Workshop



series Program,
launched in
2006 with the
aim of nurtur-

ing and coordinating innovative marine scientific drilling proposals for European scientists, is in its last phase of operation. The program will run until 31 July 2011. A decision was made in Burkheim, Germany in August 2010 to propose a successor program, The Magellan Plus Programme. Currently

a committee lead by Lucas Lourens, The Netherlands, Marit-Solveig Seidenkrantz, Denmark and Ales Spicak, Czech Republic, and representatives from 7 other European countries are developing a program proposal which, if funded, will support both marine and continental scientific drilling and coring.

To date the ESF Magellan Workshop Series Program has provided opportunities for senior level researchers, young scientists as well as students to contribute to ocean drilling research goals in Europe. More than 18 workshops, 15 short visit grants and one educational activity have been supported. The most recent supported workshop, The GOLD Project, drilling in the Western Mediterranean Sea, convened by M. Godard, was held in the Sultanate of Oman in January 2011. Three workshops were held in 2010: Volcanic Basins: Scientific, economic and environmental aspects in Vienna (AU) by N. Arndt; RAMBO (Real-time Amphibic Monitoring & Borehole Observations) held in Bremen (GE) by A. Kopf; and The GOLD project, drilling in the Western Mediterranean Sea held in Banyuls (FR) by M. Rabineau.

The final Magellan workshop, Arctic Ocean drilling and the site survey challenge will be held in early November 2011 in Copenhagen (DK) and is being organized by N. Mikkelsen, Denmark.

Although no more workshops will be supported there is currently a call open for short visit travel grants to support both young scientists and keynote speakers to attend meetings. This call will remain open until the end of the program. All scientists and students who are interested are encouraged to submit a proposal for a short visit grant. Priority will be given to proponents from ESF Magellan member countries and/ or workshops to be held in member countries. ESF Magellan member countries are: Austria, Belgium, Denmark, Finland, France, Germany, Ireland, The Netherlands, Norway, Portugal, Sweden, and Switzerland.

For more information and to apply to the ESF Magellan Workshop

Program, please see www.esf.org/magellan, or contact the ESF program administrator at edegott@esf.org, or the Chair of the program Jochen Erbacher Jochen.Erbacher@bgr.de.

IODP Meeting at AOGS in India



India is an associate member of IODP and has been regularly participating in various IODP expeditions around the world aimed at addressing geo-scientific issues. In order to showcase various IODP-related activities in India a parallel poster session was organized in conjunction with the IODP-MI at Asia Oceania Geosciences Conference in Hyderabad, India 5–9 July 2010. The objective of this stall was to promote overall awareness about the benefits of deep sea scientific drilling and its role in researching various scientific questions.

A dedicated session was also organized to discuss thrust areas of research in the Indian Ocean that could be potentially addressed through ocean drilling. The meeting was chaired by the Secretary, Ministry of Earth Sciences, Government of India and attended by delegates from numerous institutes/organizations across the country such as Physical Research Laboratory, National Institute of Oceanography, National Geophysical Research Institute, and National Centre for Antarctic and Ocean Research. The meeting was open to all the participants of the AOGS meeting to receive feedback for developing a comprehensive drilling proposal for the northern Indian Ocean. The meeting was highly significant in terms of collecting valuable suggestions related to the IODP and scientific ocean drilling interests in India.



Report of the 4th IODP/ ECORD Summer School 2010



The
ECORD
Summer
School
2010 on

“Dynamics of Past Climate Changes” was held at the MARUM – Center for Marine Environmental Sciences, Bremen University, Germany, from 13-24 September 2010. It was organized by Prof. Dierk Hebbeln, Director of the Bremen International Graduate School for Marine Sciences “Global Change in the Marine Realm” (GLOMAR), by Prof. Dr. Michael Schulz, head of the Geosystem Modelling Group at the University of Bremen, and by Dr. Ursula Röhl, IODP Curator at the Bremen Core Repository (BCR). 28 PhD Students and postdoctoral fellows from several European countries and Canada participated in the two-week course which combined lectures, interactive discussions, practical exercises on a “virtual ship”, i.e. in the lab and in the facilities of the IODP core repository, and a field trip to the Late Quaternary Landscapes in the vicinity of Bremen. One of the participants reports – “This summer school was a great experience. Not only did it significantly improve my skills and knowledge but it also gave me the opportunity to meet, exchange and discuss with other motivated young scientists in my field.”

Successful Port Call of JR at Victoria, B.C. Canada



Taking
advantage of
the JOIDES

Resolution port call in the Victoria harbour between the Juan de Fuca Hydrogeology Expedition 327 and the Cascadia CORK Expedition 328 on September 5–9, 2010, lectures and guided tours on the ship were organized for the public by Ocean Leadership in collaboration with IODP-Canada and Ocean Networks Canada.

Kiyoshi Suyehiro, President of IODP-MI, Catherine Mével, Chair of the ECORD Managing Agency and Anne de Vernal, Chair of IODP-Canada, participated in the event, which was covered by the local press.

During the port call, about 150 people had the opportunity to get acquainted with IODP by visiting the *JOIDES Resolution* and more than 70 people attended the public lectures.

The lecture by Earl Davis focused on deep-ocean boreholes for long-term observation of crustal temperature and pressure along active seismogenic margins. The other lecture by Michael Riedel addressed the question of gas hydrates in marine sediments as a potential energy resource and cause of geohazards.



Workshop about MELAGUS at Burgos, Spain

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Intramontane basins have the potential for providing unique, continuous sedimentary records of paleoclimate and paleoenvironmental changes. The Guadix-Baza Basin in southern Spain – the largest, southernmost paleolake in Europe – is a particularly important example of such valuable sedimentary archives. Its rich and extensive depositional sequence are key to understanding the Neogene Mediterranean-Atlantic seaway and provides an unprecedented paleoclimatic, paleogeographic, and fossiliferous record of the region throughout the Neogene and Pleistocene. A program of drilling, which is about the Mediterranean-Atlantic Seaway and Lacustrine strata Guadix-Baza Basin, Spain (MELAGUS), is seen as the key for obtaining continuous sedimentary

records from this intramontane basin, since its deposits are otherwise inaccessible or only partially exposed along degraded outcrops. On 21 October 2010, a group of 25 scientists met at the Centro Nacional de Investigación sobre la Evolución Humana (CENIEH), Burgos, Spain, to discuss an initial blueprint for drilling and obtaining sediment cores from the Guadix-Baza Basin. The attendees included researchers from Spain, the United Kingdom and Italy, who specialise in a wide variety of disciplines, including geophysics, paleontology, sedimentology, geochemistry, geochronology, paleopedology, mineralogy, and palynology. At present, there are no precedents of lacustrine drilling programs in any of the major mid-latitude paleolakes of Europe. The proposed drilling project would furnish an unparalleled southernmost reference framework for understanding past environmental changes during the Pliocene and Pleistocene, and their implications for human evolution. Contacts: Josep M. Parés (Josep.pares@cenieh.es) and César Viseras (viseras@ugr.es).

Sub-Seafloor Microbes and Wandering Hotspots Meet in Auckland, New Zealand



Australian and New Zealand
IODP Consortium

Or rather, two deep-sea drilling expeditions with *JOIDES Resolution* (*JR*) “crossed over” in Auckland last mid December...

The scientific ocean drilling ship *JR* is currently in the southwest Pacific, undertaking two expeditions northeast of New Zealand: one to learn more about the limits to life deep beneath the seafloor (Expedition 329), and the other to test if and how much the Louisville hotspot has moved over the past 80 million years (Expedition 330).

In the intervening time, as *JR* was moored in Auckland, several activities had been organized by the New Zealand IODP Office (GNS Science), the Auckland Museum Institute, the University of Auckland, with the sup-

port of the Integrated Ocean Drilling Program and the Consortium for Ocean Leadership.

These included eight ship tours, a lunch reception, talks by expedition co-chief scientists Steven d’Hondt (329: University of Rhode Island) and Anthony Koppers (330: Oregon State University), and evening public lectures. Thus many Aucklanders learnt about IODP and the importance and relevance of its programs.

Port call activities and the two cross-over expeditions generated interest in the local media, including TV3NZ, RadioNZ, the New Zealand Press Agency, Australia ABC Science and the Australian Science Media Centre.

The *JR* is due back in Auckland on February 12, and visitors to the Auckland Museum.

DFDP, Alpine Fault, New Zealand

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The Deep
Fault Drilling
Project (DFDP)

completed its first two boreholes through the Alpine Fault in early February. DFDP-1A penetrated fault gouge at 91 m and reached a total depth of 101 m in gravel. DFDP-1B penetrated fault gouge at 128 m, reached a total depth of 152 m, and collected the first continuous record of cataclasites on both sides of the fault. Initial results include the discovery of a large fluid pressure difference across the fault. Fluid pressures are hydrostatic above the fault, with a water level



at 7 m below ground surface. In contrast, the water level in the sampling tube from beneath the fault is 40 m below ground surface. This pressure difference decreased borehole stability in the highly fractured fault rocks, but the fault has now been resealed in both boreholes with a bentonite-cement grout. All aspects of the project were successful. High-quality cores and a comprehensive suite of wireline logs were collected from both boreholes. DFDP-1A has a seismometer installed at a depth of 83 m, just

below steel casing. DFDP-1B has a seismometer, 4 piezometers, and 24 temperature sensors installed within it, and a 25 mm fluid sampling tube to a depth of 133 m. An additional seismometer and piezometer will be installed later. Additional information can be found at wiki.gns.cri.nz/DFDP. DFDP-1 drilling was managed by Dr. Rupert Sutherland, GNS Science, Lower Hutt, NZ (r.sutherland@gns.cri.nz). It was funded by New Zealand (Marsden Fund; GNS Science; and Victoria, Otago, Auckland, and

Canterbury Universities), the United Kingdom (NERC, University of Liverpool), and Germany (DFG, University of Bremen). Reference: Townend, J., Sutherland, R., and Toy, V., 2009. Deep Fault Drilling Project—Alpine Fault, New Zealand, doi: 10.2204/iodp.sd.8.12.2009.

ICDP welcomes two new members in early 2011, the Netherlands and India joined ICDP recently.

Time and Time Again

One of the magnificent legacies of ocean drilling is the recovery of abundant marine microfossils. These microfossils provide an excellent evolutionary record that can be readily utilized in biostratigraphy. From the earliest days of the Deep Sea Drilling Project it became clear that marine microfossils in deep ocean basins were the same morpho-species as those recognized in marine sediments studied from outcrop, allowing global recognition of biostratigraphic schemes. But the application of applying an age to evolutionary or extinction events of marine microfossils relies upon sediments with continuous sedimentation and a clearly defined magnetostratigraphy or cyclostratigraphy – ocean cores do just that. In a recent paper published in *Earth Science Reviews*, Wade and others bring together 187 tropical and subtropical planktonic foraminiferal biostratigraphic events for the Cenozoic. Such a compilation has not been attempted since 1995, however, the JOIDES Resolution began renewed ocean drilling operations in 2009, following a major refit, which acted as a catalyst to reassess the existing bioevents. Major advances by ODP and IODP in improved drilling recovery, multiple coring and high resolution sampling, has allowed many biostratigraphic events to be refined. For example, detailed biostratigraphic investigations from Ocean Drilling Program Leg 154 (Ceara Rise; Chaisson and Pearson, 1997; Pearson and Chaisson, 1997; Turco et al., 2002), Leg 199 (Equatorial Pacific; Wade et al., 2007), and outcrop sections (e.g., Payros et al., 2007, 2009) have resulted in revision of the calibrations of numerous bioevents. The compilation by Wade and others includes a series of convenient 'look-up' tables against multiple geomagnetic time scales. The revised and recalibrated datums provide a major advance in biochronologic resolution and a template for future progress to the Cenozoic time scale. This is one step towards the development of an integrated bio-magneto-astro-chronology for the Cenozoic. The new cores drilled during IODP on cruises such as Expedition 320/321 in the equatorial Pacific Ocean (Pälike et al., 2010) will allow further refinements.

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