

CONTINENTAL DRILLING

CONTINENTAL DRILLING FOR PALEOCLIMATE RECORDS

Activities of PAGES Lake Drilling Task Force

Origin of the Lake Drilling Task Force

Because successful acquisition of long continental paleoclimate records requires major investments in planning, logistics, and drilling technology, it is important to select the most promising sites, to conduct pre-drilling site evaluations, and to select the most suitable drilling technology. To facilitate a coordinated selection process, participants at the PAGES Workshop on Continental Drilling for Paleoclimate Records (*see PAGES Workshop Report Series 96-4, WWW address below*) agreed to form a Task Force to organize a coordinated Global Change initiative for national and international funding agencies. A particular target for engagement was the then-emerging International Continental Scientific Drilling Program (ICDP). The goal of the Lake Drilling Task Force is to provide some coordination for the notoriously fragmented continental paleoclimate community, and to facilitate large-scale international efforts to retrieve long (ca. 250 kyr) lacustrine records analogous to those generated by the marine and ice-core communities. The Task Force promotes the development of a regional network of long, continental paleoclimate records, closely associated with the Time Stream II activities and priorities of the PEP transects. With respect to ICDP, we hope to form partnerships between ICDP, which would support drilling operations and technology, and national or international science funding agencies, which would provide support for scientists and analytical work.

Individuals serving on the Task Force are the leaders of PEP I (V. Markgraf), PEP II (J. Dodson and Liu Tungsheng), and PEP III (F. Gasse), along with several people associated with large lake coring or drilling projects and related activities (D. Williams, T. Johnson, J. Negendank, S. Leroy, and S. Colman). Doug Williams served as head of the Task Force through November, 1996; Steve Colman now serves in this capacity.

ICDP

The International Continental Scientific Drilling Program (ICDP) grew out of the need for a continental version of the Ocean Drilling Program. Its origins lie largely in the deep crustal drilling community, especially the U.S. Continental Scientific Drilling Program and the German KTB Drilling Program. ICDP was formally launched by a memorandum of understanding between the U.S. and Germany in 1996. It operates on funds contributed by membership fees, on a sliding

scale, decreasing from the current fee of 700,000 US\$ for G7 countries. Initial members were the U.S., Germany, and China. Countries likely in the near future include Japan, Mexico, Russia, a consortium of small European countries, and UNESCO (for developing countries). The organization is run by an Executive Committee consisting of one representative from each member country. Proposals are reviewed by a Science Advisory Group, which makes funding recommendations to the Executive Committee.

History

Under the leadership of Doug Williams, the Task Force solicited from the continental paleoclimate community two-page proposals for lakes that should be considered and prioritized for drilling support by ICDP. The proposals included a brief description of the lake(s) of choice; the rationale for selection in terms of scientific questions to be addressed, prospects for success, and logistical challenges anticipated; a list of participating scientists, and an estimated budget. More than 60 of these mini-proposals were submitted to the Task Force and were reviewed at a meeting of the Task Force in October, 1995.

The Task Force evaluated the proposals primarily on the basis of the likely quality of the paleoclimate records to be obtained, the scientific importance of records from particular sites, and the relation of particular sites to the goals of the PEP transects. To some degree, the readiness of proposed projects affected the order of priority among the highest rated proposals. More complete proposals were requested for lake sites evaluated as having the highest priority by the Task Force. These materials were compiled into a five-year drilling plan, which was presented to ICDP at the VIII International Continental Drilling Symposium in February, 1996, in Tsukuba, Japan. The plan was also circulated to the international community for additional input. In response to ICDP's initial call for pre-proposals, the plan was submitted to ICDP in April, 1996, as a "Prospectus for a Global Lake Drilling Initiative." At the same time, individual proposals were submitted by the leaders of six lake drilling projects, five of which were among those evaluated by the Task Force and included in the Prospectus.

The Task Force Prospectus proved difficult for ICDP to handle, so ICDP did not consider the Prospectus nor the included projects in its review of original pre-proposals. In order to resolve this problem and other concerns related to PAGES projects, including length of

record and the inclusion of tectonic studies, ICDP funded a workshop, which was held at Lamont-Doherty Earth Observatory in December, 1996, attended by all of the PAGES Task Force members. Information concerning this Workshop, including a draft report, is available on the World Wide Web (address below). The meeting resulted in a clearer understanding of the priorities of ICDP and a greater appreciation for the importance of lacustrine paleoclimate records.

One of recommendations of the Lamont workshop was that a PAGES representative be appointed to the Science Advisory Group of ICDP, the group that reviews proposals. Steve Colman was asked to fill this role and joined the SAG for its yearly review of proposals (submission deadline 15 January). Remarkably, eight proposals related to paleoclimate records from lakes were submitted to ICDP, representing almost half of all drilling proposals. Out of the proposal process, the Baikal Drilling Project received substantial funding for core-logging equipment, the Lake Titicaca and IDEAL projects received limited funding for workshops and (or) engineering studies, and a planning workshop was recommended for the Qinghai Lake (China) project. Some problems, such as participation in ICDP by small developed countries (e.g. New Zealand) remain, but are being addressed.

Recent developments

In response to the many high-quality lake-drilling proposals, particularly the favorable reviews of the East African lakes (IDEAL) and Lake Titicaca proposals, ICDP is proceeding with development of technical and engineering capabilities for drilling medium to large lakes. They supported a small workshop in Miami in October, 1997, organized by Chris Scholz, which included engineers from ODP and industry (WWW information below). This face-to-face discussion between scientists and engineers was extremely productive and resulted in a recommendation for a formal feasibility study of the costs and performance of different systems for drilling the lakes in question. ICDP agreed to fund the study, and the request for proposals has been issued. The award is expected to be made in December, 1997 and the results are expected in March, 1998. We are now confident that one of these lakes, probably Lake Edward, will be drilled in the near future, possibly as early as 1999.

The next round of proposals for ICDP is due January 15, 1998. In the meantime, the Lakes Drilling Task Force will continue to seek ways to promote the drilling of lakes for paleoclimate records in general, as well as providing an interface to ICDP.

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The Center for Field Research invites proposals for 1998-1999

The Center for Field Research invites proposals for 1998-99 field grants funded by its affiliate Earthwatch.

Earthwatch is an international, non-profit organization dedicated to sponsoring field research and promoting public education in the sciences and humanities. Past projects have been successfully fielded in, but are not limited to the following disciplines: aquaculture, limnology, marine resource conservation, oceanography (chemical, biological and physical)

and marine geology. Interdisciplinary projects are especially encouraged as is multi-national collaboration.

Information can be found at:

THE CENTER FOR FIELD RESEARCH,
680 Mt. Auburn St., Watertown, MA 02272, USA;
Tel: (617) 926-8200; Fax: (617) 926-8532;
e-mail: cfr@earthwatch.org
<http://www.earthwatch.org/cfr/cfr.html>

PAGES CALENDAR

(*: Open meetings. All interested scientists are invited to attend)

■ ***February 9-2, 1998, Boulder, CO, USA "Second Workshop on Global Paleoenvironmental Data"**

Contact: Robin Webb or Dave Anderson. Tel: +1 303 497 6160; Fax: +1 303 497 6513; e-mail: danderson@ngdc.noaa.gov, rwebb@ngdc.noaa.gov

■ ***February 16-20, 1998, Chiang Mai, Thailand "Southeast Asian Dendrochronology Workshop"** (SEA Dendro' 98)

Contact: Rosanne D'Arrigo, Tree-ring lab., Lamont-Doherty Earth Observatory, Palisades, USA. Tel: + 914 365 8617; Fax: + 914 365 8152;
<http://www.ldeo.columbia.edu/trl/sea1.html#SEA.Dendro98>

■ ***March 14-18, 1998, Barcelona, Spain "GCTE-LUCC Science Conference (Global Change in Terrestrial Ecosystems-Land Use/Cover Change)"**

Contact: Will Steffen, GCTE Core Project Office, CSIRO Division of Wildlife & Ecology, PO Box 84, Lynnham, ACT 2602, Australia. Fax: +61 1 241 2362, e-mail: wls@cbr.dwe.csiro.au; <http://jasper.stanford.edu/CGTE/LUCC/conference98.html>

■ ***March 16-20, 1998, Merida, Venezuela "PEP 1 Meeting"**

Contact: Dr. Vera Markgraf, INSTAAR, University of Colorado, Boulder CO 80309 0450, USA. e-mail markgraf@spot.colorado.edu;
<http://instaar.colorado.edu/misc/pep.html>

■ ***April 19-23, 1998, London, UK "First PAGES Open Science Meeting"**, ***New Location***

Senate House, University of London, UK
Contact: Frank Oldfield, PAGES IPO, Switzerland. Tel: +41 31 312 3133;
Fax: +41 31 312 3168; e-mail: pages@pages.unibe.ch;
<http://www.pages.unibe.ch/osm/newosm.html>

■ ***May 18-21, 1998, Yarmouk University, Irbid, Jordan "Learning from the Past: Global Paleoclimatic Changes"**

Contact: Prof. Ali Jawad Ali, Faculty of Science, Yarmouk University, IRBID, Jordan. Tel: +962 2 271100; Fax: +962 2 247983/274725;
e-mail: ajawad@yucc.yu.edu.jo

■ ***May 16-23, 1998, Torshavn, Faroe Islands "Environmental Change in Atlantic Islands"**

Contact: C. Caseldine, University of Exeter, UK. Tel: +44 1392 263 347;
Fax: +44 1392 263 342; e-mail: c.j.caseldine@exeter.ac.uk

■ ***June 14-18, 1998, Snowbird, Utah, USA "Chapman Conference on Mechanisms of Millennial-Scale Global Climate Change"**

Contact: AGU Meetings Department, Millennial-Scale Global Climate Conference, 2000 Florida Av, N.W., Washington, D.C. 20009, USA. Tel: +1 202 462 6900; Fax: +1 202 328 0566; e-mail: meetinginfo@kosmos.agu.org

■ *** July 2-7, 1998, Perth, Australia - PEP-II Workshop in "Variability of Southern Hemisphere Climate Systems and Linkages with Northern Hemisphere Systems, on Time Scales covering the last two Glacial Cycles"** - University of Notre Dame, Fremantle

Contact: John Dodson. e-mail: johnd@sunny.gis.uwa.edu.au

■ ***July 6-10, 1998, Exeter, UK "Hydrology in a Changing Environment"**

Contact: Dr Bruce Webb, Department of Geography, University of Exeter, Armory Building, Rennes Drive, Exeter, Devon, EX4 4RJ, UK. Fax: +44 1392 263342; e-mail: b.w.webb@exeter.ac.uk;

<http://wlfiles2.nwl.ac.uk/ih/prototype/new/bhs.html>

■ ***July 27-August 7, 1998, Lanzhou, P.R. China, International Symposium and Field Workshop on "Paleosols and Climatic Change"**

Contact: Pr Fang Xiaomin, Lanzhou University, Lanzhou, Gansu Province 730000, P.R. China. e-mail: fangxm@lzu.edu.cn

■ ***August 23-28, 1998, Lisbon, Portugal "International Conference on Paleoceanography - ICP VI"**

Contact: F. Abrantes. e-mail: icp6fatima@mail.telepac.pt

■ ***September 5-7, 1998, Puerto Vallarta, Mexico - 15th AMQUA Biennial Meeting on "Northern Hemispheric-Southern Hemispheric Interconnections"**

Contact: Dra. Socorro Lozano Garcia. e-mail: amquamex@servidor.unam.mx; Fax: +52 5 550 6644; <http://www.usu.edu/~amqua/v27n1/meeting.html>

■ ***September 7-11, 1998, University of East Anglia, Norwich, UK "Climate and History: Past and Present Variability - A Context for the Future"**

Contact: Susan Boland, Climatic Research Unit, University of East Anglia, Norwich, NR4 7TJ. Tel: +44 1603 456161; Fax: +44 1603 507784; e-mail: s.boland@uea.ac.uk; <http://www.cru.uea.ac.uk/cru/conf/>

■ ***August 3-11, 1999, Durban, South Africa "The Environmental Background to Hominid Evolution in Africa"**, INQUA XV International Congress, International Congress Centre Durban

Contact: Dr D.M. Avery, Secretariat General, South African Museum, P.O. Box 61, Cape Town 8000, South Africa. Tel: +27 21 243330; Fax: +27 21 24671; e-mail: mavery@samuseum.ac.za; <http://INQUA.geoscience.org.za/>

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Additional information (WWW)

• ICDP and proposals:

<http://www.gfz-potsdam.de/icdp>

• Lamont ICDP Workshop:

<http://www.ldeo.columbia.edu/~polsen/nbcp/lake.html> (including draft report)

• Miami ICDP Workshop:

<http://www.gfz-potsdam.de/icdp/miami>

• PAGES Task Force:

<http://woodshole.er.usgs.gov/~scolman/pages/ldtf.html> (includes links to other related items)

• PAGES Workshop Report 96-4:

<http://www.pages.unibe.ch/Publications/Workshops/Contidril/0toc.html> ■

INSIDE PAGES

Changes at the PAGES IPO

1997 has been a year of considerable change at the PAGES IPO. Ulrich Schotterer has concluded his role as PAGES scientific assistant. As well as continuing to work towards the enhancement of the Global Network for Isotopes in Precipitation, he will also concentrate his efforts on a new, independent, scientific initiative on Isotopes in the Hydrological Cycle (ISOHYC).

In his place, PAGES welcomes Keith Alverson, a physical oceanographer with interests in oceanic convection, air-sea interaction, and the application of inverse modelling techniques to paleoclimate model-data comparison problems.

Finally, PAGES has benefited enormously from the hiring of Niklaus Schranz as office manager. Niklaus has a background in geography and brings strong electronic communications skills to the office. ■