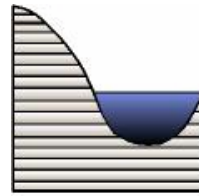


**Limnogeology Division Newsletter Volume 4.  
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**Limnogeology  
Division** THE GEOLOGICAL SOCIETY  
OF AMERICA

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**New! Officers and Management Board: Limnogeology Division — 2006**

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**Welcome:** Welcome to the first issue of the fourth volume of the Limnogeology Division of the Geological Society of America (GSA). This issue is our first fall issue and it comes just before the annual GSA conference.



*Laguna Verde in Chile (see ILIC announcement below). Does every country have a Green Lake?*

Many changes are in store for next year for the Division. A new crop of officers will be in place after GSA (see above), so come to the Limnogeology Division business meeting at the GSA annual meeting in Philadelphia to welcome the new officers. The winner of the Kerry Kelts Graduate Scholarship, Caleb Schiff from Northern Arizona University, has just been determined and is presented below in this newsletter. Limnogeology has a large role at the Philadelphia meeting with many sessions, workshops and field trips planned. If you haven't signed up already please do so quickly. In

addition, we have a field trip report for Limnogeology field trips from the 2005 GSA Salt Lake City meeting from Kathleen Nichols. The Division will have a business meeting on Monday October 23<sup>rd</sup> from 5 to 7 PM in Room 203A at the Philadelphia Convention Center. All members and people considering becoming members are welcome. Some food and drinks will be available.

In addition to GSA, the fourth international Limnogeology Conference will be held in Barcelona, Spain in July 2007. An announcement is provided at the end of this newsletter. The Limnogeology Division will be well represented at the meeting and we look forward to an outstanding conference. We also have a special feature article from An Zisheng, Ai Li, Song Yougui, and Steven Colman on drilling in Lake Qinghai, China. Finally, I will be passing on the editorial reigns to Peter A. Drzewiecki after this issue so that I can concentrate on my other Limnogeology Division activities. Please welcome Pete to the newsletter world and please provide him with ample material for coming newsletters. I have enjoyed being the first editor of the newsletter and I am sure many improvements can be made with new leadership. So, I say farewell with this issue and I hope to see you all in Philly!

**Michael Rosen, Carson City**

### ***Message from the Chair* - Tom Johnson, Chair (2004-2006)**

Dear Division Members,

Well time flies by when you are having fun. It seems like only yesterday when I took over the chairmanship of the Limnogeology Division, and my two-year reign is about to end. As I pack my belongings and prepare to move out of the Division Penthouse, er, Headquarters, in Limno Plaza, downtown Manhattan, I am reflecting on our accomplishments over the past two years and the challenges that lie ahead. Our Division has continued to enrich the Annual Meeting of GSA by sponsoring numerous technical sessions, workshops, and field trips in Limnogeology. In the 2006 Meeting in Philadelphia, for example, we are sponsors or co-

sponsors for 5 technical sessions, two field trips and a workshop. I thank all of the members who stepped up to the plate to organize these sessions and field trips in past meetings, and encourage the rest of you to do the same in coming years. What do you think is the hottest topic or biggest challenge facing your current research area? Might significant new advances be facilitated through your organizing a session at a future meeting that brings the right mix of expertise and accomplishment to the forum?

Certainly the most enjoyable task for officers of the Division is to review student applications for the Kerry Kelts Research Awards. The proposals that have come in from graduate students from around the country have been most impressive in terms of diversity of topics related to Limnogeology, and innovation in approach. There is a frustration associated with the task as well, and that is realization that the level of funding that we can provide to the award winners is extremely modest, amounting to but a small percentage of the funds needed to accomplish the proposed research. As you all know, we have a major fund drive underway to enhance the Kerry Kelts Research Endowment. We will present an update of our progress with fund raising for this endowment at the Business and Awards Meeting at the GSA Annual Meeting in Philadelphia later this month (Monday, October 23, 5-7 pm, Rm. 203A). I hope that you will be able to join us. If you have not yet made a donation to the Kelts Fund, I urge you to visit the GSA website now, click on "Donate to GSA," then indicate the amount that you wish to donate and designate it be given to the Kerry Kelts Research Fund. It's all about the students in our profession.

The Chairmanship of the Division passes to Dr. Kevin Bohacs at our business and awards meeting on October 23. As most of you know, Kevin has a distinguished record of accomplishment in the geology of lacustrine basins, particularly with regard to their potential for hydrocarbon production. While he has spent his entire career since graduate school in the oil industry, he has interacted extensively with faculty and students over the years. He has probably seen more outcrops of lacustrine sequences worldwide than anyone else in our Division. Thus he brings a fresh and learned view to our membership; I very much look forward to his leadership role in our Division over the next biennium.

Tom Johnson  
Large Lakes Observatory *and* Department of Geological Sciences  
University of Minnesota Duluth

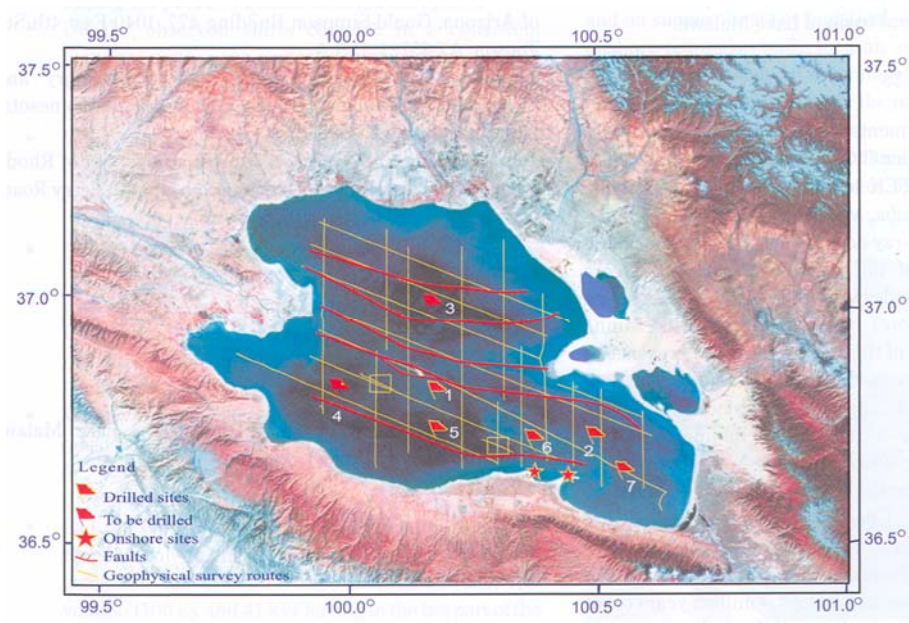
## ***Lake Qinghai Scientific Drilling Project Feature Article***

An Zisheng<sup>1</sup>, Ai Li<sup>1</sup>, Song Yougui<sup>1</sup>, and Steven M. Colman<sup>2</sup>

<sup>1</sup>Institute of Earth Environment, CAS, 10 Fenghui South Road, Xi'an High-Tech Zone, Xi'an, 710075, People's Republic of China

<sup>2</sup>Large Lakes Observatory & Department of Geological Sciences, University of Minnesota-Duluth, RLB, 2205 East 5th Street, Duluth, Minn. 55812, U.S.A. (scolman@d.umn.edu)

Lake Qinghai in the People's Republic of China covers 4400 km<sup>2</sup> on the northeastern margin of the Tibetan Plateau, at an elevation of 3194 m (Fig. 1). The lake is extremely sensitive to



*Figure 1. Satellite photograph of Lake Qinghai with sketch map of drilling sites (see legend for explanation of symbols).*

changes in climate because it lies in a critical transitional zone between the humid climate region controlled by the East Asian monsoon and the dry inland region affected by westerly winds. Three major atmospheric circulation systems affect its climate: (i) the winter monsoon, induced by Siberian high pressure and associated high latitude ice cover, (ii) tropical moisture from

low latitudes, carried by the East Asian summer monsoon, and (iii) climatic changes in the North Atlantic region, the effects of which are inferred to be transmitted via the westerlies. A study of drill cores from the lake and the surrounding area is critical for understanding the climatic, ecological, and tectonic evolution of the area, including the development of the East Asian monsoon system and its relationship to major global atmospheric circulation.

Lake Qinghai occupies a closed tectonic depression, or piggy-back basin, on the upper plate of a major, active thrust fault. The basin is bound to the north by the Qilian Mountains, which constitute the northeastern margin of the Tibetan Plateau. The lake basin thus is intimately related to the active tectonics of the Tibetan Plateau. Seismic-reflection data show that the lake sediments are tectonically deformed in some parts of the basin and largely undeformed in other parts, where they should record at least the timing of regional tectonism. The seismic surveys indicate that the shallow lake is underlain by northern and southern sub-basins and that the southern sub-basin contains a continuous stratigraphic sequence of unconsolidated sediments more than 700 m thick.

The overall scientific objectives of the project include:

- To obtain an improved understanding of the late Cenozoic environmental history of the Lake Qinghai region and the development of the East Asian monsoon climate
- To understand the Late Cenozoic tectonic evolution of the Lake Qinghai basin and the growth of the northeastern margin of the Tibetan Plateau and its effects on regional climate
- To correlate Lake Qinghai environmental records with other regional and global paleoclimatic records to obtain a better understanding of the connection between regional climatic change, the development of the East Asian monsoon system, prevailing westerlies, and, ultimately, the evolution of global climate



After several weeks of delay caused by poor weather and a regional outbreak of bird flu, drilling operations began in late July 2005 and continued to early September. The drilling was conducted from a barge with the Global Lake Drilling 800 m (GLAD800) coring system (Fig. 2), the modular ICDP drilling platform and drilling system operated by Drilling, Observation and Sampling of the Earth's Continental Crust (DOSECC, Inc.). DOSECC's coring operations were supported by the Qinghai Geology Survey and scientists from the Xi'an Institute of Earth Environment of the Chinese Academy of Sciences (IEECAS). The sediment cores were described initially onboard by observing through the plastic core liners and examining core-catcher samples. The maximum 1.5-m-long core segments were scanned for geophysical properties with a GEOTEK instrument at a shore base that was occupied throughout the drilling operations. In total, 324 core runs for 548 m of drilling acquired 323 m of core at an average recovery rate of 59%. The upper few tens of meters of sediment were mainly gray clay and silty clay. Core recovery was excellent in this upper part of the lake bed, and these cores will serve for the planned high-resolution study of climatic changes extending through much of the last glaciation. The sediment below the clay-rich upper section was mainly rather fine-grained, unconsolidated sand with only a few clayey layers. The character of these sandy units plus the persistent rough wind and wave conditions experienced during the drilling operation greatly hindered the recovery of good cores. The principal investigators thus decided to postpone the proposed 700-m drilling for a future campaign and to focus on obtaining high-quality, overlapping cores of the upper 30–50 m of relatively fine-grained sediment at several sites (Fig. 1).



*Figure 2. The GLAD800 drilling system being towed away from the dock for the first drill site.*

Hole 2C penetrated the deepest (114.9 m), and the cores from this site may provide paleoenvironmental information through the late Quaternary. Concurrently with offshore drilling, an onshore site was drilled successfully on Erlang Jian on the southeastern shore of the lake (Fig. 1) using Chinese equipment. The drill rig was deployed to its maximum drill string capacity, allowing coring down to 1108.9 m, with an average recovery of more than 90%.

Comparisons to outcrop exposures suggests that the lowermost sediment recovered sediments with a maximum age of late Miocene. The onshore drilling was conducted by the Qinghai Geology Survey, in collaboration with the IEECAS. All drill cores were shipped in refrigerated trucks to the IEECAS in Xi'an, China for storage at 2–5°C. So far, about sixty scientists from China, Japan, Europe, and North America have expressed interest in participating in upcoming studies. The principal investigators Z. An, S.M. Colman, G. Haug, P. Molnar, and T. Kawai and the science

team members are planning a science coordination and sampling meeting as soon as samples can be made available after opening and fully describing the cores.

**Acknowledgements:** About 500 scientists, engineers, and technicians from the People's Republic of China and abroad worked at and visited the drilling sites, mainly from the Chinese Academy of Sciences, the Ministry of Science and Technology of China, the National Science Foundation of China, the China Meteorological Association, the ICDP, and several universities and research organizations, as well as local governments. China Central Television and other TV stations and newspapers gave enthusiastic attention to this scientific research. They are all thanked for their contributions.

## ***2005 GSA Limnogeology field trip report***

### **Trippin' out(doors) – Notes from the Field 2005 GSA Field Trip Update**

**By**

**Kathleen Nicoll  
Department of Geography, University of Utah**

The year 2005 was a great one for GSA field trips, and lakes were well represented in the various



*Figure 1. Group photo of the 2005 GSA Field Trip Mesozoic Lakes of the Colorado Plateau taken looking eastward towards the Henry Mountains from the vantage of the Burr Trail in Capitol Reef National Park.*

excursions embarking from the Annual Meeting in Salt Lake City. The **Don R. Currey Memorial Field Trip to the Shores of Pleistocene Lake Bonneville** was sponsored by the Quaternary Geology and Geomorphology Division and was co- led by Holly Godsey (Dept. of Geology and Geophysics, University of Utah), Elliott Lips, David Miller, Mark Milligan, and Jack Oviatt. Participants visited classic field localities in northern Utah, including Antelope Island, Stockton Bar, Stansbury Gulch, the Brigham City delta, and Hansel Valley. The trip truly commemorated the scholarship of Don Currey (and his associates and students), all of whom have advanced the understanding of Lake Bonneville's records of geomorphic and hydroclimatic change.

The Limnogeology Division co-sponsored two field trips with the Sedimentary Geology Division. In the pre-conference period 13–15 October, **Lacustrine Records of Laramide Landscape Evolution, Green River Formation** was co-led by Alan Carroll (Dept. of Geology & Geophysics, University of Wisconsin) Paul Buchheim, and Arvid Aase. The famous Green River Formation records the geomorphic evolution of the surrounding landscape, and this trip (er... roving snack-a-thon) was back again by popular demand to examine the utility of large lake basins for interpreting former orogenic and geomorphic processes. Participants very much enjoyed the collecting stop for fossil fish, and the flamingo trackways.

Twenty people joined the 19-22 October post-conference excursion **Mesozoic Lakes of the Colorado Plateau**, which featured developing research into palaeolake systems in the scenic canyonlands of southern Utah and northern New Mexico (figures 1 and 2). The trip was co-led by Tim Demko (Dept. of Geological Sciences, University of Minnesota Duluth), Joe Beer, Steve Hasiotis, Lisa Park, and me. For those of you who couldn't join us, here is a summary of the main stops and a few photographs.

Our field trip explored the continental environments of Pangean North America, with particular emphasis on the stratal architecture of fluvio-lacustrine deposits in the Upper Triassic Chinle Formation and Upper Jurassic Morrison Formation. Both of these rock packages preserve a rich faunal and floral palaeontology (remember the dinosaur bone wars of the late 1800s?). Much of our discussion focused on the evolution of fluvio-palustrine-lacustrine systems and their proximal ecosystems as they can be reconstructed from various records, including palaeosols and terrestrial fossil and ichnofossil assemblages. A particular highlight of the trip was observing co-leader Steve Hasiotis “finding” trace fossils that otherwise could be easily overlooked; there was not one stop in which Steve failed to point out an interesting ichnofossil (although it might not be *the exact one* he was specifically intending to revisit...).

The first day's stops near Moab, UT and the Four Corners area focused on saline-alkaline lake, wetland and ephemeral fluvial channels of the Brushy Basin Member of the Morrison Formation. Palaeolake T'oo'dichi (Navajo for “bitter water”) might be the largest and oldest alkaline-saline system described from the geologic record. We examined the “bathtub rings” of zeolite, evaporite and authigenic mineral assemblages used to reconstruct tuffaceous input and lake desiccation. Preserved ichnofossils (rhizoliths, nests and burrows) help characterise the terrestrial-shoreline facies boundaries (figure 3). By the end of the first day, the vans were a lot heavier, perhaps due to the quarrying efforts of one particular Canadian, eh.



*Figure 2. Vans provide scale while exploring the geologic section exposed in the scenic Blue Notch Canyon, located in the Glen Canyon NRA.*



We spent day two on happy trails, looking at fluvio-lacustrine deposits and unconformity palaeosols in the Upper Triassic Chinle Formation in the Blue Notch Canyon and North Wash, Glen Canyon National Recreation Area. A descent into Blue Notch Canyon provides a window into the terrestrial successions of the Late Triassic. At the top of the pass, the Petrified Forest Member preserves palustrine limestones and calcareous mudstones of an underfilled lake system (Figure 4). Farther downsection, coals in the lower part of the Monitor Butte Member are unique organic-rich facies representing deposition in an overfilled lacustrine context (figure 5).



*Figure 3. Field trip co-leader Joe Beer points to a paleo-insect nest preserved in an interfluvial facies in the Brushy Basin Member of the Upper Jurassic Morrison Formation at Courthouse Draw north of Moab, UT.*

Some of the participants enjoyed a spiritual rebirth after the hike through the Navajo Nation Narrows mosh pit. The journey to the top of the bluff was a tough squeeze, but it was worth it for the fantastic panoramic vantage of large clinoform delta foresets exposed in the Monitor Butte Member. We further examined the fluvial sandstones of the Moss Back Member which represents one of several incised valleys within the Chinle Formation in the White Canyon area. Palaeosols associated with interfluvies between these valleys can be correlated across the San Rafael Swell, permitting a spatio-temporal reconstruction of landscape aggradation and degradation.

The theme of day three was the balanced-fill lake, and more carrots. In the morning, we looked at fluctuating-profundal and palustrine deposits in the Tidwell Member of the Upper Jurassic Morrison Formation near the Henry Mountains and Waterpocket Fold. In Shooting Canyon, vertebrate tracks and burrows in proximity to

floodplain palaeosols prompted a discussion of faunal diversity, hydroclimatic change, and flooding surfaces as agents for preservation; here the overlying Salt Wash Member of the Morrison Formation sits on a sequence boundary (if you look, you will believe).

After a drive up the Burr Trail (UT-262), we reached exposures along the Fremont River, where we examined evidence for “dinoturbation” (i.e., trampling) of ephemeral fluvial (or are they ephemeral lacustrine?) facies within the Tidwell Member. We then proceeded to Capitol Reef National Park to have another look at all three of the major sequence-bounding unconformities in the lower Chinle Formation (Shinarump, Monitor Butte, Temple Mountain, and Moss Back



*Figure 4. Another use for the vans – for displaying posters and fostering discussion – as people interpret the Chinle Formation outcrops at Blue Notch Pass.*



Members). A short hike along the Chimney Rock Trailhead enables access to a section of Monitor Butte that preserves lacustrine deposits overlain by pedogenetically modified crevasse splay deposits and lateral accretion sets. At the base of the overlying Moss Back Member there, a strikingly well-developed orange palaeosol made everyone hungry, strangely enough, for carrots... fortunately, we did have at the emergency cookie stash when we ran out of the preferred healthy snacks.

By the close of the trip, many of the participants admitted that, after so much driving to remote locations with such spectacular outcrops, they could believe in the Mesozoic Lakes of the



*Figure 5. Co-Leaders Tim Demko (sporting the GSA Limnogeology Division T-shirt he won for correctly identifying all the famous lake pictures at the 2004 booth) and Lisa Park (in pink shirt here although she actually designed the Limnogeology logo on the t-shirt) discuss hydric palaeosols and coal formation at an outcrop of the Monitor Butte Member of the Upper Triassic Chinle Formation.*

please see our related publication: Demko, T.M.; Nicoll, K.; Beer, J.J., Hasiotis, S.T.; and Park, L.E., 2005. Mesozoic Lakes of the Colorado Plateau. GSA Field Guide 6, p.329-356, doi: 10.1130/2005.fld006(16). Related research and this trip was permitted by the National Park Service and the Navajo Nation. Please remember to obtain appropriate permissions if you are following our itinerary, and do drive safely. Take lots of water, sunscreen and veggie snacks with you. See you out there in the field!!

Colorado Plateau as a significant component of the Pangean landscape. “It’s not the Green River Formation, of course,” said one person who shall remain unnamed. “No, this is better,” quipped trip co-leader Tim Demko, flashing his GSA Limnogeology Division t-shirt (figure 6).

For further details on the science behind this scenery, including stratigraphic columns and a summary of Pangean-to-Post-Pangean tectonics, palaeogeography, palaeohydroclimate, and palaeoecology in this part of the Western Interior,



*Figure 6. Tim Demko leads the discussion on a favorite topic of his – the Chinle Formation.*

## ***Limnogeology Division Kerry Kelts Awards for 2006***

This year one scholarship was given to a student for the annual Kerry Kelts Awards: the winner was:

**Caleb Schiff**  
Department of Geology  
Northern Arizona University



*Caleb Schiff at Mica Lake his thesis area in Alaska*

His project is:

### **Late-Holocene temperature of Prince William Sound, southern Alaska**

Caleb's proposal is to use the  $d^{18}O_{\text{diatom}}$  from a non-glacial lake in the Prince William Sound of southern Alaska (Mica Lake) as a proxy for decadal summer temperature of the past 2000 years. This record will be compared with the well-documented records of glacier advance and retreat, will provide insight into why Arctic climate is changing more rapidly than anywhere else on Earth, and place the present warming in context to late-Holocene climate.

## **Caleb's acceptance letter for the Kerry Kelts award**

Caleb Schiff  
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Northern Arizona University  
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PO Box 4099  
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<http://oak.ucc.nau.edu/cjs235/homepage.html>

Kerry Kelts Award Committee,

Thank you for selecting me as the recipient of the Kerry Kelts Research Award. The monetary support will, no doubt, aid the advancement of my thesis, "Late-Holocene temperature of Prince William Sound, southern Alaska." Of greater value, however, is your recognition of my work and my desire for a better understanding of geology. Such recognition fuels my drive to excel in my studies.

Recent recognition has also motivated me to become more involved in outreach to the community, disseminating the knowledge and advances that climate science is making, especially in Alaska. The centerpiece of my outreach will be a website I am starting, [www.AlaskaClimate.org](http://www.AlaskaClimate.org). The goals of AlaskaClimate.org are to educate and support groups or individuals who seek a better understanding of the present and past climate of Alaska, the effects on its environment, and the forcing of recorded and observed climate change. Through education and outreach, I hope to encourage the public to become knowledgeable of current climate events affecting Alaska, past and ongoing research in Alaska, and how changes in Alaska might be a harbinger to future global change. AlaskaClimate.org will be an open forum, where groups or individuals can post comments, questions, or recent news/articles concerning Alaska climate. Please pass along the URL to those who may find interest in its content.

I apologize for not attending GSA in October and accepting the award in person. Please accept my poster that summarizes my thesis in my absence. I would appreciate any feedback or comments you may have concerning my work. Please feel free to contact me via email or phone.

Most sincerely,

Caleb Schiff



## ***GSA Limnogeology sessions in Philadelphia***

### **T3. Reconstructing Landscape Contexts of Human Occupation Surrounding Wetlands**

*GSA Archaeological Geology Division; GSA Limnogeology Division; GSA Geology and Society Division,*

Archaeological Geology; Limnogeology; Quaternary Geology/Geomorphology

Catherine H. Yansa, Michigan State University, East Lansing, Mich.;

Andrea K. Freeman, University of Calgary, Alberta

This session will provide examples of how valuable information about human activities in wetland and surrounding upland landscapes is obtained from the analysis of soils, sediments, and fossils from wetlands (lake, bog, marsh, and riparian).

ORAL

### **T68. Gradients at Hydrologic Interfaces as Indicators of Key Earth-Surface (“Critical-Zone”) Processes**

*GSA Hydrogeology Division; GSA Geobiology and Geomicrobiology Division; GSA Limnogeology Division*

Hydrogeology; Environmental Geoscience; Geochemistry, Aqueous

David A. Stonestrom, U.S. Geological Survey, Menlo Park, Calif.;

Michelle A. Walvoord, U.S. Geological Survey, Lakewood, Colo.

Chemical and physical gradients at hydrologic interfaces provide information about processes that can sustain or threaten life. Key processes include weathering, nutrient cycling, regulation of natural water supplies, and transport of contaminants.

POSTER

### **T76. Detecting and Characterizing Fluxes of Water and Dissolved Constituents across the Groundwater–Surface Water Interface**

*GSA Hydrogeology Division; GSA Limnogeology Division*

Hydrogeology; Geochemistry, Aqueous; Limnogeology

Brewster Conant, University of Waterloo, Waterloo, Ontario;

Donald Rosenberry, U.S. Geological Survey, Denver, Colo.

Session examines preferential flow paths and areas of exchange between groundwater and surface water across the sediment-water interface of streams, lakes, and wetlands and the processes controlling water fluxes, mass fluxes, and biogeochemical reactions.

ORAL and POSTER

### **T95. Dating and Environmental Interpretation of Lake, Loess, and Marine Sediment Sequences using Paleomagnetism and Rock Magnetism**

*GSA Limnogeology Division*

Limnogeology; Paleoclimatology/Paleoceanography; Quaternary Geology

John A. Peck, University of Akron, Akron, Ohio;

John W. King, University of Rhode Island, Narragansett, R.I.

This session combines rock magnetic studies of environmental change from lake, loess, and marine sediments with paleomagnetic studies that provide robust chronologies for these sediment sequences on time scales from secular variation to reversals.

ORAL

**T96. Neogene and Quaternary Biological Paleolimnology: In Memory of J. Platt Bradbury**

*GSA Limnogeology Division*

Limnogeology; Paleoclimatology/Paleoceanography; Quaternary Geology

Scott W. Starratt, U.S. Geological Survey, Menlo Park, Calif.

During his career, Platt Bradbury pioneered techniques in biochronology and paleoenvironmental analysis of late Cenozoic lake sediments from around the world. Papers on all aspects of lacustrine analysis, particularly those using biological proxies, are welcomed.

ORAL

**T97. Core Analysis of Lake Sediments (Posters)**

*GSA Limnogeology Division; ExxonMobil*

Limnogeology

Elizabeth H. Gierlowski-Kordesch, Ohio University, Athens, Ohio;

Peter A. Drzewiecki, Eastern Connecticut State University, Willimantic, Conn.;

Kevin Bohacs, ExxonMobil Upstream Research Co., Houston, Tex.

Core analysis and comparison of modern lake sediments and fossil lake rock sequences will shed light on sedimentation processes as well as preservation potential of fossils and structures through time and space.

POSTER

***Premeeting field trips:***

**Lacustrine Cyclicity and the Triassic-Jurassic Transition**

Fri.–Sat., 20–21 Oct. Cosponsored by *GSA Sedimentary Division; GSA Limnogeology Division*.

Paul Olsen, Lamont-Doherty Earth Observatory, New York, N.Y., +1-845-365-8491, polsen@ldeo.columbia.edu; Jessica Whiteside.

***Limnogeology Core Workshop at GSA***

**Core Analysis of Lake Sediments**

Sat., 21 Oct. GSA Limnogeology Division Workshop.

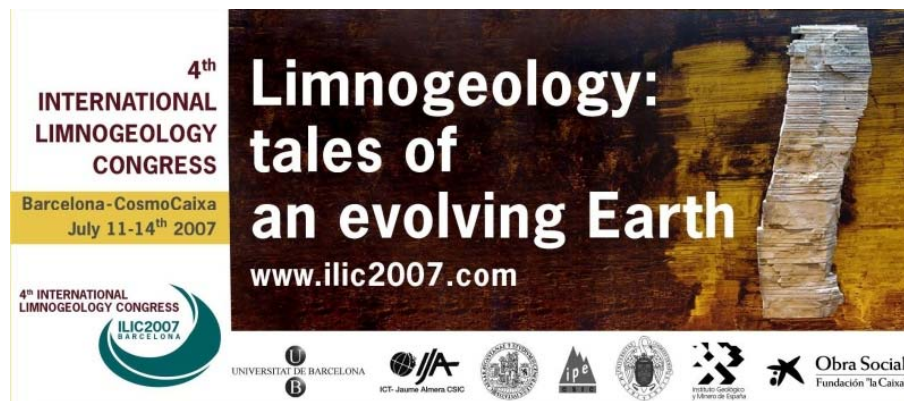
Core analysis and comparison of modern lake sediments and fossil lake rock sequences will shed light on sedimentation processes, climatic effects, and the preservation potential of fossils and structures through time and space. Please bring posters and/or cores describing your lake sediments. Posters can also be submitted for the poster session held during the annual meeting.

***Sponsored by ExxonMobil***

For more information, contact Elizabeth Gierlowski-Kordesch, [gierlows@ohio.edu](mailto:gierlows@ohio.edu).

*More meeting information on next page!*

## International Limnogeology Conference



The 4th International Limnogeology Congress (ILIC-2007) will be held in Barcelona, 11th-14th July 2007. This event is the continuation of a congress series dealing with the multidisciplinary, holistic study of ancient and recent lacustrine basin systems and ecosystems. The ILICs congresses seek to provide a periodic updated overview of the state of knowledge on lacustrine records and of different methodological approaches such as Stratigraphy, Sedimentology, Geochemistry, Structural Geology, Paleogeography, Paleoclimatology, and so on, all of them related with the Paleolimnology, but trying to approach the lacustrine systems in an integrative catchment to basin approach. The previous congresses were held in Denmark



*Chungra Lake, Chile*

(1995), France (1998) and United States (2003) with a large scientific success. The ILICs have been being promoted by the International Association of Limnogeology (IAL), a scientific organization created in 1995 in order to keep active the relationships between the researchers studying the lacustrine records from different points of view. Limnogeology is an emergent multidiscipline with a significant development all over the world. Its interests focus on academic aspects (evolution of complex systems, sedimentary records of the interaction between Lithosphere, Atmosphere, Hydrosphere and Biosphere continental surfaces, ancient paleoclimatic records)

as well as on immediate social-economic interests (records of recent climate changes, prospect and development of oil and/or gas plays, coal deposits, mineral resources and raw materials; water supply; landscape and geologic heritage). The Organizing Committee of the congress includes Spanish researchers from different Earth Sciences disciplines from several universities,



research centres and the Spanish Geological Survey (IGME). The Steering and the Scientific Committees are composed of relevant researchers from 16 countries.

The planned activities of the 4th International Limnogeology Congress comprise guest plenary lectures by some selected researchers, workshops, and oral and poster contributions from the rest of the attendees. In this new edition of ILIC, oral and poster sessions will be a part of the main organization frame, organized in symposia coordinated by specialists. Furthermore, field trips (pre and post-congress) showing the results of the study of ancient and recent lacustrine records in different geological provinces of the NE and S of Spain and/or the development of new techniques will be carried out.

We look forward having the opportunity to meet you in ILIC 2007, in Barcelona, just at the edge of the Mediterranean, a small sea that some times became nearly a lake. The “*Mare Nostrum*” that we would like to share with all of you, friends coming along with us from North, South, East and West.

On behalf of the ILIC 2007 organizing Committee  
Lluís Cabrera



*Cotacotani Lake, Chile*

## Scientific programme

1. **Lacustrine basins in their tectonic environments**
  - Tectonic controls on lacustrine basin evolution and records
  - Geodynamic cyclicity recorded in lacustrine sequences

- Lacustrine record of Global Tectonics: From super-continent break-up to orogenic assembly
- 2. **Lacustrine environments and basin fill: Depositional systems, Facies Assemblages and Sequence Stratigraphy**
  - Lacustrine terrigenous clastic sequences
  - Carbonate lacustrine sequences
  - Saline lakes and evaporite sequences
  - Wetlands through time and space
  - From springs and rivers to lakes: Tufa and travertine deposits
  - Karstic lakes
  - Volcanic and hydrothermal-related lakes
  - Glacial and subglacial lakes. The Antarctic "new world"
  - Sequence Stratigraphy in lacustrine systems. Unravelling tectonic and climatic forcing
  - Pedogenesis related to wetland and lacustrine environments. From subaqueous soil records to calcretes
  - 3D reconstruction and numerical modelling of lacustrine depositional systems and related deposits
- 3. **Integrated views of catchment-lacustrine basin systems**
  - Lacustrine records of landscape evolution: Tectonic, Morphologic and Climatic interplay
  - Landscape and downstream lacustrine systems: From weathering-erosion and sediment routing to basin fill deposition
  - Numerical modelling of crustal evolution and related lacustrine basins
- 4. **Economic resources in lacustrine sequences**
  - Lacustrine coals
  - The petroleum play in lacustrine basins
  - Metallic ores in lacustrine basins
  - Salt deposits and brines in lacustrine basins
  - Raw materials in lacustrine basins
- 5. **Lacustrine paleobiotas. Exceptional fossil assemblage records in lacustrine sequences**
  - Evolving lacustrine paleobiotas
  - Endemisms in large, long-lived lacustrine basins
  - Exceptionally preserved continental paleobiotic records in lacustrine sequences
- 6. **Geomicrobiology studies applied to lacustrine systems**
  - The role of bacteria in the endogenic lacustrine carbonate formation
  - Early diagenetic processes in lacustrine ecosystems related to bacteria communities
  - Geological impact of microbial transformations in lacustrine ecosystems over geologic time
- 7. **Lacustrine record dating. New proxies and advanced techniques**
  - Advances in scientific drilling and seismic exploration in lacustrine sequences
  - Geochronology of lacustrine records. New dating techniques and approaches
  - Paleomagnetic studies in lacustrine records
  - Advances in Biochemistry applied to lacustrine records
  - Multi-indicator records of lacustrine environmental changes

8. **Isotope Geochemistry in lacustrine records**
  - Isotopic records of paleoclimate, paleoweathering, paleodrainage and paleohydrology
9. **Precambrian to Neogene lacustrine records. Tectonic, climatic and hydrologic significance**
  - Pre-Quaternary lacustrine records all over the world
  - Lakes and Early Earth History: Archean lacustrine records
  - Pre-Quaternary lacustrine records in the peri-Mediterranean regions. From Iberia to the Middle East
  - From Lake to Sea and from Sea to Lake: Pannonian and Lago-Mare-like systems. Paleohydrological and paleoenvironmental frontiers
  - Studies on cyclicity and periodicity. Searching for tectonic and/or climatic forcing
  - Linkages between continental and marine records. An integrated paleoclimatic history
  - Ancient lacustrine records and paleoclimatic modelling
10. **Pleistocene-Holocene lacustrine records of regional and global environmental changes (climatic, tectonic, hydrologic)**
  - Paleohydrological evolution: linkage to climatic and morphologic changes
  - Reconstructing climate seasonality in recent lacustrine records
  - Annual and subannual lacustrine records. Paleoenvironmental significance
  - Impact of climate change on recent lakes: latitudinal inter-comparison
  - Lacustrine records of Quaternary climatic and cultural changes
  - Inter-hemispheric teleconnections of lacustrine records. Linkage between lacustrine, ice and oceanic records. Records of ENSO and NAO
  - Climate Change during the Glacial-Interglacial Transitions. Lacustrine record and effects
  - Quaternary lacustrine records and paleoclimatic modelling
11. **Monitoring lacustrine systems as natural laboratories**
  - Quantitative calibration of lake proxies: monitoring and experiments
12. **Natural hazard record in lacustrine sequences**
  - Record of catastrophic events (earthquakes, volcanic eruptions, floods and other natural hazards)
  - Catastrophic lacustrine floods
  - Killing lacustrine gas emissions
13. **Limnogeology in artificial lakes: From ancient dams to the Three Gorges water reservoir**
14. **Limnogeology and management of natural heritage (wetlands, lakes and "points of geological interest")**
15. **Extraterrestrial lakes: From Europe to Mars**



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**<http://rock.geosociety.org/limno/news.html>**

To get the latest information on other Limnogeology meetings and workshops

*If you don't have access to our website, please contact a Division officer for a list of meetings*