



# Quaternary Geologist and Geomorphologist



NEWSLETTER OF THE QUATERNARY GEOLOGY AND GEOMORPHOLOGY DIVISION

Fall 2001

Volume 42, Number 2



The edge of the Vatnajökull Ice Cap in southern Iceland, showing several small glaciers flowing off the ice cap and a big outwash fan leading to a large sandur complex in the foreground with numerous terraces. (courtesy R. Craig Kochel)

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## Message from the Outgoing Chair

**H**i everyone. I hope this message finds you safe and happy! Like you, I'm finding it difficult to focus on the issues of the Division with all that is going on around us, but I am confident that the strength of our commitment to freedom will pull us through these troubled times together. I just want to extend my heartfelt sympathy to those that have been directly affected by the events of last month and to all of us who have been so deeply affected in so many ways.

QG&G continues to be strong, diverse, and active! In November at the Annual Meeting in Boston, we are sponsoring several exciting Theme Sessions, a major field trip on coastal geomorphology and sedimentology, a well-packed handful of oral and poster technical sessions on topics ranging from soils and weathering to rivers, glaciers, mass wasting, and a variety of Quaternary topics. A Pardee Symposium will explore broad-based ethical and moral questions related to water entitled "The Watershed Within: Scientific and Moral Reflections on Water in the 21st Century". We hope you will enjoy as many of these events as you can. I thank the organizers and conveners of the special sessions and all of you who submitted abstracts to any of our sessions for your efforts.

Just a reminder..... the proposal deadline for Theme Sessions, and Pardee Sessions for the Annual Meeting in Denver 2002 is January 17, 2002. I know I said January 10 in the recent blast e-mail, but GSA changed the deadline since then. Now we have an extra week! Completed Field Trip proposals for the 2002 Meeting should be in by the end of November. Please contact the Field Trip Chair, Eric Erslev, if you need more information at [erslev@picea.cnr.colostate.edu](mailto:erslev@picea.cnr.colostate.edu). If you know that you will be offering a trip and have limited details, such as the dates, a rough title, etc., please contact Eric as soon as you can so he can include the trip in a brochure he is preparing for the GSA Meeting in Boston.

I should also alert all of you that starting next year, the GSA annual meetings will shift to a Sunday



R. Craig Kochel

through Wednesday schedule. Stay tuned to our newsletters and e-mails to find out what that means, if anything, with regard to the scheduling of regular annual meeting events such as the Award Ceremony and Reception.

Following what is now a year-old tradition, we will be offering our annual evening Division meeting as a streamlined Awards Ceremony and reception on Tuesday, November 6 at 7:00 p.m. (The winners of the division's four major and two student awards are listed on the next page. Congratulations to this amazing collection of talent in our ranks! Don't miss the special honorary technical talks to be given by each of the major award winners as part of the regular technical program in Boston. Please check your meeting programs to make sure of the location). Scott Burns, Division Treasurer, always makes sure we will have refreshments to enjoy during the reception! Based on response to last year's new format, the abbreviated citations and acceptances, combined with the lack of formal business, was enjoyed by all. It gives us a chance to highlight our honorable award winners while giving us time for a warm social gathering after the awards.

This year the graduate student awards are: The Arthur D. Howard Award for M.S. Student Research goes to Matthew D. Anders; Honorable Mention goes to Kurt Frankel. The J. Hoover Mackin Award for Ph.D. Student Research goes to Kyle K. Nichols; Honorable Mention goes to Jennifer Pierce.

Our senior awards this year are: The Don J. Easterbrook Distinguished Scientist Award awarded by Victor R. Baker. The Farouk El-Baz Award for Desert Research awarded to Nicholas Lancaster. Kirk Bryan Award for Research Excellence was awarded to Richard M. Iverson. The Gladys W. Cole Award was awarded to Dorothy Sack. Congratulations to this amazing collection of talent in our ranks! Special honorary addresses will be given by winners of the Easterbrook, E-Baz, and Bryan Awards. Please check your meeting programs for the times of these highlighted addresses and come hear the winners. I urge all of you to consider nominating people for these and other awards next year. We have several deadlines for these nominations, the first of which arrives very soon on DECEMBER 1 FOR THE KIRK BRYAN AWARD. Information on the awards, the nomination process, and the deadlines can be found at the QG&G Division website <http://rock.geosociety.org/qgg/index.htm> This year there were no nominations for the Distinguished Career Award. It's always tough selecting one winner among a pool of several wonderful candidates, but it is far more distressing knowing there are many members deserving this honor, and no one rose to the call to nominate them. I strongly urge you to consider making the effort nominate worthy candidates for next year. Let's give our senior members the recognition they deserve for their dedication and contributions to the field that we all love.

#### Nominate Officers and Panel Members Now!

Finally, I'd like to remind all of you to consider making the effort to nominate candidates for positions on the governing board and panel of QG&G. This very important task provides us with our future leadership.

It has been my sincere pleasure to serve on the board of such a vital, exciting, and caring division the past few years. I extend my deepest thanks to all members of the Division board and panel for their help in so many aspects of making things work this year, especially for their willingness to serve on nomination and selection committees. Special thanks to Alan Nelson, Division Secretary, for figuring out what has to be done and reminding others to do it.

Deborah and the rest of the QG&G Management team will be counting on your input and continued help over the coming year. The newly elected Division Officers and Panel Members are: Deborah R. Harden (Chair), J. Steve Kite (First Vice Chair), Ellen Wohl (Second Vice Chair), Scott Burns (Treasurer), Bill Johnson (Webmaster/Newsletter), and Kathy Haller, Rich Whittecar, and Darrell Kaufman (Panel Members). Congratulations and thanks to all! We have much to be proud of and we have an extraordinarily exciting and challenging future to look forward to. Thank you so very much!

I hope to see many of you in Boston!

Best regards and wishes to all of you,  
R. Craig Kochel, Chair

#### **IMPORTANT NOTE ON QG&G MEMBERSHIP:**

Last year GSA experimented with offering dues payments for multiple years. In doing so, it seems that a significant number of members didn't realize they had to also pay their Division dues the same way. As a result, the count on membership this year is extremely confusing. GSA Headquarters admits that the numbers are totally unreliable and that we really won't be able to determine membership totals until 2002 dues are paid. We do know that a significant number of new members have joined our Division. Please remember to check and pay your Division dues for 2002 so we can get an accurate count again. Thanks!!

Thanks,  
Craig

### **2001-2002 Division Officers and Panel Members**

#### **OFFICERS**

Chair  
First Vice-Chair  
Second Vice-Chair  
Secretary  
Treasurer  
Web/Newsletter Editor  
Historian:

**Deborah Harden**  
**Steve Kite**  
**Ellen Wohl**  
**Alan Nelson**  
**Scott Burns**  
**Bill Johnson**  
**Rich Madole**

**PANEL MEMBERS**

2001-2003 Panel: **Kathy Haller, Rich Whittecar, Darrell Kaufman**

2000-2002 Panel: **Carrie Patterson, Grant Meyer, Dave Dethier**

1999-2001 Panel (retiring): **Art Bettis, Peter Knuepfer, Marith Reheis**

Joint Technical Program Committee Representatives: **Deborah Harden, Steve Kite**

**DIVISION AWARDS**

**2001 KIRK BRYAN AWARD**

The Kirk Bryan Award, established in 1951, is given to the author or authors of a published paper of distinction advancing the science of Quaternary geology, geomorphology, or related field.

**Richard M. Iverson**

(Cascades Volcano Observatory, U.S. Geological Survey)

for his paper:  
Iverson, Richard, 1997,

*The physics of debris flows: Reviews of Geophysics*, v. 35, no. 3, p. 245-296.  
Gary Smith and John Costa, Citationists

**2001 DON J. EASTERBROOK DISTINGUISHED SCIENTIST AWARD**

The Easterbrook Distinguished Scientist Award, established in 1999, is presented to an individual who has shown unusual excellence in published research, as demonstrated by a single paper of exceptional merit or a series of papers that have substantially increased knowledge in Quaternary geology or geomorphology.

**Victor R. Baker** (Dept of Hydrology and Water Resources, Univ. of Arizona)  
Jim O'Connor, Citationist

**2001 FAROUK EL-BAZ AWARD FOR DESERT RESEARCH**

The Farouk El-Baz Research Award, established in 1999, is given annually for outstanding research on deserts to encourage arid land studies.

**Nicholas Lancaster**

(Desert Research Institute, Reno)

Dan Muhs and Marith Reheis, Citationists



**GSA GLADYS W. COLE MEMORIAL AWARD**

This award was established in 1980 with the intent of providing support for investigations of geomorphology of semiarid and arid terrains in the United States and Mexico.

**Dorothy Sack** (Ohio University)

*Middle Transgressive Phase of Lake Bonneville – A Comprehensive Basinwide Analysis.*



**2001 J. HOOVER MACKIN AWARD - \$2200**

The J. Hoover Mackin Research Award, established in 1974, provides support for graduate research (Ph.D.) in Quaternary geology or geomorphology.

**Kyle Nichols**, PhD candidate, Univ. of Vermont (Adviser: Paul Bierman)

*Quantifying desert piedmont process rates using in situ-produced cosmogenic 10-Be and 26-Al.*

**2001 J. HOOVER MACKIN AWARD HONORABLE MENTION**

**Jennifer Pierce**, PhD candidate, Univ. of New Mexico (Adviser: Grant Meyer)

*Holocene variations in fire frequency and sedimentation rates in the Idaho Batholith: Implications for the role of climate change.*

**2001 ARTHUR D. HOWARD AWARD - \$2200**

The Arthur D. Howard Research Award, established in 1992, provides support for graduate research (masters) in Quaternary geology or geomorphology.

**Matt Anders**, MS candidate, Utah State Univ., (Adviser: Joel Pederson)  
*Quaternary stratigraphy and landscape evolution of eastern Grand Canyon.*

**2001 ARTHUR D. HOWARD AWARD HONORABLE MENTION**

**Kurt Frankel**, MS candidate, Lehigh Univ. (Adviser: Frank Pazzaglia)  
Post-Laramide tectono-geomorphic evolution of Sierra Nacimiento, southern Rocky Mts.

Please join us at the Awards Ceremony in Boston. The reception will include refreshments.

Thanks to the 2001-2002 Nominating Committee: Peter Clark (chair), Grant Meyer, and Art Bettis

**CONTRIBUTIONS NEEDED: GSA KIRK BRYAN AWARD and QG&G DISTINGUISHED CAREER AWARD**

Endowments for the two oldest QG&G Division awards are a small fraction of those used to fund the Division's newer awards. Please contribute to the endowments for either award. Our initial goal is to increase the size of these funds to the point where they can cover the annual meeting expenses of winners of the awards. Gifts for either award should be sent to GSA specifying that they are 1) for the Kirk Bryan Memorial Fund, or 2) the QG&G Division to be used for the Distinguished Career Award. Thank you.

**GSA STUDENT RESEARCH AWARDS****2001 RESEARCH GRANT RECIPIENTS**

Again this year, the importance of the QG&G Division within GSA and of the relative research activity by the student membership is conveyed by the fact that nearly half (10) of the 23 students selected for **Outstanding Mention** (especially high merit in conception and presentation) are conducting research topically related to our division. These include the following:

**Eric Leland Bilderback**, Western Washington University, for *Chronology, Paleoclimatic Significance, and Erosive Behavior of Small Cirque Paleoglaciers, Enchantments Lake Basin, Washington.*

**Jason P. Briner**, University of Colorado, for *Ice Limits or Subglacial Processes—Towards Solving a Long-Standing Controversy using Cosmogenic Nuclides.*

**Sarah B. Das**, Pennsylvania State University, for *Towards Improved Paleoclimatic Reconstructions from Ice Cores: analyses of Stable Oxygen and Hydrogen Isotope Ratios of Snow and Firn Samples from West Antarctic and Automatic Weather Station Sites.*

**Terri Lacourse**, Simon Fraser University, for *Late Quaternary Paleoecology of the Queen Charlotte Islands, Vancouver Island, and the Adjacent Continental Shelf, British Columbia, and its Archaeological Implications.*

**Dave Lewis**, University of Alberta, for *Field Studies in Support of Mass Balance Modeling for High Arctic Glaciers and Ice Caps.*

**Ted Lewis**, University of Massachusetts, Amherst, for *Spatial and Temporal Changes in Processes of Sediment Delivery at Lake Tuborg, Ellesmere Island.*

**Joanne M. Livingston**, University of Calgary, for *Reconstructing the Late Holocene (Last 5000 Yr) Ice-Jam Flood History of the Upper Yukon River.*

**Carrie Morrill**, University of Arizona, for *Lake Level Fluctuations of Ahung Co, Tibet, and Implications for Century-Scale Variability of the Asian Monsoon*.

**Kenton Trubee**, The University of Akron, for *Ostracodes as Paleoenvironmental Proxy Indicators: Characterizing the Variability of Nonmarine Ostracode Faunas on San Salvador Island, Bahamas*.

**Christopher M. Wurster**, Syracuse University, for *Can Stable Carbon Isotope Values from Bat Guano be used in the Examination of Precipitation and Vegetation Changes in Arid Mexico?*

#### **ROBERT K. FAHNESTOCK AWARD**

The grant is awarded for the best student proposal to GSA in sediment transport or related aspects of fluvial geomorphology, Fahnestock's field. The 2001 recipient is **Martin W. Doyle**, Purdue University, for *Mechanisms, Rates, and Magnitudes of Channel Adjustments Following Catastrophic Disturbances*.

#### **JOHN MONTAGNE FUND AWARD**

This fund was established last year to support GSA student research in the field of Quaternary geology and/or geomorphology. The 2001 recipient is **Jason P. Briner** (see Outstanding Mention).

#### **ALEXANDER SISSION RESEARCH AWARD**

This award supports research for students pursuing studies in Alaska and the Caribbean. The recipient of this year's award is **Carolyn E. Garrison-Laney**, Virginia Polytechnic Institute and State University, for *Diatom Evidence for Earthquake-Induced Relative Sea-Level change, Copper river Delta, Southeastern Alaska*.

#### **JONATHAN O. DAVIS SCHOLARSHIP**

The family and friends of Jonathan O. Davis, a prominent U.S. geologist and geoarchaeologist and a DRI faculty member, have established an endowment that provides a yearly national Jonathan O. Davis Scholarship, as well as a stipend for a University of Nevada, Reno student.

Jonathan was tragically killed in an automobile accident in December 1990. It is the wish of his family and friends to support graduate students working on the Quaternary geology of the Great Basin and surrounding areas, research areas close to Jonathan's heart. The national scholarship is \$3,750 and the University of Nevada, Reno stipend is \$1,475.

The 2001 Jonathan O. Davis Scholarship has been awarded to **Kyle Nichols**, a Ph.D. student in Natural Resources at the University of Vermont. Kyle's research proposal was *Quaternary History and Process Rates of Desert Piedmonts*. In addition, a stipend was awarded to Tom Badger, an M.S. student at the University of Nevada, Reno, Dept. of Geological Sciences, for field research involving geology, failure mechanisms, and timing of gigantic landslides at Summer Lake basin, Lake County, Oregon.

The national scholarship, administered by the Division of Earth and Ecosystem Sciences of the Desert Research Institute, is open to graduate students enrolled in an M.S. or Ph.D. program at any university in the United States. The stipend, also administered by the Division of Earth and Ecosystem Sciences, is open to graduate students enrolled in an M.S. or Ph.D. program at the University of Nevada, Reno. Quaternary geology, as used here, encompasses a wide range of topics normally considered as part of the Quaternary sciences. The research, however, must have a substantial geologic component or demonstrate a strong reliance on geological techniques and must be focussed on the Great Basin and immediately adjacent areas.

Applications should include:

- A cover letter explaining how the individual qualifies for the award. Please include your social security number and state whether you are applying for the national scholarship or for the UNR stipend.
- A current résumé or vitae.
- A two-page, single spaced description of the thesis/dissertation research, which also

clearly documents the geological orientation and research significance.

- A letter of recommendation from the thesis/dissertation supervisor, which emphasizes the student's ability and potential as a Quaternary scientist.

Applications must be post-marked by February 2, 2002. Applications should be addressed to:

Executive Director  
Division of Earth and Ecosystem Sciences  
Desert Research Institute  
2215 Raggio Parkway  
Reno, NV 89512

*If you have further questions regarding the awards or the application process, please contact Mary Ann Moran at (775) 673-7458 or [mmoran@dri.edu](mailto:mmoran@dri.edu).*

## FROM GEOTIMES ANNUAL HIGHLIGHTS ISSUE (7/2001)

### GEOMORPHOLOGY

Robert Ridky  
University of Maryland



**G**eomorphology's contribution to understanding anthropogenic impacts is an increasing theme, one that continues to attract interest from many disciplines.

An example during the year 2000 was the special issue of the GSA Bulletin on geomorphology and surface processes (vol. 112, no. 12).

It focused on the drainage basin, a fundamental geomorphic unit that is the research base for many impact studies. Representative of both theme and direction of both the issue and of geomorphology research for the year 2000 was the lead article, "Effects of land-use change on channel morphology in northeastern Puerto Rico" (Clark and Wilcock, p. 1763-1777). It illustrated how geomorphologists use knowledge of past landscapes to understand present trends and better predict future land-

scapes. The authors noted reverse channel morphology, or the pattern of downstream shrinking channels, in heavily cleared northeastern Puerto Rico. This previously underreported pattern shows that downstream shallowing occurs when evacuation of coarse sediment during an earlier era is incomplete. The pattern could help geomorphologists identify the nature and location of future channel change and thus be a tool for land-use planning and river management.

Roads often alter landscapes, but their impact is disproportionately high in forested and logging basin areas. Many posters at the fall 2000 meeting of the American Geophysical Union investigated the effects of roads on such areas. In these studies, topographic analysis of watersheds provided insight on the relationships among discharge, sediment yield and historical land-use change. Research techniques frequently employ high-resolution, finite element models, as well as vector-based stream tube elements and multifractal analysis. These techniques are tools for defining and quantifying a range of complex and nonlinear events. For example, it is now possible, over a long time scale, to predict the development of a drainage basin that might have only a relatively small number of relations to a natural basin. All of these analytical approaches are providing valuable information to those who need to better predict how basins respond to human activities. Skepticism on the basic assumptions behind predictive modeling continues. Some researchers have expressed concern over the degree to which basic assumptions are simplified to the point of irrationality (O. Pilkey and M. Stutz, *Geotimes*, v. 45, n. 12) or whether incomplete principles are routinely used in models where, by operational convention, they are considered valid.

Other speakers at the fall AGU meeting drawn broadly from hydrology and geophysics set forth conditions for judging mechanistic models. Models must not only have predictive power but must be constructed with specification and coherence. Dynamical variables on which the model operates and interacts with the external environment must be clearly identified and shown to be consistent with exact conservation laws of classical mechanics. Also, constructing models requires more insight into the dynamics of geomorphic systems over long

time scales, rather than more accurate numerical methods.

In glacial and Quaternary studies, glacial outbursts or jökulhlaups (catastrophic floods) continue to garner interest as they dramatically alter the physical and human environment. In Iceland, it is now clear that these outbursts drain from major volcanic systems overlying the Icelandic hotspots. It is also clear that fracture fills from the 1996 Vatnajökull Glacier outburst extended into areas of Skeidararjökull previously thought to be unaffected (Matthew J. Roberts, et al., *Earth Surface Processes and Landforms*, v. 25, n. 13). Ice-dam flotation by water trapped behind or beneath the glacier is one of the most frequent causes of these outbursts. It is now known that debris content, because of its intrinsic effect on glacier density, is a major factor in ice-dam flotation. This could provide more realistic and reliable estimates of timing and magnitudes of jökulhlaups (F. Tweed, *Earth Surface Processes and Landforms*, v. 25, n. 1).

Geomorphologists are also paying attention to ecological restoration. In a study of the Kissimmee drainage basin (Warnee et al., *GSA Bulletin*, vol. 112, no. 6) historic, pre-canal conditions of the coastal ridge, lagoon, carbonate solution, shallow-shelf and low gradient fluvial features provide the geomorphic references for rehabilitating this important headwater of the Everglades.

Studying interactions among rainfall volume, retention, distribution and discharge is helping us to develop realistic restoration expectations. A significant amount of geomorphic work occurs on the channel system during out-of-bank periods of discharge. Also, models derived solely from general populations of river systems may produce spurious reference conditions for restoration.

Geomorphological linkages with atmospheric sciences continue to develop. A useful example is the research by Storlazzi and Griggs (*GSA Bulletin*, v. 112, n. 2) that establishes an intensity event time series for El Niño-Southern Oscillation events. This time series is useful for studying El Niño's geomor-

phic effects along the central California coastline. The intensity index is found to correlate with fluctuations in cyclone activity, precipitation, sea level, wave height, sea-surface temperature and sea-level barometric pressure. Wave height, sea level and precipitation, which are primary external forcing parameters in sea-cliff erosion, are found to increase nonlinearly with El Niño intensity. Findings indicate that up to 76 percent of significant coastal erosion and storm damage along the central coast occurred during El Niño events.

The study of badland geomorphology is gaining status because it provides a way to predict areas of severe land degradation and provides a basis for rehabilitation. Badlands are regions with little or no vegetation, poor soils and topography deeply dissected by erosion. They are unfit for agriculture. Sites vary, are present almost anywhere, and represent a superb platform for studying intense self-preserving or recovery systems. A collection of papers representing almost two decades of research on badlands processes and changing environments was released in a special publication of *Catena* (v. 40, n. 2).

The papers present the newest ideas about badland formation and processes in the context of global change. Besides improved knowledge along traditional lines of research (such

as lithologic controls of badland processes), major understandings are now being made about the role of microclimates, broad neotectonic controls and vegetation.

Collectively, current work in geomorphology emphasizes the importance of considering hazard assessment and planning development throughout critical regions. Such direction is of particular significance as the broader discipline attempts to develop frameworks for understanding the relationship between form and process in dynamic systems.

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E-mail: ridky@geol.umd.edu.

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*Findings indicate that up to 76 percent of significant coastal erosion and storm damage along the central coast occurred during El Niño events.*

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### SHOULD THE QG&G DISTINGUISHED CAREER AWARD BE DISCONTINUED?

The Distinguished Career Award of the QG&G Division will not be awarded in 2001 for the first time since its inception in 1986. Despite numerous requests for nominations in newsletters and blast email messages the QG&G Secretary has not received a single nomination for this award in two years. The Management Board of the Division considers this lack of nominations to be a clear sign of general disinterest in this award by the members of the Division. Should the QG&G Division discontinue this award in future years? Please respond to the Secretary (Alan Nelson, [anelson@usgs.gov](mailto:anelson@usgs.gov)).

### ELIMINATE THE QG&G ELECTION PAPER BALLOTS AND SAVE A TREE?

As an unintentional experiment, paper ballots for the 2001 election were not included in the Spring 2001 newsletter. A blast email message to all division members stating that paper ballots would be sent to any members requesting them yielded only two requests. The Secretary interprets this response as evidence that almost all members who take the time to vote are comfortable with using the electronic ballot on the GSA web site. Because preparing and tallying paper ballots is considerably more time consuming (and expensive) than electronic ballots, the QG&G Management Board is considering eliminating paper ballots in 2002. Please let the Secretary (Alan Nelson, [anelson@usgs.gov](mailto:anelson@usgs.gov)) know whether or not this is a good idea.

### HIGHLIGHTS OF THE UPCOMING BOSTON MEETING 2001

#### FIELD TRIPS OF INTEREST TO QG&G MEMBERS:

1. Quaternary Sea-level Change and Coastal Evolution in Eastern Maine  
Cosponsored by GSA Quaternary Geology and Geomorphology Division.  
Thur.-Sun., Nov. 1-4. Cost: \$325.  
Joseph T. Kelley <[jtkelley@maine.edu](mailto:jtkelley@maine.edu)>, Dan Belknap, Duncan FitzGerald, Jon Boothroyd.

11. Quaternary Environments and History of Boston Harbor, Massachusetts  
Cosponsored by GSA Quaternary Geology and Geomorphology Division.  
Sun., Nov. 4. Cost: \$70.  
Patrick Colgan <[pcolgan@lynx.neu.edu](mailto:pcolgan@lynx.neu.edu)>, Peter Rosen.

#### SESSIONS OF INTEREST TO QG&G MEMBERS:

##### Monday 11/5

7. Paleoclimatology/Paleoceanography (posters)
8. Paleoclimatology/Paleoceanography I
29. Quaternary Geology/Geomorphology I

41. T32: America's Coastal Crisis-Providing the Geoscience Information Needed to Conserve and Protect Coastal Resources (posters)

##### Tuesday 11/6

52. Archaeological Geology (posters)
60. Quaternary Geology/Geomorphology II
65. T10: Holocene Climate Change: Seasonal Variability to Centennial Trends I
68. T34: Coastal Geology of the National Parks
80. Marine/Coastal Science (posters)
91. T10: Holocene Climate Change: Seasonal Variability to Centennial Trends II

QG&G Business Meeting and Awards Ceremony, 7-10pm HCC Ballroom A

##### Wednesday 11/7

106. Quaternary Geology/Geomorphology III
113. T22: Quaternary Stratigraphy in Glaciated Terranes: Techniques, Tools, and Mapping (posters)

121. T65: Erosion of Non-Lithified Sediments: Observations and Models from Millimeter to Hillslope Scales

122. T67: Archaeological Geology and the Pleistocene-Holocene Transition

125. Archaeological Geology

133. Quaternary Geology/Geomorphology (posters) I

142. T33: Coastal Erosion Programs: Collaborative Geologic Research in Action

144. T63: Contributions of High-Resolution Geophysics to Understanding Neotectonics and Seismic Hazard

#### Thursday 11/8

159. Paleoclimatology/Paleoceanography II

180. Quaternary Geology/Geomorphology (posters) II

181. Quaternary Geology/Geomorphology

### INQUA 2003 FIELD TRIPS

Eighteen field trips preceding and following the 2003 meeting of the International Quaternary Association are being planned. Latest updates and pre-registration are available at: [http://www.dri.edu/DEES/INQUA2003/trip\\_pre-reg.htm](http://www.dri.edu/DEES/INQUA2003/trip_pre-reg.htm)

#### Pre-Congress Field Trips

**A-1 QUATERNARY GEOLOGY AND ECOLOGY OF THE GREATER YELLOWSTONE AREA\* [7 DAYS] (\*NOTE: THIS TRIP IS SAME AS B-4)**

##### Trip organizers:

Kenneth L. Pierce, U.S. Geological Survey; Don Despain, U. S. Geological Survey; Ken Cannon, Midwest Archeological Center; Cathy Whitlock, University of Oregon

**Estimated cost:** \$600 U.S

Chronology and dynamics of Pleistocene glaciations; calderas, rhyolite flows, and their relationships to glaciations; relationships between geology and ecology; post-glacial climate and fire history; neotectonics, including the Teton and Hebgen Lake faults; Yellowstone caldera unrest and Yellowstone Lake level changes; archeology of Yellowstone lake terraces; track of the Yellowstone hotspot; and, of course, geothermal features. Travel most of the roads in Yellowstone and into adjacent areas, including Jackson Hole and the Grand Tetons, Yellowstone Valley north of the Park, and the West Yellowstone Basin west of the Park.

#### **A-2 QUATERNARY GEOLOGY OF THE WESTERN UNITED STATES [14 DAYS]**

##### Trip organizer:

Don J. Easterbrook, Western Washington University

**Estimated cost:** \$1200 U.S

Quaternary geology of classic areas throughout the western U.S. led by local experts. Glaciation of the Puget Lowland, North Cascades, and Columbia Plateau in Washington; morphologic, stratigraphic, and chronologic evidence for pre-Younger Dryas and Younger Dryas readvances of the Cordilleran Ice Sheet during the Sumas Stade; Moraines and ice-contact deposits of long alpine valley glaciers in the North Cascades following disappearance of the Cordilleran Ice Sheet; Moraines, eskers, kames, and outwash fans of the Okanogan lobe of the Cordilleran Ice Sheet on the Columbia Plateau. Relationship of large coulees, scablands, giant bars, giant ripples, dry falls, and cataracts of the cataclysmic Missoula floods to moraines of the Okanogan lobe; Alpine glaciation of the northern Rocky Mts.-late Pleistocene moraines of the Idaho Sawtooth Range; Pleistocene glaciations of Yellowstone National Park, Wyoming; calderas, rhyolite flows, and their relationships to glaciations, neotectonics, and thermal features; Pleistocene glaciation and tectonics of the Grand Teton Range; 10Be chronology of Pinedale and Bull Lake moraines in the Wind River Range near Pinedale, Wyoming; deserts of the Great Basin; glaciation of the Sierra Nevada, California, moraines from each of the recognized Sierran glaciations. Start in Seattle, Washington; end in Reno, Nevada.

**A-3 QUATERNARY STRATIGRAPHY, GEOMORPHOLOGY, SOILS, AND ALPINE ARCHAEOLOGY IN AN ALPINE-TO-PLAINS TRANSECT, COLORADO FRONT RANGE [5 DAYS]**

**Trip organizers:**

Peter Birkeland, University of Colorado; Ralph Shroba, U.S. Geological Survey

**Estimated cost:** \$500 U.S.

Quaternary fluvial terraces and soils in the plains; tills and soils in the mountains (Holocene to OIS 6); soils on landscapes beyond the glacial limits; deposits and soils in the canyons that connect high mountains to plains; geomorphic processes, periglacial landforms, soils, and archeology above treeline; field properties and field relationships of soils; latest radiocarbon and cosmogenic dates. Strenuous 6-10 km hikes involved during last 2 days at 3000 to 3500 m.

**A-4 SOIL GEOMORPHOLOGICAL STUDIES IN THE MOJAVE DESERT: IMPACTS OF QUATERNARY TECTONICS, CLIMATE, AND ROCK TYPE ON SOILS, LANDSCAPES, AND PLANT-COMMUNITY ECOLOGY [4 DAYS]**

**Trip organizers:**

Les McFadden, Univ. of New Mexico; Missy Eppes, Univ. of New Mexico; Eric McDonald, Desert Research Institute

**Estimated cost:** \$300 U.S.

Quaternary geology, geomorphology, pedology, and ecology of the piedmonts of the San Bernardino and Providence Mountains, western and central Mojave Desert, southern California, and other selected areas in the region. In both mountain ranges, large areas of granite and limestone provide the major sources of sediment to piedmonts that flank the ranges, and offer excellent opportunities to assess the influences of soil parent material on soil-forming processes. The fan surfaces range in age from early Pleistocene to late Holocene. Some have been geochronologically dated, providing the basis for numerous soil-chronosequence-based studies. The mountain fronts of the two ranges exhibit significant contrasts in tectonic activity (San Bernardino Mts. -- moderate to locally very tectonically active; Providence Mountains -- tectonically inactive in the Quaternary, well developed pediments), affording an opportunity to assess the influences of tectonic activity and Quaternary climate changes on piedmont, mountain front, and drainage basin evolu-

tion. Dramatic contrasts in parent material, type and age of soils, as well as climate across extensive piedmonts, provide the basis for landscape, plant, and community ecology research.

**A-5 THE PALOUSE LOESS AND THE CHANNELED SCABLAND: A PAIRED ICE-AGE GEOLOGIC SYSTEM [3 DAYS]**

**Trip organizers:** Alan Busacca and David Gaylord, Washington State Univ.

**Estimated cost:** \$400 U.S.

Classic exposures of the stratigraphy of well-dated sand dunes and Palouse loess. Trace correlated and dated buried paleosols across a bioclimatic gradient to reconstruct Ice Age environments. Examine evidence for mechanisms of generation of dunes and loess from scabland flood deposits. Classic geomorphic features of the Channeled Scabland formed by cataclysmic glacial outburst floods from glacial Lake Missoula -- coulees, megacurrent ripples

**A-6 CONTRASTING GLACIAL LANDSCAPES CREATED BY ICE LOBES OF THE SOUTHERN LAURENTIDE ICE SHEET [5 DAYS]**

**Trip organizers:**

Carrie Jennings Patterson, Macalester College; Ardith Hansel, Illinois Geological Survey; Dave Mickelson, University of Wisconsin

**Estimated cost:** \$550 U.S.

Emphasis on variation of glacial landform-sediment assemblages between ice lobes of the southern Laurentide Ice Sheet at key landscapes and outcrops in Illinois, Iowa, Minnesota, and Wisconsin. These states were covered in part by the Michigan, Des Moines, Superior Chippewa, Langlade, and Green Bay lobes, which, although not synchronous, were all active during the late Wisconsin. Reasons for the strongly contrasting sediment-landform assemblages associated with the different lobes include: sediment texture; ice retreat vs. stagnation; basal thermal regime; periglacial activity after deposition.

**A-7 PLIOCENE-TO-HOLOCENE LAKES IN THE WESTERN GREAT BASIN: NEW PERSPECTIVES ON PALEOCLIMATE, LANDSCAPE DYNAMICS, TECTONICS, AND PALEODISTRIBUTION OF AQUATIC SPECIES [7 DAYS]**

**Trip organizers:**

Marith C. Reheis, U.S. Geological Survey; Ken Adams, Desert Research Institute; Scott Stine, Calif. State Univ. at Hayward

**Estimated cost:** \$575 U.S.

Large, late-Pliocene-to-Holocene lakes in the western Great Basin. Chronology of highstands, timing of drainage integration, distribution of aquatic organisms, effects of river diversion on lakes, controls on and effects of isostatic rebound, and timing of minor fluctuations in lake level during the last lake cycle. Key outcrops and geomorphic features containing chronologic and strati-graphic evidence for lake fluctuations and drainage changes. Emphasis on paleomagnetic data, tephrochronology, paleosols, and tectonics. Visit (1) Walker Lake (southern arm of Lake Lahontan), Walker River, Mono Basin, and Fish Lake Valley-Columbus Salt Marsh; (2) central Nevada between Eureka and Battle Mountain, including Kobeh, Newark, and Diamond Valleys; and (3) Humboldt River from Winnemucca to Fallon, including Rye Patch Dam and Carson Sink. Additional attractions include Mono Lake, the eastern Sierra Nevada and White Mountains, Nevada mining towns, hot springs, and the Pony Express and Emigrant Trails.

#### **A-8 GEOARCHAEOLOGY AND LATE QUATERNARY STRATIGRAPHY OF THE GREAT PLAINS [6 DAYS]**

##### **Trip organizers:**

Vance Holliday, University of Wisconsin-Madison; David Meltzer, Southern Methodist University

**Estimated cost:** \$630 U.S.

Late Quaternary archaeological and stratigraphic records and paleoenvironmental interpretations of key localities on the southern and central Great Plains. Focus on (1) classic Paleo-Indian archaeological sites (i.e., those associated with the earliest occupants of North America), and (2) dunes and sand sheets, although other settings, including small "playa" basins and dry valleys or "draws," will be examined. Visits to Lubbock Lake, Clovis, San Jon, Folsom, and Lindenmeier archaeological sites. Other sections, sites, and regions include the Blackwater Draw Formation type section, Muleshoe Dunes, Capulin Mountain cinder cone, Pike's Peak, Denver Museum of Natural History, and Nebraska Sand Hills. Short hikes over gentle terrain, but some at high altitude. Expect very hot weather.

#### **A-9 LATE QUATERNARY EOLIAN SEDIMENTARY SYSTEMS OF THE USA MIDCONTINENT [6-7 DAYS]**

##### **Trip organizers:**

Art Bettis, The University of Iowa; Joe Mason, NE Conservation and Survey Division

**Estimated cost:** \$520 U.S.

This trip highlights the diverse loess sedimentary systems of the midcontinent USA. Loess and eolian sand sedimentary systems, including glaciogenic, valley-source, loess systems of the Mississippi and Missouri valleys, non-glaciogenic systems of central Nebraska and northeastern Colorado, a stabilized last full-glacial dune field in northwestern Illinois, and the Nebraska Sand Hills, the largest sand dune area in the Western Hemisphere. Visits to classic and recently investigated sections and discussions of Laurentide ice sheet behavior reflected in loess, atmospheric circulation patterns indicated by loess and eolian sand, and geochemical fingerprinting of loess source areas. Visit to the Loveland Loess type section in western Iowa and the thickest last-glacial (Marine Isotope Stage 2) loess in the world at Bignell Hill in Nebraska.

#### **A-10 MARGIN OF LAURENTIDE ICE TO THE ATLANTIC COASTAL PLAIN: MIOCENE-PLEISTOCENE LANDSCAPE EVOLUTION IN THE CENTRAL APPALACHIANS [5 DAYS]**

##### **Trip organizers:**

Duane Braun, Bloomsburg University; Frank J. Pazzaglia, Lehigh University; Bill Sevon, Pennsylvania Geologic Survey

**Estimated cost:** \$600 U.S.

Emphasis on Quaternary events in the central Appalachians, with a secondary look at Miocene-Pliocene events that set the stage for the Quaternary. Long-term geomorphic evolution of the Appalachians (Davis vs. Hack) with emphasis on constraints imposed by the continental margin sediment record and new He/U-Th thermochronology. Late Wisconsin to pre-Illinoian-G or older glacial sequence in eastern Pennsylvania. Negative evidence for catastrophic floods down the Susquehanna. Lower Susquehanna Valley, Plio-Pleistocene terrace sequence; erosion features at Holtwood gorge potholes and deeps. Pre-Illinoian glacial deposits -- normal magnetic polarity to reversed magnetic polarity. Coastal Plain exposures at the York sand and gravel pits and on Elk Neck at the head of Chesapeake Bay. Connection

between poorly dated Susquehanna terraces and better dated Coastal Plain sediments. One 1-km hike. Expect warm weather, possible rain.

## Post-Congress Field Trips

### **B-1 BASAL FREEZE-ON PROCESSES OF THE MATANUSKA GLACIER AND QUATERNARY GEOLOGY NORTH OF ANCHORAGE, ALASKA [4-7 DAYS]**

#### **Trip organizers:**

Ed Evenson, Lehigh University; Dan Lawson, Cold Regions Research and Engineering Lab; Grahame Larson, Michigan State University

**Estimated cost:** Not yet determined

Evidence for basal freeze-on processes of the Matanuska Glacier, Alaska. Examination of exposures of ice that show features related to the freeze-on process. Ice marginal deposits brought to the glacier terminus at the base of the ice. Quaternary features north of Anchorage. Short hikes to the glacier terminus.

### **B-2 CORDILLERAN ICE SHEET GLACIATION OF THE PUGET LOWLAND AND COLUMBIA PLATEAU. ALPINE GLACIATION OF THE NORTH CASCADES, WASHINGTON [5 DAYS]**

#### **Trip organizers:**

D. J. Kovanen & Don Easterbrook, Western Washington University

**Estimated cost:** \$500 U.S.

Glaciation of the Puget Lowland by the Cordilleran Ice Sheet. Late Wisconsin deglaciation, deposition of glaciomarine drift, and abrupt, multiple, relative sea level changes up to 200m. Morphologic, stratigraphic, and chronologic evidence for pre-Younger Dryas and Younger Dryas readvances of the Cordilleran Ice Sheet during the Sumas Stage. Moraines and ice-contact deposits of long alpine valley glaciers in the North Cascades following disappearance of the Cordilleran Ice Sheet. Correlations of moraines in the North Cascades with Sumas moraines. Moraines, eskers, kames, and outwash fans of the Okanogan lobe of the Cordilleran Ice Sheet on the Columbia Plateau. Relationship of large coulees, scablands, giant bars, giant ripples, dry falls and cataracts of the Missoula floods to moraines of the Okanogan lobe.

### **B-3 MOUNTAIN GLACIATIONS IN THE SIERRA NEVADA [5 DAYS]**

**Trip organizers:** Alan R. Gillespie, University of Washington; Bud Burke, Humboldt State University; Doug Clark, Western Washington University

**Estimated cost:** \$500 U.S.

The glaciated valleys of the Sierra Nevada prompted the development of some of the earliest concepts about mountain glaciation in the U.S. and continue to act as a focal point for study today. This field trip will visit moraines from each of the recognized Sierran glaciations, from pre-Sherwin to the Little Ice Age, allowing discussion of current concepts of chronology, synchronism with mountain glaciations elsewhere, and discrepancies between the local and global records of paleoclimate. Ice-sculpted valleys, moraines, moraine-fan interactions, and lots of evidence of rock weathering and soil formation. Visit key areas where important concepts were developed, from Eliot Blackwelder's "Tahoe" deposits, to bogs cored to constrain the glacial chronology since the Last Glacial Maximum, to sites used to estimate the production rate of cosmogenic nuclides. The itinerary includes visits to the following areas: (1) Lake Tahoe, Luther Pass and the West Walker River; (2) Mono Basin and Tioga Pass; (3) Long Valley and the Sherwin Grade. We will visit the dramatic eastern escarpment of the Sierra Nevada, the 11x19 km Long Valley Caldera and the Bishop Tuff, and alpine and desert scenery. Although most sites are close to car access points, each day will involve some hiking, and some days will involve moderate hiking at altitudes up to 3000 m.

### **B-4 QUATERNARY GEOLOGY AND ECOLOGY OF THE GREATER YELLOWSTONE AREA\* [7 DAYS] (\*NOTE: THIS TRIP IS SAME AS A-1)**

#### **Trip organizers:**

Kenneth L. Pierce, U.S. Geological Survey; Don Despain, U. S. Geological Survey; Ken Cannon, Midwest Archeological Center; Cathy Whitlock, University of Oregon

**Estimated cost:** \$600 U.S.

Chronology and dynamics of Pleistocene glaciations; calderas, rhyolite flows, and their relationships to glaciations; relationships between geology and ecology; post-glacial climate and fire history; neotectonics, including the Teton and Hebgen Lake faults; Yellowstone caldera unrest and Yellowstone Lake level changes; archeology of Yellowstone lake terraces; track of the Yellowstone hotspot; and, of course, geothermal features. Travel most of the

roads in Yellowstone and into adjacent areas, including Jackson Hole and the Grand Tetons, Yellowstone Valley north of the Park, and the West Yellowstone Basin west of the Park.

**B-5 THE ROCKY MOUNTAIN GLACIAL MODEL: THE WIND RIVER RANGE [3 DAYS]**

**Trip organizer:**

Dennis Dahms, Univ. of Northern Iowa

**Estimated cost:** \$400 U.S.

Focus will be on localities and exposures used by Blackwelder, Richmond, and others to describe the glacial succession of the Wind River Range. Stops will include the type localities for the Pinedale, Bull Lake, and pre-Bull Lake deposits (Sacajawea Ridge, Cedar Ridge, Washakie Pt.) Type Bull Lake till and Cedar Ridge exposure of Richmond (1965) and reinterpretation of Hall. Inner valley moraine sequence in Sinks Canyon, including Pinedale, possible early Wisconsin, Bull Lake, and pre-Bull Lake deposits and associated soils; cross-valley cosmogenic erosion sequence of Harbor and others. Type Pinedale till of Blackwelder and Richmond; early Wisconsin moraines.

**B-6 MARINE TERRACES AND SEA LEVEL HISTORY ON THE COAST OF CALIFORNIA**

**Trip organizer:**

Dan Muhs, U.S. Geological Survey

**Estimated cost:** \$500 U.S.

Prominent marine terraces along much of the Pacific Coast of North America from Baja California to Washington are the result of coastal erosion and sea level fluctuations superimposed on tectonic uplift. More than 200 high-precision, U-series ages on solitary corals found in marine terrace deposits allow generation of a detailed chronology. The lowest marine terraces along the coast usually date to one or more sea-level high stands of the last interglacial complex at around 120 ka, 100 ka, and 80 ka (oxygen isotope substages 5e, 5c and 5a, respectively). Faunas in these terrace deposits that date to 120 ka contain extralimital southern species, indicating warmer-than-present coastal waters during the peak of the last interglacial (equivalent, more or less, to the Eemian of Europe). In contrast, 80 ka terrace deposits contain extralimital northern species indicating cooler-than-present waters during the latest high sea stand of the last interglacial complex.

**B -7 QUATERNARY GEOLOGY AND GEOMORPHIC PROCESSES AND LANDFORMS ALONG A TRAVERSE OF NORTHEASTERN NEW ENGLAND [7 DAYS]**

**Trip organizers:**

P. Thompson Davis, Bentley College; Woodrow B. Thompson, Maine Geological Survey

**Estimated cost:** \$870 U.S.

Traverse northern New Hampshire and Vermont to central Massachusetts to examine raised glaciomarine deltas and related landforms, including moraines along the Maine coast, eskers in central Maine, landforms of alpine glaciers and continental ice sheets, mass wasting deposits in the White Mountains of northern New Hampshire, and the famous varves of glacial Lake Hitchcock in the Connecticut River Valley. Discussion of the most recent chronologies derived from radiocarbon, varve counting, and cosmogenic exposure dating. Demonstration of GPR and other useful field mapping techniques and discussion of various interpretations of glacial recession in New England and the morphosequence concept.

**B-8 GEO-UBIQUITY: CHEMICAL, HYDROLOGICAL, AND PHYSICAL EVOLUTION OF COASTAL TERRACES NEAR SANTA CRUZ, CALIFORNIA [2 DAYS]**

**Trip organizer:**

Jennifer Harden, U.S. Geological Survey; Marjory Schulz, U.S. Geological Survey; Jerry Weber, retired Geologist, Univ. California Santa Cruz

**Estimated cost:** Not yet determined

Tectonics, geochronology, mineral weathering, soil development, unsaturated zone hydrology, and surface water hydrology of soils and terraces in the Santa Cruz area. The focus of this trip is on longer-term geologic processes and rates that formed what we observe today, including issues of carbon and nutrient cycling, water quality, and tectonic deformation. Visits to local wineries and/or the Monterey Bay Aquarium. Expect pleasant weather.

For further information on Field Trips, please contact:

**Don J. Easterbrook**

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## 7TH INTERNATIONAL CONFERENCE ON FLUVIAL SEDIMENTOLOGY

The 7th International Conference on Fluvial Sedimentology (7th ICFS) was held August 6-10 in Lincoln, Nebraska, on the campus of the University of Nebraska-Lincoln. Some 280 fluvial geomorphologists and sedimentologists from 30 countries were in attendance, and presented 240+ papers (oral and poster) in 14 technical sessions. Topical content spanned a broad spectrum, ranging from turbulence and sediment transport to sedimentary basin analysis, with a mix of modelling and empirical approaches, and fluvial deposits of latest Holocene to Archean age. Among the technical sessions of interest to GSA QG&G members were:

- Alluvial Architecture
- Alluvial and Tectonic System Interactions
- Dryland Rivers: Process and Product
- Flood-Plain Deposits in Muddy Rivers
- Flow, Sediment Transport, and Bedform Dynamics
- Fluvial System Response to Climate Change Through Time
- Fluvial Channel Systems: Modern and Ancient
- Overbank Systems: Modern and Ancient
- Response of Near-Coastal Fluvial Systems to Sea Level Change: Theoretical and Experimental Models vs. the Quaternary Record
- The Late Quaternary Rhine-Meuse System

A total of nine pre-, mid-, and post-conference field trips were held in association with the 7th ICFS. Field trips featuring modern processes and/or Quaternary fluvial deposits visited the Lower Mississippi alluvial valley and rivers of the Texas Gulf Coast, the Niobrara River in Nebraska, the Platte River in Nebraska, the Little Nemaha River in Nebraska and Kansas, the Rio Grande in New Mexico, and the St. Anthony Falls Experimental Facility at the University of Minnesota.

Mike Blum (University of Nebraska-Lincoln) served as convener and technical program chair, whereas Joe Mason (University of Nebraska-Lincoln) served as abstract coordinator and abstract volume editor. The 7th ICFS Abstract Volume is available in downloadable pdf format (large file) by contacting Mike Blum at <mblum1@unl.edu>. The proceedings volume will be edited by Mike Blum and Sue Marriott (University of the West of England), and published as an International Association of Sedimentologists Special Publication. Papers are

to be submitted for consideration by December 1, 2001, and publication is expected in mid 2003.

## UPCOMING MEETINGS

### 2002

- **British Geomorphological Research Group Annual Conference**

January 3-6, Queen's University, Belfast, Ireland

- **Association of American Geographers Annual Conference**

March 19-23, Los Angeles, California  
[www.aag.org](http://www.aag.org)

- **7th International Coastal Symposium**

March 25-29, University of Ulster, Northern Ireland  
 Themes include coastal change (Quaternary to historical), contemporary coastal processes, coastal engineering and management, and coastal ecosystems.  
[www.science.uslt.as.uk/ics2002](http://www.science.uslt.as.uk/ics2002)

- **9th International Symposium on the Interaction between Sediments and Water**

May 5-10, Banff Springs Hotel, Alberta, Canada  
 The symposium, held every three years, explores issues concerning aspects of freshwater and marine systems and their sediments.  
[www.wsc.monash.edu.au/iasws/ninthconference.html](http://www.wsc.monash.edu.au/iasws/ninthconference.html)

- **Geological Association of Canada and Canadian Geomorphological Research Group**

May 26-29, Saskatoon, Saskatchewan  
[www.usask.ca/geology/sask2002](http://www.usask.ca/geology/sask2002)

- **10th International Conference on Luminescence and Electron Spin Resonance Dating**

June 24-28, University of Nevada-Reno, Reno, Nevada  
[www.dri.edu/DEES/LED2002/led2002-home.html](http://www.dri.edu/DEES/LED2002/led2002-home.html)

- **International Conference on Wind Erosion and Aeolian Processes**

July 22-25, Texas Tech University, Lubbock, Texas  
 Session topics will include fundamental aeolian processes, instrumentation/measurement in the field and lab, modeling, coordinated field studies,

environmental impacts and erosion control, and landforms and aeolian paleoenvironments.  
[www.lbk.ars.usda.gov/wewc/icar5/icar5.html](http://www.lbk.ars.usda.gov/wewc/icar5/icar5.html)

• **17th World Congress of Soil Science**

August 14-21, Bangkok, Thailand

The main focal points of the symposium are to increase understanding of the genesis of arid and semi-arid soils—especially the formation of calcic, gypsic, and salt horizons; their use in paleoclimatic reconstructions and archaeological interpretations; find solutions to management problems; and to better understand their role in the carbon cycle.

• **International Symposium on the Structure, Function and Management of Fluvial Sedimentary Systems**

September 2-6, Alice Springs, Northern Territory, Australia

[www.lake.canberra.edu.au/~iahs2002](http://www.lake.canberra.edu.au/~iahs2002)

• **American Geophysical Union 2001 Fall Meeting**

December 10-14, Moscone Convention Center, San Francisco, California

[www.agu.org](http://www.agu.org)

• **Land Use Change and Geomorphic, Soil and Water Processes in Tropical Mountain Environments**

December 16-21, Quito, Ecuador

[www.kuleuven.ac.be/facdep/geo/fgk/pages/expgeom.htm](http://www.kuleuven.ac.be/facdep/geo/fgk/pages/expgeom.htm)

**2003**

• **INQUA 2003**

July 23-31, Reno Hilton Resort & Conference Center, Reno, Nevada

Please see the website for full details

[www.dri.edu/DEES/INQUA2003/inqua\\_home.htm](http://www.dri.edu/DEES/INQUA2003/inqua_home.htm)

For other listings, see the "Calendar" at [www.geotimes.org](http://www.geotimes.org)

## From the Editor

### DIVISION WEBSITE

When surfing the net, please take a look at the our division website. New features have been added, and I would like your comments. You can access it directly at <http://rock.geosociety.org/qgg>

### DIVISION NEWSLETTER

Hopefully, you noticed the new look of the newsletter. Suggestions are certainly welcomed. Also, consider a contribution (with photographs?) to an upcoming issue of the newsletter, e.g. , a short essay of interest to the membership, a description of your research facilities, details of an upcoming meeting/symposium, or research news.

As the recent blast e-mail indicated, the newsletter is available at our website. Those of you indicating that ready access to a downloadable form of the newsletter is sufficient will be removed from the mailing list for the paper copy. The savings will be deposited annually in the Mackin-Howard student award funds.

Bill Johnson