



Quaternary Geologist and Geomorphologist

NEWSLETTER OF THE QUATERNARY GEOLOGY AND GEOMORPHOLOGY DIVISION

Volume 30, Number 2

August 1990

RESULTS OF 1990 DIVISION ELECTION

990 Division members were mailed ballots and 292 valid ballots were returned to GSA headquarters. Division officers and Panel members elected for 1991 are:

OFFICERS:

Chairman	Richard F. Madole
First Vice-Chairman	David M. Mickelson
Second Vice-Chairman	Stephen G. Wells
Secretary	Deborah R. Harden

NEW PANEL MEMBERS (1990-1992): Carolyn H. Eyles
Leslie D. McFadden
Richard B. Waitt

NEW PANEL MEMBER (1990-1991; to complete Deborah Harden's term): L. David Carter

CURRENT OFFICERS:

Chairman	Kenneth L. Pierce
First Vice-Chairman	Richard F. Madole
Second Vice-Chairman	David M. Mickelson
Secretary	John E. Costa

CONTINUING PANEL MEMBERS (1989-1991):

William D. McCoy
John D. Vitek

CONTINUING PANEL MEMBERS (1988-1990):

Julie Brigham-Grette
Vance T. Holliday
Karen L. Prestegard

HOW TO HAVE INPUT TO THE DIVISION

1. Submit nominations for Division offices and awards.
2. Submit suggestions, gripes, etc., for consideration by the Division Management Board.
3. Submit contributions to the Division Newsletter.

Correspondence to the Division may be sent to our Division Secretary:

John E. Costa
Cascades Volcano Observatory
U.S. Geological Survey
5400 MacArthur Blvd.
Vancouver, WA 98661

After October send correspondence to our new Division Secretary:

Deborah R. Harden
Department of Geology
San Jose State University
San Jose, CA 95192-0102

Or you may write directly to the Division Chairman. The present Chairman is:

Kenneth L. Pierce
U.S. Geological Survey MS 913
Box 25046, Federal Center
Denver, CO 80225

Newsletters are mailed in February and August of each year. Members are encouraged to use their Division newsletter to communicate with other members. Deadline for the February Newsletter is January 15 and July 15 for the August Newsletter. Please send information to the Newsletter Editor at the following address:

William E. Scott
Cascades Volcano Observatory
U.S. Geological Survey
5400 MacArthur Blvd.
Vancouver, WA 98661
Phone (206) 696-7909
Telefax (206) 696-7866

1990 MACKIN GRANT WINNERS

The J. Hoover Mackin Grant is for outstanding student research and two grants for both Ph.D. and M.S. candidates were awarded in 1990. Each award is for \$250.

The Ph.D.-degree candidates selected are:

* **Kelin X. Whipple** of the Department of Geological Sciences, University of Washington, who is studying "The construction of alluvial-fan landforms by debris flows" under the supervision of Thomas Dunne, and

* **Grant A. Meyer** of the Department of Geology, University of New Mexico, who is studying "Holocene and modern geomorphic response to wildfires and climate change in northeastern Yellowstone National Park" under the supervision of Stephen G. Wells.

The M.S.-degree candidates selected are:

* **Robert B. Genau** of the Department of Geology, University of Delaware, who is studying "A shallow land-based seismic reflection approach to mapping Quaternary paleochannel(s) of the Susquehanna River system at Taylor's Island, Maryland," under the supervision of Susan McGeary and John Madsen, and

* **Martin Thomas Kammerer** of the Department of Geography, Arizona State University, who is studying "The use of heavy metal concentrations and concentration-ratios to cross-correlate alluvial deposits" under the supervision of W.L. Graf.

1990 MACKIN GRANT COMMITTEE

Applications for Mackin Grants are evaluated by a committee of seven composed of the Chairman and the First and Second Vice-Chairmen and four At-Large members. The four At-Large members are appointed by the Division Chairman and serve for one year.

Many thanks to the At-Large members of the Committee for 1990:

Alan D. Howard
William Locke
Kevin Scott
Cathy Whitlock

MACKIN GRANT APPLICATIONS FOR 1991

The deadline for receipt of applications for the Mackin Grant for research in geomorphology or Quaternary geology is February 15, 1991. Two awards will be given, one to a Ph.D. candidate and one to a Masters Degree candidate. Winners will be selected by April 15, 1991.

Application forms are available from the new Division Secretary, Deborah Harden, Department of Geology, San Jose State University, San Jose, CA 95192-0102.

RECIPIENTS OF THE MACKIN GRANT 1974-90

- 1974 **Louis D. Carter**, University of Southern California, Quaternary geology in Baja, California.
- 1975 **P. Thompson Davis**, University of Colorado, Cirque glacier fluctuations and lacustrine chronologies.
- 1976 Award date changed.
- 1977 **Daniel R. Muhs**, University of Colorado, Marine terraces-soil development, San Clemente Island, California.
- 1978 **Lisa Osterman**, University of Colorado, Quaternary geology of Frobisher Bay, Baffin Island.
- 1979 **Donna Marron**, University of California, Berkeley, Slope processes in Redwood National Park.
- 1980 **Susan L. Gawarecki**, Lehigh University, Origin of the Railroad Ridge diamicton.
- 1981 **Mary L. Gillam**, University of Colorado, Age and climate effects on soil development, Colorado and New Mexico.
- 1981 **Julie Brigham**, University of Colorado, Chronology of Pleistocene marine deposits in coastal Alaska.
- 1982 **Thomas F. Bullard**, University of New Mexico, Quaternary geomorphic evolution of a tributary to the Chaco River, northwestern New Mexico.
- 1982 **J. Steven Kite**, University of Wisconsin, Late-glacial and Holocene alluvial chronology, St. Johns drainage basin, northern Maine and southern New Brunswick and Quebec.
- 1983 **Jonathan M. Harbor**, University of Colorado, Chronology of Holocene events, geomorphic response, and eolian influx in alpine lakes in the Front Range, Colorado.
- 1983 **David S. Shafer**, University of Tennessee, Quaternary climatic change, landscape evolution, and paleoecologic history, southern Appalachians, western North Carolina.
- 1983 **Carolyn H. Eyles**, University of Toronto, Scarborough Bluffs, Lake Ontario basin, lithofacies codes and the model of diamict deposition below floating ice.
- 1984 **Jim E. O'Connor**, University of Arizona, Paleohydrology and hydraulics as interpreted from geologic evidence: Boulder Creek, Utah.
- 1984 **Leonard H. Thorleifson**, University of Colorado, The Quaternary stratigraphy of the Hudson Bay lowlands.
- 1985 **Karin A. Hoover**, University of Washington, The relation of fluvial processes to facies--The Holocene stratigraphy and sedimentology of the Wells Reservoir area, eastern Washington.
- 1985 **Peter E. Lea**, University of Colorado, Late-Quaternary stratigraphy and paleoenvironments of the Nushagak region, southwestern Alaska.
- 1986 **Mark A. Gonzales**, University of Wisconsin, Fluvial geomorphology, geochronology, and paleoclimatology of Paddock Creek, Little Missouri Badlands, southwestern North Dakota.
- 1986 **Christopher M. Menges**, University of New Mexico, Systematic and quantitative analyses of the landforms of a mountain front within a basin and range landscape in the northern Rio Grande rift near Taos, north-central New Mexico.
- 1986 **Dorothy I. Sack**, University of Utah, Geomorphology of alluvial fans in the Bonneville Basin, Utah--Modeling alluvial fan activity.
- 1987 **Kevin M. O'Dea**, Humboldt State University, Quaternary terrace formation and deformation on Yager Creek, Humboldt County, California.
- 1987 **Leal A.K. Mertes**, University of Washington, Morphology and construction of the Solimoes-Amazon River flood plain in Brazil.
- 1987 **Jim E. O'Connor**, University of Arizona, Hydraulics and sediment transport of Pleistocene Lake Bonneville flooding on the Snake River.
- 1988 **Jay S. Noller**, University of Colorado, History of El Nino in soil chronosequences of the Peruvian desert.
- 1988 **Donald T. Rodbell**, University of Colorado, Late Quaternary glacial and climatic history of the northern Peruvian Andes based on glacial geology, glaciolacustrine sedimentology, and soils.
- 1988 **Eric A. Oches**, University of Massachusetts, Late Quaternary

paleotemperature estimates of the northern Mississippi and Illinois River valleys, U.S.A.

- 1989 **Andrew Fox**, Cornell University, Glacial history of the central Andes Mountains.
- 1989 **Garrett Jackson**, University of Arizona, Tectonic geomorphology of the Toroweap Fault, western Grand Canyon, Arizona.
- 1990 **Grant A. Meyer**, University of New Mexico, Holocene and modern geomorphic response to wildfires and climate change in northeastern Yellowstone National Park.
- 1990 **Kelin X. Whipple**, University of Washington, The construction of alluvial-fan landforms by debris flows.
- 1990 **Robert B. Genau**, University of Delaware, A shallow land-based seismic reflection approach to mapping Quaternary paleochannel(s) of the Susquehanna River system at Taylor's Island, Maryland.
- 1990 **Martin Thomas Kammerer**, Arizona State University, The use of heavy metal concentrations and concentration-ratios to cross-correlate alluvial deposits.



1990 ROBERT K. FAHNESTOCK AWARD

Brian W. McARDell of the Department of Geography and Environmental Engineering, The Johns Hopkins University, is the recipient of the 1990 Robert K. Fahnestock Memorial Research Award. The award is given annually to the applicant of the most outstanding proposal to the Geological Society of America in the field of fluvial geomorphology.



1990 KIRK BRYAN AWARD

The winners of the 1990 Kirk Bryan Award are **Arthur S. Dyke** and **Victor K. Prest** of the Geological Survey of Canada for their monumental 1987 paper, **Late Wisconsinan and Holocene history of the Laurentide ice sheet**, which was published in *Géographie Physique et Quaternaire*, v. 41, no. 2, p. 237-263. The report discusses the paleoglaciology of the ice sheet and is accompanied by eleven paleogeographic maps and a summary ice retreat map that outline the history of advance, retreat, and readvances of the Laurentide ice sheet along with changes in proglacial drainage and relative sea-level oscillations. The authors' achievement in compilation, analysis, and interpretation will long remain a prominent contribution.

NOMINATIONS FOR THE KIRK BRYAN AWARD FOR 1991

Nominations for the Kirk Bryan Award for 1991 will be accepted until December 1, 1990. The Kirk Bryan Award is given for a paper or book published within the past five years. The work may be single or multi-authored. Nominations are made by writing a letter that identifies the work and provides a statement about its significance. Send nominations to the Division Secretary, Deborah Harden, Department of Geology, San Jose State University, San Jose, CA 95192-0102. You can also submit your nominations at the Division Business Meeting and Cocktail Party at the 1990 Annual Geological Society of America Meeting in Dallas.

RECIPIENTS OF THE KIRK BRYAN AWARD

- 1958 **Luna B. Leopold and Thomas J. Maddock, Jr.** (U.S. Geological Survey), The hydraulic geometry of stream channels and some physiographic implications: U.S. Geological Survey Professional Paper 252, 57 p., 1953.

- 1959 **Jack L. Hough** (University of Illinois), Geology of the Great Lakes: University of Illinois Press, 313 p., 1958.
- 1960 **John F. Nye** (University of Bristol), The distribution of stress and velocity in glaciers and ice sheets: Royal Society Academy, Proceedings A, v. 239, p. 113-133, 1957.
- 1961 **John T. Hack** (U.S. Geological Survey), Studies of longitudinal stream profiles in Virginia and Maryland: U.S. Geological Survey Professional Paper 294B, 97 p., 1957.
- 1962 **Anders Rapp** (University of Uppsala), Recent development of mountain slopes in Karkevagge and surroundings, northern Scandinavia: Geografiska Annaler, v. 42, p. 71-200, 1960.
- 1963 **Arthur H. Lachenbruch** (U.S. Geological Survey), Mechanics of thermal contraction cracks and ice-wedge polygons in permafrost: Geological Society of America Special Paper 70, 69 p., 1962.
- 1964 **Robert P. Sharp** (California Institute of Technology), Wind ripples: Journal of Geology, v. 71, p. 617-636, 1963.
- 1965 **Gerald M. Richmond** (U.S. Geological Survey), Quaternary stratigraphy of the La Sal Mountains, Utah: U.S. Geological Survey Professional Paper 324, 135 p., 1962.
- 1966 **Charles S. Denny** (U.S. Geological Survey), Alluvial fans in the Death Valley region: U.S. Geological Survey Professional Paper 466, 62 p., 1965.
- 1967 **Clyde A. Wahrhaftig** (University of California at Berkeley), Stepped topography of the southern Sierra Nevada, California: Geological Society of America Bulletin, v. 76, p. 1165-1190, 1965.
- 1968 **David M. Hopkins** (U.S. Geological Survey), Quaternary marine transgressions in Alaska, in *The Bering Land Bridge:* Stanford University Press, p. 47-90, 1967.
- 1969 **Ronald L. Shreve** (University of California at Los Angeles), The Blackhawk landslide: Geological Society of America Special Paper 108, 47 p., 1968.
- 1970 **Harold E. Malde** (U.S. Geological Survey), The catastrophic late Pleistocene Bonneville flood in the Snake River Plain, Idaho: U.S. Geological Survey Professional Paper 596, 52 p., 1968.
- 1971 **A. Lincoln Washburn** (University of Washington), Instrumental observations of mass wasting in the Mesters Vig district, northeast Greenland: Medd. Gronland, bd. 166, nr. 4, 1967; and Weathering, frost action, and patterned ground in the Mesters Vig district, northeast Greenland: Med. Gronland, bd. 166, nr. 4, 1969.
- 1972 **Dwight R. Crandell** (U.S. Geological Survey), Postglacial lahars from Mount Rainier volcano, Washington: U.S. Geological Survey Professional Paper 677, 75 p., 1971.
- 1973 **John T. Andrews** (University of Colorado), A geomorphological study of post-glacial uplift: London, Institute of British Geographers, Special Publication No. 2, 156 p., 1970.
- 1974 **Robert V. Ruhe** (Indiana University), Quaternary landscapes in Iowa: Iowa State University Press, 255 p., 1969.
- 1975 **James B. Benedict** (Colorado State University), Downslope soil movement in a Colorado alpine region--rates, processes and climatic significance: Arctic and Alpine Research, v. 2, p. 165-226, 1970.
- 1976 **Geoffrey S. Boulton** (University of East Anglia), Processes and patterns of glacial erosion: Binghamton, State University of New York, Proceedings of the 5th Geomorphology Symposium, 1974.
- 1977 **Michael A. Church** (University of British Columbia), Baffin Island sandurs: A study of Arctic fluvial processes: Geological Survey of Canada Bulletin 216, 208 p., 1972.
- 1978 **Richard L. Hay** (University of California at Berkeley), Geology of the

Olduvai Gorge--a study of sedimentation in a semiarid basin: Berkeley, University of California Press, 1976.

- 1979 **Stanley A. Schumm** (Colorado State University), The Fluvial System: New York, John Wiley and Sons, 338 p., 1977.
- 1980 **James A. Clark** (Cornell University), William E. Farrel (University of California at Berkeley), and W. Richard Peltier (University of Toronto), Global changes in postglacial sea level--A numerical calculation: Quaternary Research, v. 9, p. 265-287, 1978.
- 1981 **J. Ross Mackay** (University of British Columbia), Pingos of the Tuktoyaktuk Peninsula area, Northwest Territories: Geographic Physique et Quaternaire, v. 33, no. 1, p. 3-61, 1979.
- 1982 **Kenneth L. Pierce** (U.S. Geological Survey), History and dynamics of glaciation in the northern Yellowstone Park area: U.S. Geological Survey Professional Paper 729-F, 90 p., 1979.
- 1983 **Leland H. Gile, John W. Hawley, Robert B. Grossman** (U.S. Soil Conservation Service), Soils and Geomorphology in the Basin and Range Area of Southern New Mexico--Guidebook to the Desert Project: New Mexico Bureau of Mines and Mineral Resources Memoir 39, 222 p., 1981.
- 1984 **Steven M. Colman** (U.S. Geological Survey), Chemical weathering of basalts and andesites--Evidence from weathering rinds: U.S. Geological Survey Professional Paper 1246, 51 p., 1982.
- 1985 No award given
- 1986 **Ronald I. Dorn** (University of California at Berkeley) and Theodore M. Oberlander (University of California at Berkeley), Rock varnish: Progress in Physical Geography, v. 6, no. 3, p. 317-367, 1982.
- 1987 **Richard B. Waitt, Jr.** (U.S. Geological Survey), Case for periodic, colossal jokulhlaups from Pleistocene glacial Lake Missoula: Geological Society of America Bulletin, v. 96, p. 1271-1286, 1985.
- 1988 **Peter W. Birkeland** (University of Colorado), Soils and Geomorphology: New York, Oxford University Press, 372 p. 1984.
- 1989 **Kevin M. Scott** (U.S. Geological Survey), Origins, behavior, and sedimentology of lahars and lahar-runout flows in the Toutle-Cowlitz river system: U.S. Geological Survey Professional Paper 1447-A, 74 p., 1988.
- 1990 **Arthur S. Dyke and Victor K. Prest** (Geological Survey of Canada), Late Wisconsinan and Holocene history of the Laurentide ice sheet: Géographie Physique et Quaternaire, v. 41, no. 2, p. 237-263, 1987.

1990 DISTINGUISHED CAREER AWARD TO JOHN T. HACK

The Quaternary Geology and Geomorphology Division is pleased to announce that John T. Hack is the 1990 recipient of the Distinguished Career Award. The Award will be presented to Dr. Hack at the Division business meeting during the 1990 Annual Meeting in Dallas.

During his 40-year career with the U.S. Geological Survey, Hack synthesized a dynamic, interactive theory of landscape evolution based on his geomorphological research. His research has been notable for combining the scale of process with the scale of time and evolution of major landforms. John's classic papers have strongly influenced geomorphic thought during the past three to four decades: His early work in physiography and human geography in the southwestern United States, studies of longitudinal stream profiles in Virginia and Maryland, for which he received the Division's Kirk

Bryan Award in 1961, geology of caves, geomorphic evolution of areas in the Appalachian Mountains and its implication for ore deposits, tectonics, and forest ecology, and popularizing the concept of dynamic equilibrium in landscape development.

Hack joins the previous recipients of the Distinguished Career Award: Richard Goldthwait, Alexis Dreimanis, Lincoln Washburn, and Clyde Wahrhaftig.

NOMINATIONS FOR 1991 DISTINGUISHED CAREER AWARD

The Distinguished Career Award was established in 1985 to recognize Quaternary geologists and geomorphologists who have demonstrated excellence in their contributions to science. The recipient need not be a member of the Geological Society of America or the QG&G Division. Nominations will be accepted at any time during the year, but the deadline is April 15, 1991. Nominations should be sent to the Division Secretary, Deborah Harden, and require: (1) a supporting letter of nomination documenting the contributions of the nominee, (2) three letters or signatures of additional members supporting the nomination, (3) a resumé of the candidate (such as a photocopy from American Men and Women of Science), along with a bibliography of the nominee's most significant papers. The Division Chairman will appoint a committee to oversee the collection and completion of award nominations. The names of unsuccessful candidates proposed for the award will remain open without renomination for the following three years. Further consideration after this period will require renomination.



GLADYS W. COLE MEMORIAL RESEARCH AWARD APPLICATION FOR 1991

The Gladys W. Cole Memorial Research Award provides research support for investigations of the geomorphology of semiarid and arid terrains in the U.S. and Mexico. The amount of the award is \$5,000. It is given annually to a GSA Fellow between the ages of 35 and 60 who has published one or more significant papers on geomorphology. The application form is available from the Research Grants Administrator, Geological Society of America, P.O. Box 9140, Boulder, CO 80301; phone (303) 447-2020. Applications must be postmarked by **February 15, 1991**, to be eligible; the award is made in April.



1990 ANNUAL MEETING IN DALLAS SHORT COURSES

Ten short courses will be presented, of which several should be of interest to Division members.

- Site selection for critical facilities--the earth science perspective
 - Coastal land loss
 - Contaminant hydrogeology: Practical monitoring, protection, and cleanup
 - Creating geological applications with the Macintosh Hypercard
 - Metamorphic pressure-temperature-time paths
 - Phanerozoic plate tectonic reconstructions
 - Seismic expression of structural styles
 - Computer modeling of cyclic carbonate sequences
 - Practical tracing of ground water, with emphasis on karst terranes
 - Recent sediments of the northwest Gulf Coast region
- Substantial savings for those registering by September 28. See the August **GSA News & Information** for more information and registration forms.

**TRAVEL GRANT PROGRAM TO THE
XIII INQUA CONGRESS, BEIJING, 1991**

The U.S. National Committee for the International Union for Quaternary Research (USNC/INQUA) is expecting to obtain funding for its travel grant program for the XIII INQUA Congress in Beijing, China, August 2-9, 1991, and related pre- and post-meeting field excursions. This travel grant program is cosponsored by the American Geophysical Union. With cooperation of the American Quaternary Association (AMQUA), the USNC/INQUA seeks to ensure appropriate U.S. representation by providing 20 to 30 travel grants to enable Quaternary scientists residing in the United States (regardless of citizenship) to participate in the activities of the congress. Travel grants, which will cover only a portion of a participant's expenses (equivalent to airfare), are to be awarded competitively, in part on the evaluation of papers submitted for presentation at the congress, especially as they relate to the congress theme "**Global Environmental Changes and their Relation with Anthropogenic Activities.**" The Awards Subcommittee will give special consideration to those judged to benefit most by participation at this important international event.

Travel grant applications and detailed instructions are available from:

Pembroke J. Hart
USNC/INQUA-HA-460
National Academy of Sciences
2101 Constitution Avenue NW
Washington, DC 20418

(for applications by phone call (202) 334-3368 or 3306)

Deadlines: 1st: Note that abstracts for inclusion in the congress must be received in Beijing not later than 1 Dec 1990. Abstract forms will be included with the travel grant application materials, as well as information on registration for the congress. 2nd: The completed application for a travel grant, including an extended abstract of your paper and a one-page curriculum vitae, must be received in Washington by January 15, 1991.

Stipulated requirements: Grantees will be required to use U.S. flag carriers in accordance with government regulations and to file a meaningful trip report (emphasizing the benefits of attendance) within 60 days of the end of the congress.

Grant announcements: The committee aims to announce the travel awards by February 15, 1991. However, some awards may be made later because of cancellations or delays in availability of funding.

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**FRIENDS OF THE PLEISTOCENE
REMAINING 1990 FIELD TRIPS**

Pacific Cell: September 21-23, 1990

William Lettis (Geomatrix Consultants) is organizing a trip, Neotectonics of south-central coastal California, with co-leaders N. Tim Hall, Kathryn Hanson, Keith Kelson, John Wesling, Doug Clark, and Tom Rockwell. The trip will cover the area from San Simeon Bay to Point Sal and address problems in neotectonics and paleoseismicity, Quaternary stratigraphy and chronology, and evaluation of seismic hazards at the Diablo Canyon Power Plant and elsewhere. Registration is limited and the deadline was July 14; however, you still may be able to convince the organizer that the trip shouldn't go without you. For more details contact William Lettis or Deborah Ahrens, Geomatrix Consultants, Inc., One Market Plaza, 717 Spear Street Tower, San Francisco, CA 94105, or call (415) 957-9557 or (415) 284-5789.

Southeast Cell: November 16-18, 1990

Jim Quinlin (Uplands Research Laboratory) will lead a trip on the geomorphology of Mammoth Cave, Kentucky, including some time in the cave. For additional information, contact Steve Kite, Department of Geology and Geography, West Virginia University, Morgantown, WV 26506.

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FIRST REGIONAL CONFERENCE OF GEOMORPHOLOGY

The International Association of Geomorphologists of Turkey is organizing the First Regional Conference of Geomorphology to discuss the subject of humankind, its physical environment and natural disasters and the economic and social problems which may exist locally and internationally in relation to this subject. Panels, forums, posters, and field trips are being planned. The registration deadline is September 30, 1990, so if you haven't received the first information circular, find someone who has or contact:

Türkiye Jeomorfologlar Derneği P.K. 652
Kilizay
06425 Ankara-Turkey

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**G.K. GILBERT AWARD OF THE
ASSOCIATION OF AMERICAN GEOGRAPHERS**

Professor Donald L. Johnson, University of Illinois, was co-recipient with D. Watson-Stegner of the G.K. Gilbert Award for "Research on Soil Evolutionary Models" given by the Geomorphology Specialty Group of the Association of the American Geographers, at Toronto, April 19-22, 1990.

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GEOARCHAEOLOGY: AN INTERNATIONAL JOURNAL
Jack Donahue (University of Pittsburgh), Editor
Special Subscription Rate

Members of the Quaternary Geology and Geomorphology Division, as well as the Archaeological Geology Division, of the Geological Society of America qualify for the special group rate of \$48/yr (four issues). The regular rate is \$128/yr. The offer is for personal subscriptions only. Subscription orders with payment can be sent directly to: Subscription Department, John Wiley & Sons, Inc., P.O. Box 836, Bound Brook, NJ 08805. Please identify yourself as a member of the Quaternary Geology and Geomorphology Division of GSA.

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**RUTGERS UNIVERSITY ESTABLISHES A
QUATERNARY STUDIES GRADUATE PROGRAM**

Rutgers University, New Brunswick, New Jersey, has recently established a graduate program in Quaternary Studies. The Quaternary Studies Program is a certificate program for either M.S. or Ph.D. students. Students are admitted through one of several participating departments: Anthropology, Biology, Environmental Sciences, Geography, Geology, or Meteorology. Although a concentration of courses is taken in the admitting department, students take courses in other departments, participate in a multidisciplinary seminar, and conduct research in a Quaternary-related topic. A flyer and application form can be obtained from:

Gail M. Ashley, Director
Quaternary Studies Graduate Program
Department of Geological Sciences
Rutgers University
New Brunswick, NJ 08903

**Reconfirmation Announcement
LUBBOCK LAKE LANDMARK
50 Years of Discovery**

The Lubbock Lake Landmark Celebration Week has been rescheduled for October 14-21, 1990. Scholars from around the world will gather in Lubbock, Texas, to celebrate a half-century of investigation at the Landmark and to participate in an international symposium and a series of public lectures and panel discussions on topics germane to the Landmark record within an international perspective. This symposium will focus on the integration of the geological and biological sciences in archaeology as a driving force behind the current era of Quaternary research. A regional tour, with a field guidebook, of late Quaternary geological and archaeological localities will amplify the Lubbock Lake record. Other events of the Celebration Week include dedication of new public and research facilities, guided tours of the Landmark, and a Lubbock Lake Reunion for persons associated with the site.

For further information, contact:

Dr. Eileen Johnson
Director, Lubbock Lake Landmark
Museum of Texas Tech University
Lubbock, TX 79409
(806) 742-2481

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**FOUR-YEAR GRADUATE FELLOWSHIP IN GEOMORPHOLOGY
University of Maryland/Smithsonian Institution**

The Department of Geology, University of Maryland, and the National Air and Space Museum, Smithsonian Institution, invite applications for a graduate fellowship in geomorphology. One award is available, which will provide a stipend and tuition waiver for up to four years, subject to satisfactory progress leading to a Ph.D. degree.

It is expected that the successful candidate will engage in dissertation research that uses the facilities and staff expertise of both the Department of Geology, University of Maryland, and the Center for Earth and Planetary Studies, National Air and Space Museum, Smithsonian Institution. Candidates with interest in glacial geomorphology, arid lands processes, comparative planetary geomorphology, and the use of remote sensing to study earth surface processes are especially encouraged to apply. Both the University of Maryland and the Smithsonian Institution adhere to equal-opportunity practices.

Application materials, fellowship guidelines, and further information on facilities and faculty and staff research interests may be obtained by writing to: University of Maryland/Smithsonian Institution Fellowship, c/o Center for Earth and Planetary Studies, National Air and Space Museum, Washington, DC 20560.

Completed application materials, including a University of Maryland graduate school application and a 10-page or less research proposal, will be due February 1, 1991.

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KARST SCIENTISTS MEET IN IOWA

(Abstracted from report by Elizabeth K. Estes) The Eleventh Annual Meeting of the Friends of Karst occurred in Decorah, Iowa, from April 5-7, 1990. In attendance were approximately 60 scientists and students from the U.S., Canada, Hungary, China, and Brazil. Topics of discussion ranged from microclimatology in caves to cavern genesis and carbonate hydrogeology. A one-day field trip to the Big Spring basin highlighted current research activities of the Iowa Geological Survey. Abstracts from the meeting appear in *GEO2*, v. 17, no. 2-3, p. 54-87. *GEO2* is the official publication of the National Speleological Society's Cave Geology and Geography Section. Copies of this particular issue can be obtained from Dr. George Huppert, Department of Geography, University of Wisconsin-LaCrosse, LaCrosse, WI 54601.



The Geological Society of America

3300 Penrose Place • P.O. Box 9140 • Boulder, Colorado 80301

NON-PROFIT ORGANIZATION

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