



# Quaternary Geologist and Geomorphologist

NEWSLETTER OF THE QUATERNARY GEOLOGY AND GEOMORPHOLOGY DIVISION

Volume 31, Number 2

September 1991

## RESULTS OF 1991 DIVISION ELECTION

982 Division members were mailed ballots and 263 valid ballots were returned to GSA headquarters. Division officers and Panel members elected for 1992 are:

### OFFICERS:

Chair	David M. Mickelson
First Vice-Chair	Stephen G. Wells
Second Vice-Chair	Parker E. Calkin
Secretary (continuing)	Deborah R. Harden

### NEW PANEL MEMBERS: (1991-1993)

P. Thompson Davis  
Thomas W. Gardner  
William J. Wayne

### CURRENT OFFICERS:

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

### CONTINUING PANEL MEMBERS: (1990-1992)

Carolyn H. Eyles  
Leslie D. McFadden  
Richard B. Waitt

### CONTINUING PANEL MEMBERS: (1989-1991)

L. David Carter  
William D. McCoy  
John D. Vitek

## 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:

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

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

Richard F. Madole  
U.S. Geological Survey MS 966  
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

## 1991 MACKIN GRANT WINNERS

The J. Hoover Mackin Grant is for outstanding student research and two grants for Ph.D. candidates were awarded in 1991.

The candidates selected are:

\* **Eric Von McDonald** of the Department of Geology, University of New Mexico, who is studying "The influence of climate change and dust flux on soils developed on Quaternary deposits in arid and semi-arid environments" under the supervision of Les McFadden.

\* **Robert S. Young** of the Department of Geology, Duke University, who is studying "The impact of sea-level rise on the coastal wetlands of Albemarle and Pamlico Sounds, North Carolina: A study of wetland dynamics" under the supervision of Orrin Pilkey.

## MACKIN GRANT APPLICATIONS FOR 1992

The deadline for receipt of applications for the Mackin Grant for research in geomorphology or Quaternary geology is February 15, 1992. Two awards will be given; both M.S. (or M.A.) and Ph.D. candidates are eligible. Winners will be selected by April 15, 1992.

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

## CONTRIBUTE TO THE MACKIN GRANT FUND

Beginning this year, the fund that supports the Mackin Grant will be administered by the GSA Foundation. Therefore, you will be able to contribute to the fund when you renew your GSA membership or

by designating the Mackin Grant when you contribute to the GSA Foundation through the Century Challenge or Geostar. The hope is to enlarge the fund's principal so that the amount awarded annually, presently about \$1000, can be increased. Please give generously so that the Division will be able to better support deserving graduate students.

#### 1991 ROBERT K. FAHNESTOCK MEMORIAL RESEARCH AWARD

**David J. Topping** of the Department of Geological Sciences at the University of Washington, is the recipient of the Robert K. Fahnestock Memorial Research Award for 1991. 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. David's study, "Construction of a detailed flow and sediment-transport model for gravel transport on alluvial fans", is being supervised by J. Dungan Smith and Joanne Bourgeois.

#### 1991 KIRK BRYAN AWARD

The winner of the 1991 Kirk Bryan Award is **Milan J. Pavich** of the U.S. Geological Survey for his 1986 paper, **Processes and rates of saprolite production and erosion on a foliated granitic rock of the Virginia Piedmont**, which was published in *Rates of Chemical Weathering of Rocks*, edited by S.M. Colman and D.P. Dethier; New York, Academic Press, Inc.; pp. 552-590. In this paper, Pavich develops a model in which regolith chemistry and mineralogy, soil properties, water chemistry and discharge, slope erosion, and fluvial transport all combine to produce a physical and hydrologic balance. As these processes dominate the Piedmont landscape, the paper deals with nothing less than the complete geomorphic evolution of an entire drainage basin. The well-documented steady-state landscape produced by the interactions of these processes provides a perfect illustration of the concept of dynamic equilibrium.

#### NOMINATIONS FOR THE KIRK BRYAN AWARD FOR 1992

Nominations for the Kirk Bryan Award for 1992 will be accepted until December 1, 1991. 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.

#### RECIPIENTS OF THE KIRK BRYAN AWARD 1958-1991

- 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: Geographie 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.
- 1991 **Milan J. Pavich** (U.S. Geological Survey), Processes and rates of saprolite production and erosion on a foliated granitic rock of the Virginia Piedmont, in S.M. Colman and D.P. Dethier, eds., Rates of chemical weathering of rocks and minerals: New York, Academic Press, Inc., p. 552-590.

**1991 DISTINGUISHED CAREER AWARD WINNER--  
LUNA B. LEOPOLD**

The Quaternary Geology and Geomorphology Division is pleased to announce that Luna B. Leopold is the 1991 recipient of the Distinguished Career Award. The Award will be presented to Dr. Leopold at the Division business meeting during the 1991 Annual Meeting in San Diego.

Luna Leopold has had an extraordinary career as a research scientist, administrator, teacher, and environmental activist. (The following was taken from the many letters of colleagues supporting his nomination). His work at the U.S. Geological Survey was instrumental in stimulating the explosion of research during the 1950s and 1960s into process geomorphology. His papers and books have been used for decades in training geomorphologists, including his 1953 U.S. Geological Survey Professional Paper 252, co-authored with Tom Maddock, "The hydraulic geometry of stream channels and some physiographic implications", which won the QG&G Division's inaugural Kirk Bryan Award in 1958. His strong leadership as Chief Hydrologist of the Water Resources Division of the USGS from 1956-1966 resulted in a remarkably productive period of research. After going to the University of California, Berkeley, in 1972, Leopold advised a succession of graduate students and also brought earth-science perspectives to students in various disciplines of environmental management. As a member of the Board of Directors of the Sierra Club, president of the Geological Society of America, member of the National Academy of Science, and work with other organizations, Leopold has been a leader in bringing the study of earth-surface processes to issues involving conservation and resource

management. In short, his creativity, energy, and stimulating style have inspired, instructed, and guided a legion of combatants in geomorphology.

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

**NOMINATIONS FOR 1992 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, 1992. 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 Chair 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.

**1991 GLADYS W. COLE MEMORIAL RESEARCH AWARD**

Stephen G. Wells of the University of California, Riverside, is the recipient of the Gladys W. Cole Memorial Research Award for 1991. Steve's project is titled "Surficial Processes and Geomorphic Evolution of Desert Pavement Landscapes." The amount of the award for 1991 was \$6000.

**GLADYS W. COLE MEMORIAL RESEARCH AWARD  
APPLICATION FOR 1992**

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 \$6,000. 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, 1992**, to be eligible; the award is made in April.

**CHAIR ACKNOWLEDGES MEMBERS WHO SERVED ON  
QG&G DIVISION COMMITTEES DURING 1990-1991**

As Division Chair, Rich Madole thanks, on behalf of the QG&G membership, those members who gave generously of their time and energy in service to the Division during the past year. The Division is indebted to you for this service and time sacrificed from busy schedules. Rich is especially grateful to you for your willingness to say yes when asked for help.

**Division Panel:** L. David Carter, USGS-Anchorage; Carolyn H. Eyles, McMaster University; William D. McCoy, University of Massachusetts; Leslie D. McFadden, University of New Mexico; John D. Vittek, Oklahoma State University; and Richard B. Waitt, USGS-Vancouver.

**At-Large Mackin Grant Committee:** Thure E. Cerling, University of Utah; Peter C. Patton, Wesleyan University; Lisa E. Wells, University of California at Berkeley; and Ellen E. Wohl, Colorado State University.

**At-Large Member Cole Award Committee:** William L. Graf, Arizona State University.

**Reviewers, QG&G Symposium and Sessions, 1991 Annual Meeting:** Richard Hereford, USGS-Flagstaff; Craig R. Kochel, Bucknell University; Nicolas Lancaster, Desert Research Institute; June E. Mirecki, Memphis State University; Dale F. Ritter, Desert Research Institute; and David L. Weide, University of Nevada-Las Vegas.

**Committee on the Scientific Health of QG&G:** Kenneth L. Pierce (Convenor), USGS-Denver; Victor R. Baker (Chair), University of Arizona; Arthur L. Bloom, Cornell University; John E. Costa, USGS-Vancouver; William E. Dietrich, University of California-Berkeley; Waite R. Ostercamp, USGS-Denver; Milan J. Pavich, USGS-Reston; and Cathy Whitlock, University of Oregon.

**Division Nominating Committee:** Marie Morisawa (Chair), State University of New York-Binghamton; Leslie D. McFadden, University of New Mexico; John D. Vitek, Oklahoma State University.

## 1991 ANNUAL MEETING IN SAN DIEGO OCTOBER 21-24

### Division-Sponsored Program on Climatic Change

A Division-sponsored program on Quaternary climatic change will be held on October 23 and 24. The program consists of a symposium (S6) entitled "Quaternary climatic change in arid and semiarid western North America--Evidence from the Great Basin, Desert Southwest, and Great Plains," and a half-day session of oral presentations, as well as a poster session, organized around Theme Session (T5) entitled "Global warming and geologic evidence of aridification during late Quaternary time." The symposium will be held in Convention Center Room 6F on Wednesday morning, the oral presentations of Theme Session 5 will be in the same room on Wednesday afternoon, and the poster session will be in Hall B on Thursday morning.

The symposium consists of twelve 20-minute presentations that (1) examine differences and similarities in climatic controls and effects in the Great Basin, Desert Southwest, and Great Plains, (2) consider the responses of eolian and fluvial processes and systems to climatic change, and (3) review the regional geologic, biologic, and hydrologic records of response to climatic change. The twelve symposium papers are:

Bartlein, Patrick J., and Whitlock, Cathy--"Large-scale controls of the seasonal variations of temperature, precipitation and effective moisture in the Western United States."

Graf, William L.--"A Framework for analysis of fluvial responses to Quaternary climatic change in the Desert Southwest."

Lancaster, Nicholas--"Reaction of eolian geomorphic systems to climatic change."

McDowell, Patricia F., Bartlein, Patrick J., and Harrison, Sandy P.--"Environmental controls of playa status and processes, Western U.S."

Thompson, Robert S.--"Late Quaternary paleoclimatic variations in the deserts of western North America."

Bachhuber, Frederick W.--"Aridity and rate of climatic change in the American Southwest during the Wisconsin."

Wigand, Peter E., and Nowak, Cheryl L.--"Late Quaternary climates of northwestern Nevada as reflected in fossil woodrat middens of the last 30,000 years."

Gustavson, T.C., and Holliday, V.T.--"Tertiary and Quaternary stratigraphy and paleoclimate of the southern Great Plains, Texas and New Mexico."

Johnson, William C.--"Late Pleistocene and Holocene eolian stratigraphy of the central Great Plains and paleoclimatic reconstructions."

May, David W.--"Stratigraphic evidence of late-Quaternary alluviation, erosion, and high-magnitude flooding in valleys on the Great Plains."

Swinehart, James B.--"Holocene eolian dune activity in the Nebraska Sand Hills--More than skin deep."

Muhs, Daniel R.--"The potential response of Great Plains eolian sands to greenhouse warming and precipitation reduction."

Theme session T5 was proposed to complement the Division-sponsored symposium, and Dale F. Ritter and Nicholas Lancaster of the Desert Research Institute, Reno, Nevada, served as theme session advocates. Unlike the symposium, the focus of the theme session is not constrained geographically, and presentations are intended to be more site specific than the symposium presentations. The sixteen oral presentations of Theme Session 5 are:

Blum, Michael D.--"Responses of fluvial systems on the Edwards Plateau of west-central Texas to late Quaternary climatic change."

Knox, James C.--"Differences in magnitudes and frequencies of floods between dry and humid late Holocene climate episodes in the Upper Mississippi Valley."

Ely, Lisa L.--"Frequency of large floods in the southwestern U.S. in relation to late Holocene climatic variations."

Stokes, Stephen, Breed, Carol S., and Elder, Diana--"Holocene maintenance of Pleistocene sand dunes in northeastern Arizona: Climatic implications of quartz optical dating."

Lancaster, N., Wintle, A.G., Edwards, S.R., Duller, G., and Tchakerian, V.P.--"Chronology of eolian activity at Kelso Dunes: Evidence from luminescence dating of dune sediments."

Reeves, C.C., Jr., and Vincent, Judy A.--"New evidence for periodicity of late Quaternary aridification across the southern High Plains."

Warne, Andrew G., and Stanley, Daniel Jean--"Expanding dunes and salt flats and diminishing lagoons in the Nile delta, Egypt: Global warming-aridification, other natural processes, or man?"

Humphrey, John D., and Ferring, C. Reid--"Stable isotopic evidence for late Pleistocene/Holocene climate change, north-central Texas."

McDonald, Eric V., and McFadden, L.D.--"Impacts of Holocene aridification on the formation of calcic soils on the Providence Mountains piedmont, Mojave Desert, California."

Noller, Jay S.--"Quaternary history of El Niño and hyperaridity in the Peruvian Desert from soil chronosequence studies."

Davis, Owen K.--"Timing and magnitude of Holocene aridification estimated from the  $\Delta^{14}\text{C}$  chronology, Milankovitch cycles, and pollen surface samples."

Hill, Christopher L., and Wendorf, Fred--"Paleoclimatic dynamics in the eastern Sahara (North Africa) based on late Quaternary sediments containing Acheulian and Middle Paleolithic artifacts."

McKenzie, Judith A.--"Influence of past global warming on aridity in the Eastern Sahara as interpreted from late Quaternary lake deposits."

Negrini, Rob--"Dating late Pleistocene pluvial events and tephras by correlating paleomagnetic secular variation records from the western Great Basin, U.S.A."

Palacios-Fest, Manuel R., and Cohen, Andrew S.--"Paleoecologic record of climatic variation on Pleistocene pluvial Lake Chewaucan, Lake County, Oregon."

Kelts, Kerry--"An intercontinental network of lacustrine archives viewed through the Younger Dryas time window."

The seven poster presentations of Theme Session 5 are:

Gaylord, David R., and Stetler, Larry D.--"Paleoclimatic controls on late Pleistocene and Holocene sand dune and interdune deposits in southwestern and south-central Wyoming."

Slate, Janet L.--"Influence of Holocene climatic fluctuations on alluvial-fan deposition in Fish Lake Valley, Nevada-California."

Gill, Thomas E., and Gillette, Dale L.--"Owens Lake: A natural laboratory for aridification, playa desiccation, and desert dust."

Mayer, Larry, and Hess, A.E.--"Estimating paleoclimatic events on desert piedmonts in the southwestern United States using hydrologic analyses of floods routed through young volcanic flows."

MacKinnon, David J.--"Dust: Can satellite images be used to measure this harbinger of irreversible climatic change in the Southwest U.S. deserts?"

Zielinski, Gregory A., Fiacco, R. Joseph, and Palais, Julie M.--"A record of northern hemisphere moisture conditions since 800 A.D. based on microparticles in a Greenland ice core."

Perry, Thomas W.--"Climatic forcing and variability in precipitation and streamflow, southwestern interior of North America: Changes ending the Little Ice Age."

#### **Forum on the Scientific Health of Geomorphology and Quaternary Geology**

A forum on the "Scientific Health of Geomorphology and Quaternary Geology" will be held between **12:15 and 1:15 P.M. on October 23, 1991, in Convention Center Room 6F**, the same room used for the Division-sponsored symposium (S6) and Theme Session T5, during the annual meeting of the Society in San Diego. The principal purpose of the forum is to solicit input from the QG&G membership about possible solutions to problems facing our science (see discussion on the "Scientific Health of QG&G" later in Newsletter). The forum will include a description of the problems, the set of proposed solutions, and the plan of action developed by the Ad Hoc Committee on the Scientific Health of QG&G that was convened by Ken Pierce and chaired by Vic Baker in Denver, March 15-17, 1991.

The success of the forum will depend on membership participation. Members are urged to attend and to actively spread the word about the forum. This Newsletter is the only means available to advertise the event in advance. Also, times and space for convening the forum during the annual meeting of the Society are limited. In spite of limitations, the Division has asked to hold this forum because it is the best, probably only, opportunity to obtain direct input from the membership. Hence, QG&G members are urged to forego lunch in a restaurant on October 23 and, instead, to bring a brown bag lunch or food from one of the concession stands in the convention center to the QG&G Forum.

#### **Short Courses**

Several short courses of potential interest to Division members will be given at the national meeting in San Diego.

Quantitative sedimentary basin modeling (Oct. 19-20); faculty--Charles L. Angevine, Paul L. Heller, and Chris Paola.

Computer-aided illustration in geology (Oct. 20); faculty--Gary A. Novak.

Earthquakes and earthquake preparedness (Oct. 20); faculty--Kenneth L. Verosub.

Applications of radar remote sensing: Terrestrial and planetary (Oct. 25); faculty--Gerald G. Schaber and Tom G. Farr.

Sedimentary basin systems (Oct. 25-26); faculty--George deV. Klein.

#### **1992 NATIONAL GSA MEETING IN CINCINNATI Ideas for QG&G Symposium and Theme Sessions**

Chair-Elect Dave Mickelson is seeking nominations for the QG&G-sponsored symposium at the 1992 national meeting of the Geological Society of America in Cincinnati. He requests that you send your nominations to him prior to October 10, 1991, so that he can organize a discussion of the 1992 symposium at this year's Division business meeting in San Diego. Also, if you are planning on recommending a theme session in the fields of Quaternary geology or geomorphology to the Cincinnati Program Committee, please inform Dave so that he is aware of the themes being considered. Write to him at Department of Geology and Geophysics, Weeks Hall, University of Wisconsin, Madison, WI 53711; or phone (608) 262-7863.

#### **SCIENTIFIC HEALTH OF QG&G**

A succession of QG&G Division Chairs--Victor R. Baker, James C. Knox, and Kenneth L. Pierce--has drawn attention to trends that impact the status and scientific health of Quaternary geology and geomorphology. There is growing concern about how QG&G science is funded; the loss of faculty positions through retirement at major universities; the fragmentation of QG&G science by employing and(or) research-funding organizations; and the frustration with the lack of awareness and(or) appreciation by government, other scientists, and the public of the important contributions QG&G science can make to environmental problems facing our society. The causes of these concerns are complex and will require a sustained effort to address. As a first step toward that end, a seven-person ad-hoc committee, convened by Ken Pierce and chaired by Vic Baker, met at Ken and Linda Pierce's house near Denver on March 15-17, 1991. The other five members of this committee are Art Bloom, Waite Osterkamp, Bill Dietrich, and Milan Pavich. Committee members Cathy Whitlock and John Costa were unable to attend. The meeting resulted in a description of the problem and a set of proposed solutions comprising a plan of action. A full position paper is being prepared for the QG&G Management Board. The preliminary comments that follow are intended to stimulate input by

the broader membership prior to the next Board meeting in San Diego, at the October 21-24 GSA Annual Meeting. **On Wednesday, October 23, from 12:15-1:15 P.M., we will have a QG&G Forum to discuss these matters--please see notice in annual meeting information above.**

**The Problem.** The problem can be stated in many forms, each of which will generate various gut reactions from QG&G practitioners. In one form or another, however, most will agree that severe problems exist. The symptoms include: (1) the fact that prominent university geology departments are not replacing QG&G positions, (2) the competitive disadvantage of QG&G scientists for funding in contrast to "big money," high-profile activities (geophysics, geochemistry), (3) the obvious importance of QG&G science in the most pressing of science/society issues (global change, hazards) contrasted with its low scientific visibility in these areas in comparison to "hard" sciences (atmospheric physics), (4) the fragmentation of QG&G activities into diverse affiliations (geography, geology, geophysics) whose methodological paradigms often impede communication and collaboration, (5) the unsuccessful attempts by some to unify the field under some theme or another (systems theory, process studies, etc.) only to create increased fragmentation in a subject area that involves numerous specializations.

The committee concluded that the most serious concerns apply to geomorphology, although similar issues arise in varying degrees with regard to Quaternary geology. Geomorphology is highly interdisciplinary, deriving essential inputs from numerous other sciences. Its vitality depends on its diversity and on its connection to the complex reality of changing landscapes. However, this necessary diversity and focus on complexity can lead to difficulties in the present environment of scientific research. Overspecialization without adequate communication between specialties fragments the field. The lack of common meeting grounds, in which new ideas are boldly presented and freely criticized impedes the development of holistic approaches to understanding landscape evolution. Isolation of subspecialists leads, in some cases, to work that is perceived to be of low quality.

There are numerous exciting research developments in both geomorphology and Quaternary geology. Unprecedented opportunities exist for the material support of research through new, well-funded programs in global change, earth-system science, and natural-disaster reduction. The surficial Earth sciences have not had effective structures for communicating their importance to take advantage of these opportunities. It is interesting that much more organized geomorphological professional activities occur in other countries, particularly in Europe, where the field is considered a branch of geography. Geomorphology in the U.S. is unique and we think scientifically favored by having a long tradition as a part of the geological, geophysical, and hydrological sciences.

**The Opportunity.** "In crisis there is opportunity," Alfred North Whitehead said. The ad-hoc committee, representing a diversity of perspectives on QG&G, concluded that the time was opportune for action in three major areas. It should be noted that many topics besides these three were discussed at the Denver meeting. However, these three areas received unanimous support and therefore are deemed most likely to represent a common position by QG&G scientists.

1. A Position Statement. This might serve as the basis for a National Research Council study of Geomorphology and Landscape Dynamics research. National Research Council (NRC) studies influence funding agencies, university and government administrators, etc. The critique and discussion of such a draft position document in forums available to the entire QG&G community could be a healthy exercise in the progress towards an NRC study. The statement will be submitted to the October QG&G Management

Board meeting for preliminary approval and release to the membership.

2. A proposal to form an American Association of Geomorphologists. This topic was discussed at great length, and a rather special form of organization was envisioned. The full proposal, for membership response, is given in the next section.

3. A proposal to initiate a program on Global Studies of Drainage Basins: Landscape Dynamics on a Changing Earth. This program will illuminate dynamic change in landscapes in varying climatic, lithologic, tectonic, and ecological settings. Studies will elucidate modern processes and document past processes that are most relevant to sustaining the continued habitability of planet Earth. To the degree that current national and international global change initiatives fail to integrate these fundamental processes at the landscape scale, this program will serve as a "grass-roots" initiative to highlight the contribution of Quaternary geology and geomorphology to studies of future global change.

**A New Organization.** The committee believed that various problems in geomorphology could be overcome within a new organizational framework. The main functions of this new organization would be to disseminate information, publicize geomorphology, and respond to national and international initiatives. It will neither duplicate nor replace existing organizations or their activities. Please provide your opinions regarding this proposal to the QG&G Management Board.

#### **A Proposal to Form the American Geomorphological Association**

In contrast to the situation in many other countries, no national organization can claim to represent the field of geomorphology in the United States. The breadth, depth and vitality of our field is not appreciated even by those who profess it as their own, let alone by others outside the field. The United States is distinct from other countries in having geomorphology incorporated both in geological programs as well as geography departments, as it normally is elsewhere. Efforts by various individuals and groups to create opportunities for scientific discourse are numerous. They include: (1) participation in regular meetings of national organizations by the Quaternary Geology and Geomorphology Division of the Geological Society of America; the Erosion and Sedimentation subcommittee of the Hydrology Section of the American Geophysical Union; and the Geomorphology Specialty Group of the Association of American Geographers; (2) annual gatherings of independent groups; i.e., the Binghamton Symposia and the Gilbert Club (East and West Coast); and (3) informal gatherings of field groups; i.e., American Geomorphological Field Group and the Friends of the Pleistocene.

In order (1) to facilitate communication between these diverse groups and their specialties, (2) to gain recognition as being more than just part of something else, and (3) to provide a forum for community discussion of goals and opportunities under changing and uncertain funding, we propose the creation of a national organization. It could be called the American Geomorphological Association (AGA). This organization could initially be led by representatives from the active groups listed above. The association is not intended, at least initially, to become a separate major structure generating annual meetings, awards, and sponsoring a journal; i.e., it is not intended to perform all the usual functions of such associations. Instead, it is primarily intended to foster communication and better awareness of the field. Perhaps the best way to communicate is for the representative from each group to provide activity information that can be compiled by some willing soul and sent as a newsletter to all others.

The national organization would represent the United States in the International Association of Geomorphologists. It would also attempt to assert the importance of geomorphology in numerous

review groups sponsored by the federal government that address global change and earth-system science. We feel those groups would otherwise overlook the significance of geomorphology.

This national association might remain an umbrella organization, or transform into a more formal organization depending on emerging needs and demands.

#### FRIENDS OF THE PLEISTOCENE REMAINING 1991 FIELD TRIPS

**Rocky Mountain Cell: October 11-13, 1991**

Jack Oviatt, Dave Varnes, and Dick Van Horn will lead a trip to the Sevier Desert, near Delta, Utah, that will focus on the following topics related to the Quaternary geology of Lake Bonneville: Stratigraphy, sedimentary structures, isostatic rebound, fossils soils, and volcanic ash. Stops will take advantage of the excellent exposures in the bluffs along the Sevier River. Controversy and lively debate is guaranteed by the leaders. To receive the final announcement, send a self-addressed, stamped (the treasury is depleted) envelope to Dick Van Horn, U.S. Geological Survey, Box 25046, M.S. 966, Denver, CO 80225.

#### 23RD ANNUAL BINGHAMPTON GEOMORPHOLOGY SYMPOSIUM -- GEOMORPHIC SYSTEMS

The 23rd Binghampton Geomorphology Symposium will be held at Miami University, Oxford, OH, September 25-27, 1992 (tentative dates). The symposium topic is "Geomorphic Systems" and will explore the structure, function, and behavior of both generalized earth surface systems and specific geomorphic systems such as drainage basins, catenas, hillslopes, and shore zones. Recent developments in the analysis of earth surface processes and landforms as complex and nonlinear dynamical systems will be discussed. These contemporary topics will be linked to an historical overview of systems analysis in geomorphology since publication 30 years ago of U.S. Geological Survey Professional Papers 300 A-D, "Theoretical Papers in the Hydrologic and Geomorphic Sciences." For more information about serving as a speaker or presenting a poster, contact either of the organizers: Jonathan D. Phillips, Department of Geography and Planning, East Carolina University, Greenville, NC 27858-4353; Phone (919) 757-6082 or 444-3075; GEPHILLI @ ECUVM1.BITNET; and William H. Renwick, Department of Geography, Miami University, Oxford, OH 45056; Phone (512) 529-1362.

#### CIRCUMPOLAR ECOSYSTEMS IN WINTER II

The Churchill Northern Studies Centre (Box 610, Churchill, Manitoba, Canada ROB OEO; Phone 204-675-2307; FAX 204-675-2139) is organizing a symposium, Circumpolar Ecosystems in Winter II, to encourage sharing of information that relates to winter environments. This task will be carried out with poster and oral presentations as well as in a field workshop. Winter topics in atmospheric/earth sciences, biological sciences, and social sciences relating to aquatic/marine, alpine, boreal, forest-tundra, and tundra environments, and the adaptations of plants and animals within these environments, are welcome. Oral and poster presentations will take place February 14-17, 1992; the field workshop is scheduled for the preceding two days. Contact the centre as soon as possible for information about abstracts and registration.

#### INTERNATIONAL ASSOCIATION FOR GREAT LAKES RESEARCH

The Water Network, Quaternary Sciences Institute, and Department of Earth Sciences of the University of Waterloo is sponsoring a meeting of the International Association for Great Lakes Research

on May 31-June 4, 1992, at the University of Waterloo, Ontario, Canada N2L 3G1 (Phone 519-885-1211; FAX 519-746-7484). Dr. Marie Sanderson of the Water Network will be chairing the meeting, which will include the following special session topics: geomorphology of past and present Great Lakes shorelines (R. Davidson-Arnott, University of Guelph), neotectonics of the Great Lakes area (J. Wallach, Atomic Energy Control Board, Ottawa), pollution inputs to the Great Lakes (S. Frape, University of Waterloo), and Great Lakes geology (P. Karrow, University of Waterloo).

#### TRAVEL GRANT PROGRAM 29TH IGC IN KYOTO, JAPAN--1992

The Geological Society of America is accepting applications for the 29th International Geological Congress (IGC) Travel Grant Program. The 1992 IGC will be held in Kyoto, Japan, August 24-September 3.

This program was established as a final act of the Organizing Committee for the U.S.-hosted 28th IGC held in Washington, D.C., in July 1989. Surplus funds available at the conclusion of the 28th IGC were transferred to the GSA Foundation with the stipulation that income from the fund be used to support the attendance of young geoscientists to future IGCs, until such time as the United States again hosts the IGC. Travel grants will consist of economy airfare to Japan and prepayment of the registration fee.

To be eligible, an applicant must be a resident or citizen of the United States (includes students); must have a birth date after August 31, 1952; and must have submitted an abstract for inclusion in the program of the 29th IGC.

Official application forms are available from the Grants Coordinator, GSA Headquarters, P.O. Box 9140, Boulder, CO 80301. Along with the form, applicants must include a copy of the abstract that was submitted to the 29th IGC. Applications must be supported by two letters from current or recent supervisors. Students may use faculty members. **Qualifying applications and letters of support must be postmarked no later than October 31, 1991.** Applicants will be notified of results early in 1992.

#### GEOLOGICAL SOCIETY OF AMERICA

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