



GSA NEWS & INFORMATION

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The Geological Society of America

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GSA Short Course Program—We've Come A Long Way

by Edna Collis
GSA Short Course Coordinator

GSA's Professional Horizons short course programs have been attended by 1800 registrants since 1982. This year GSA is offering ten courses covering topics from "Creating Geological Applications with Macintosh HyperCard" to "Quantitative Interpretation of Joints and Faults," and serving an estimated 375 participants.

The GSA short course program began in 1982 at the New Orleans Annual Meeting when General Chairman Jules Braunstein initiated the program with two courses, "Remote Sensing," taught by Floyd Sabins, and "Deltas: Their Application to Oil and Gas and Coal Exploration," taught by Ram Saxena. The initial goals of the program were to provide an educational service for members and other meeting registrants, and to generate revenue to help underwrite the increasing expense of the Annual Meeting.

Between 1983 and 1985 the program grew slowly but consistently. It wasn't until 1985, however, when the GSA Council appointed Lee J. Suttner to head an ad hoc steering committee, with committee members Victor R. Baker and James F. Hays, that the program began to make significant strides. The diligence of these early organizers helped the program to grow substantially. Their foresight, combined with the support of GSA Executive Director F. Michael Wahl and Meetings Manager Sue S. Beggs, is the backbone of the successful program GSA has today.

The first official GSA standing Committee on Short Courses was appointed by the Council in 1987. Between 1987 and 1989 the committee members were chairman Elwood R. Brooks, Doris M. Curtis, David E. Dunn, George deV. Klein, Carroll Ann Hodges, and Rolfe S. Stanley. The charges to this committee are to (1) seek out and encourage appropriately qualified persons to lead short courses; (2) encourage GSA divisions and associated societies to cosponsor short courses; (3) review short course proposals for technical and scientific integrity; and (4) select proposals for the current year.

During the past seven years, GSA divisions and associated societies have steadily contributed to the quality and growth of the program. Division and associated society newsletters are one of the best sources for promoting the program. As an incentive, divisions and associated societies can receive up to 20% of any surplus funds generated from courses they cosponsor.

The invitation for short course proposals is always open. Proposals are due in December of the year preceding the proposed

year of presentation. Proposals are reviewed in January, and decision letters are sent in February. The current year's program is announced in the April issue of *GSA News & Information*.

The primary goal of the Professional Horizons program remains the same—to advance the science of geology by offering top-quality, timely short courses. Future goals may include taking certain courses "on-the-road" to GSA section meetings, offering member discounts, increasing cosponsorship with divisions and associated societies, and developing a short course notes series.

If you would like us to consider a short course on a specific topic, please let us know. Any information on experts to present the course will also be appreciated.

With the active participation of our members, the guidance of dedicated committees, growing support from our divisions and associated societies, and marketing guidance from the Meetings Department, we've come a long way.

Call for Short Course Proposals

1990 Annual Meeting

October 29–November 1—Dallas, Texas

1991 Annual Meeting

October 21–24—San Diego, California

Have you thought about giving a short course? The GSA Committee on Short Courses invites those interested in proposing a GSA-sponsored or cosponsored short course to contact GSA headquarters for proposal guidelines.

Short courses may be conducted in conjunction with all GSA annual or section meetings, but we are particularly interested in identifying short courses to be offered during the 1990 Annual Meeting in Dallas or the 1991 Annual Meeting in San Diego.

Proposals for the Dallas meeting must be received by **December 15, 1989**. Selection of courses will be made by February 1, 1990, leaving 8 months for preparing course manuals and making arrangements.

For proposal guidelines or further information contact:

Edna A. Collis
Short Course Coordinator
GSA Headquarters
(800) 472-1988

Letter to the Editor

I am writing to express delight and admiration for the article on the preparation of posters (by Carol Waite Connor) that you published in a recent issue [September 1989]. The article is well thought out, well executed, informative, and useful. The author and GSA are to be complimented.

Science is a complicated business, and not just in terms of research. Being a scientist implies activities such as writing grant proposals, giving talks, preparing posters, applying for jobs. We may be tempted to view such things as peripheral and of scarce importance. Reality teaches otherwise: they are essential. And yet, most of us receive little training or help in acquiring the necessary skills—we are expected to learn by osmosis, it would seem. The results are predictable and mostly unfortunate.

There is much need for "how to" information, and it seems to me that GSA could profitably take the lead in supplying it. One good medium would be articles in some widely distributed publications such as *News & Information*, replicated as pamphlets that could be purchased at low cost by interested individuals as well as geology departments and others whose business it is to train future generations of earth scientists.

Anyone for writing an article on how to organize a workshop or conference with a minimum of fuss and a maximum of effectiveness?

Ivo Lucchitta
U.S. Geological Survey
Flagstaff, Arizona

NOVEMBER 30 IS 1990 DUES DEADLINE

Last year, most GSA members remitted their annual dues payment before the November 30 deadline. As a result, they received their 1989 publications without delay. This year, the timing is again critical because section meeting *Abstracts with Programs* will be mailed early in 1990 to members who order them. If we do not receive your dues payment before November 30, you may not receive that much-needed *Abstracts with Programs* in time for the section meeting you're planning to attend. Remember, back orders take 6 to 8 weeks to reach you! Please use the 1990 dues and publications selection form mailed to you earlier. Basic dues for 1990 are \$35 for Members and Fellows and \$15 for Student Associates.

If you have any questions, please contact the Membership Services Department, P.O. Box 9140, Boulder, CO 80301; (303) 447-2020.

GSA Division Members Get Special Rate for *Geoarchaeology*

Members of GSA's Archaeological Geology and Quaternary Geology and Geomorphology divisions can subscribe to the journal *Geoarchaeology* at discount rates for 1990. Division members in the United States qualify for a rate of \$48 for the four issues of the 1990 volume of the journal; the regular rate is \$125. The special rate for division members outside the United States is \$68 (including air service delivery), compared to the regular rate of \$159. The special offer is for personal subscriptions only.

GSA members of the Archaeological Geology Division and the Quaternary Geology and Geomorphology Division who wish to subscribe to *Geoarchaeology* at the special rate may send their orders with payment to Subscription Department, John Wiley & Sons, Inc., P.O. Box 836, Bound Brook, NJ 08805; you must identify yourself as a member of one of the divisions named.

AIP Offers Reduced Subscription Rates

The American Institute of Physics (AIP) offers reduced-rate subscriptions for its own journals to *individual* members of Affiliated Societies, of which GSA is one. This offer is limited to one subscription per person to each journal. Following is a list of AIP-owned journals showing the member rates for 1990 which are available to individuals who are members of GSA and, for reference, the nonmember rates.

	Domestic rates		Foreign rates incl. Canada & Mexico	
	Member	Non-member	Member	Non-member
<i>Applied Physics Letters</i>	\$ 70.00	\$ 585.00	\$115.00	\$ 630.00
<i>Computers in Physics</i>	25.00	135.00	35.00	145.00
<i>Journal of Applied Physics</i>	115.00	950.00	165.00	1000.00
<i>The Journal of Chemical Physics</i>	135.00	1460.00	210.00	1535.00
<i>Journal of Mathematical Physics</i>	60.00	875.00	75.00	890.00
<i>Journal of Physical and Chemical Reference Data*</i>	70.00	325.00	85.00	340.00
<i>Physics of Fluids-A</i>	45.00	—	65.00	—
<i>Physics of Fluids-B</i>	45.00	—	65.00	—
<i>Physics of Fluids—Both</i>	75.00	830.00	115.00	870.00
<i>Physics Today</i>	30.00	85.00	45.00	100.00
<i>Review of Scientific Instruments</i>	45.00	455.00	65.00	475.00
<i>Current Physics Index</i>	90.00	490.00	115.00	515.00
<i>General Physics Advance Abstracts</i>	15.00	180.00	30.00	195.00

*Nonmember subscriptions are handled by the American Chemical Society in Columbus, Ohio.

Send subscription orders with remittances directly to the American Institute of Physics, 335 East 45th St., New York, NY 10017-3483. Include a statement indicating that you are a member of GSA.

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Subscriptions for 1989 calendar year: **Society Members:** GSA News & Information is provided as part of membership dues. Contact the Membership Department at (303) 447-2020 for membership requirements. **Nonmembers:** \$24.00

for United States, Canada, and Mexico; \$34.00 elsewhere. **Ordering:** Nonmember subscriptions may be ordered through the Subscriptions Department, P.O. Box 9140, Boulder, CO 80301, telephone (303) 447-2020. **Claims:** Nonmember claims for nonreceipt or damaged copies should be made to the Publication Sales Department. Member claims should be made to the Membership Department. Claims are honored for one year.

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GSA in Education

by Allison R. (Pete) Palmer

Scientific Literacy; What Is It, and Why Do We Need It?

At the International Geological Congress in July, E-An Zen presented a talk bearing this title at the Symposium on Precollege Earth Science Education. The essence of the talk is extremely relevant to current discussions of the direction that the teaching of science should take in the public schools. Zen prepared the following summary for this column. Where do you stand on this issue? Let me know.

“Scientific literacy” has been a widely endorsed reason for improving pre-university science education in our public schools. But what is scientific literacy, and why is it important?

To be literate scientifically, a person should understand that scientific concepts are constructed out of observations of the world around us. One must realize that the measurements are always subject to human errors and that our understanding is likely incomplete. Further, one must realize that a viable hypothesis proposed to interpret the data must be falsifiable. This insistence on falsifiability leads to a vital sense of tentativeness and humility in science, and contrasts scientific methods with methods of understanding based on faith, however logically well-knit the inferences. Both approaches are valid in their own spheres, but they address different human needs. Science is neutral on the issue of God, or gods, though the nature of scientific inquiry can brook no arbitrary intercession by translogical explanations for the physical universe. An appreciation of what science is and isn't, or what it can be and cannot be, is surely an essential element of literacy.

To be literate scientifically, a person must command certain facts and general concepts about our universe. What should these facts be? I would venture that even though a student need not know how to derive the Laws of Thermodynamics, (s)he should know why we cannot gain net useful energy from a fuel synthesized out of carbon dioxide and water; to know that would also permit her or him to appreciate that we cannot recycle our resources indefinitely without paying an increasingly higher penalty in energy consumption. (S)he should know that Earth revolves around the sun, not the other way round; and that Earth has a history measured in thousands of millions of years, as well as the basis for that conclusion. (S)he should know that genetic characteristics of living organisms are encoded in DNA; (s)he should know why biological diversity is beneficial, and how human action is diminishing this diversity as well as affecting our global environment in other ways; and (s)he should know other basic items like these.

We need some vocabulary in order to better *enjoy* the universe we live in, to better marvel at its workings and its mysteries, and to communicate with each other our perceptions and physical experience in an objective frame so that this experience can be understood, evaluated, and perhaps generalized. Appreciation of science and thinking of it as fun are the beginnings of literacy.

Why should the public have to be scientifically literate? Some shared scientific background is part of a common cultural base that binds civilized people together. I already mentioned appreciation of science, to help promote our collective intellectual vitality. For practical reasons, too, scientific literacy must not be restricted to an

elite group. For example, when the need to dispose of trash arises, the decision makers, the opinion makers, and the trash makers alike must be aware what the disposal of the trash means in terms of energy needs, in terms of its load on the environment, and in terms of its aesthetic and social costs and benefits. Those who will be making these decisions in 15 or 20 years are today's school students; because we cannot predict who will need this knowledge, we must cast our net wide and expose as many people as possible to the basics of scientific methods and knowledge.

We have recently become more aware of the ethical aspects of scientific inquiry. We now realize that scientists, being human, are not only fallible but too often temptable. We have discovered that scientific research organizations sometimes fail to police themselves. Some understanding of how scientists work could give society a better grasp of the ethical issues in science, issues that impinge on integrity in research, on the social responsibility of researchers, on freedom to pursue and to share knowledge, and ultimately on the role of the State in scientific endeavors.

Literacy should mean that a student can cope intelligently with the demands of society. The world-wide population explosion and concomitant use of resources impose stresses on our social structure as well as on our natural environment: not just fuel and minerals, not just soil and water are being depleted; our social resilience and national policy freedom are also being tested. Our citizens and leaders must understand the Earth system well enough to use our natural resources with wisdom and to avoid its hazards with knowledge. They need to know the limits of nonmalignant exploitation, and to learn to be good guests and walk lightly upon Earth. They must know that resource and environmental problems are global in scope, and their solutions must ensure justice and equity for all; these are global because Earth is finite and because nature's response to man's exploitations and abuses knows no political boundary, and its consequences are shared by all living creatures great and small.

E-an Zen

Geological Misconceptions

At the AGI Red Lodge Conference in August, where a draft of a curriculum framework for the teaching of earth science in grades K-12 was developed by a group of about 30 teachers and science advisors, we had informal discussions about misperceptions that get into the minds of young students through the ways that we phrase information. Think of how the young mind views the motion of Earth relative to the sun when we speak of the sun rising and setting; think of the mental picture the public may have of glaciers retreating. If we ask perceptive questions, we often discover that our audiences have drawn strange conclusions from what we understand clearly. The GSA Education Committee is interested in the range of geological misconceptions the public has. Please send examples from your experience that might serve as material for future columns to A. R. (Pete) Palmer, GSA, P.O. Box 9140, Boulder, CO 80301.



DNAG NEWS

by Allison R. (Pete) Palmer

Progress Continues

As of this writing, just after Labor Day, there is continued action on several fronts toward a 1990 windup of the DNAG Project.

DNAG Volume N, *The Eastern Pacific Region and Hawaii*: The text for this volume is through blue-line (final proof) and will be printed as soon as we know that the last of the plates is under control. All plates are proofed and being readied for printing before the end of September.

Volume F-2, *Appalachian-Ouachita Orogen in the United States*: Paging for this volume is completed and the pages will go to the printer in September. The final five plates are all at the proof stage or being readied for printing, and our schedule of a book in hand by Christmas still seems OK.

Volume L, *The Arctic Ocean Region* and Volume O-1, *Surface Water Hydrology*: These are still hung on Art Grantz and Reds Wolman. If something doesn't pop within the next couple of weeks, these books won't be published until early 1990.

Volume H, *The Caribbean Region*: This is still on the schedule reported last month. It may very well leapfrog the preceding two volumes if there are no major delays in production of the last couple of plates.

Centennial Special Volume, *Archaeological Geology of North America*: This is moving steadily through the production process. It should be an early 1990 book.

Thermal Aspects Map

All materials necessary to begin production of the Thermal Aspects Map of North America have been received. This will require some color-separation work, but it is now under control and will be a 1990 product. Thanks to Dave Blackwell and his colleagues for the work that went into assembly of these data.

Progress on Other Volumes

There are still 12 books, two maps, and seven transects out there to be wrapped up in 1990. Most of these are far along toward completion, and fires are being applied this fall to the soles of the feet of the final set of laggards.

GSA Grants Support Research

by June Forstrom
Research Grants Administrator

General Grants

The purpose of the general research grants program is to provide partial support of master's and doctoral thesis research for graduate students at universities in the United States, Canada, Mexico, and Central America. Applicants need not be members of GSA. (Applicants for the Cole Award, however, must be GSA Fellows; see below.)

To apply for one of these grants, you must fill out an application form, available from GSA Campus Representatives, from geology departments in the United States and Canada, or from GSA headquarters (Research Grants Administrator, Geological Society of America, P.O. Box 9140, Boulder, CO 80301). Evaluations from two faculty members are required for master's and doctoral candidates. The deadline for applications for the 1990 research grants program is February 15, 1990. Applications must be submitted on 1990 forms. The GSA Committee on Research Grants evaluates all applications and at its early spring meeting at GSA headquarters chooses those to be funded. Grants are awarded in April. In 1989 210 grants were awarded. Grants ranged from \$200 to \$1700; the average amount awarded was \$860.

Specialized Grants

The Robert K. Fahnestock Award is a grant given to the applicant with the best proposal in sediment transport or related aspects of fluvial geomorphology.

The Harold T. Stearns Fellowship Award is earmarked for research on aspects of the geology of the Pacific islands and the circum-Pacific region.

You can indicate on the general research grants application form that you also want to be considered for the Fahnestock or Stearns grants. The application deadline is February 15.

The first John T. Dillon Alaska Research Award was awarded in 1989. The aim of this newly established grant is to support scientific research that addresses earth science problems particular to Alaska. Special consideration may be given to students whose proposals are (1) field-based studies dealing with the structural and tectonic development of Alaska and (2) studies that include some aspect of geochronology (either paleontologic or radiometric) to provide new age control for significant rock units in Alaska.

(continued on p. 309)

In Memoriam

Zena Hunter Andrews
Boulder, Colorado
August 2, 1989

Ralph E. Grim
Urbana, Illinois
August 19, 1989

James Evensen
Thousand Oaks, California
December 24, 1988

Anna Jespersen
Lethbridge, Alberta
July 15, 1989

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Former GSA Executive Director Dies

Edwin B. Eckel, executive director of GSA from 1970 to 1974, died on September 28, 1989, in Denver. He was 83. A memorial service was held on October 2 in Denver. A complete obituary will be published in *GSA News & Information*.

GSA Grants (continued from p. 308)

Candidates with other Alaskan earth-science research objectives will also be considered. Awardees are selected by the Committee on Research Grants from applicants to the general research grants program. Applicants must be master's or doctoral candidates. Applications for this grant are available from GSA headquarters (address under General Grants) and for 1990 must be submitted by February 15, 1990.

Division Grants

The Coal Geology Division of GSA and the Symposium on the Geology of Rocky Mountain Coal jointly sponsor scholarships for research on coal in the Rocky Mountain and northern Great Plains coal provinces. Applicants must be master's or doctoral candidates doing research on coal in Arizona, Alberta, British Columbia, Colorado, Idaho, Montana, New Mexico, North Dakota, Utah, Saskatchewan, South Dakota, or Wyoming. However, the college or university where applicants are doing the work need not be in those states or provinces. Applications for Rocky Mountain Coal Scholarships can be obtained from GSA (address under General Grants) or from Gary B. Glass, c/o Geological Survey of Wyoming, Box 3008, University Station, Laramie, WY 82071. The deadline for 1990 applications is February 1, 1990.

The Coal Geology Division awarded its first Antoinette Lierman Medlin Scholarship Award in 1988. This grant is awarded annually to the applicant who submits the best proposal of a research project by a full-time graduate or undergraduate student in the field of coal geology. Detailed guidelines are available from the chairman of the Coal Geology Division Awards Committee: Robert B. Finkelman, U.S. Geological Survey, 956 National Center, Reston, VA 22092. The deadline for 1990 applications is February 15, 1990.

The Engineering Geology Division established an Anniversary Award Fund in 1987 in commemoration of the 40th anniversary of its founding in 1947. The fund is to support an annual grant for research in engineering geology through the GSA Research Grants Program. The Management Board of the Division is still considering a mechanism and criteria for granting this award. The fund is managed through the GSA Foundation; contributions to the fund may be sent to the GSA Foundation, P.O. Box 9140, Boulder, CO 80301. Checks should be made payable to the GSA Foundation and should be earmarked for the Anniversary Award Fund of the Engineering Geology Division.

The Geophysics Division awarded its first Allan V. Cox Student Research Award for outstanding student research in 1988. This grant is awarded annually to an applicant for the general GSA research grants who is working in the field of geophysics. Applicants must be master's or doctoral candidates. Applications for this grant are available from GSA headquarters (address under General Grants) and for 1990 must be submitted by February 15, 1990.

The Hydrogeology Division Graduate Research Grant was established by the Management Board and the membership of the Hydrogeology Division during the 1988 Annual Meeting in Denver. A fund to support the annual grant for outstanding student research in the field of hydrogeology has been established through the GSA Foundation. This grant will be awarded annually to an applicant for the general GSA research grants who is working in the field of hydrogeology. Applicants must be master's or doctoral candidates. Applications for this grant are available from GSA headquarters (address under General Grants) and for 1990 must be submitted by February 15, 1990.

GSA's Quaternary Geology and Geomorphology Division established its J. Hoover Mackin Research Grants in 1974 to

support graduate student research on Quaternary geology or geomorphology. Applications for this grant are available from the secretary of the division, John E. Costa, U.S. Geological Survey, Cascades Volcano Observatory, 5400 MacArthur Blvd., Vancouver, WA 98661. The deadline for applications for 1990 is February 15, 1990. Grant awardees are announced in April.

The Sedimentary Geology Division awarded its first grant for outstanding student research in 1987. This grant is awarded annually to an applicant for the general GSA research grants who is working in the field of sedimentary geology and stratigraphy. Applicants must be master's or doctoral candidates. Applications for this grant are available from GSA headquarters (address under General Grants) and for 1990 must be submitted by February 15, 1990.

The Structural Geology and Tectonics Division awarded its first grant for outstanding student research in 1986. This grant is awarded annually to an applicant for the general GSA research grants who is working on structural geology or tectonics. Applicants must be master's or doctoral candidates. Applications for this grant are available from GSA headquarters (address under General Grants) and for 1990 must be submitted by February 15, 1990.

Four GSA divisions—Archaeological Geology, History of Geology, International, and Planetary Geology—do not currently award grants for student research.

Section Grants

Recipients for research grants from the North-Central Section are selected from applicants to the general research grants program. Eligibility is restricted to graduate students attending a college or university within the geographic area of the North-Central Section. Applications are available from GSA headquarters; see address under General Grants. Deadline for 1990 applications is February 15, 1990.

The South-Central Section awards grants to students attending a college or university in the South-Central Section geographic area. Graduate student recipients are selected from applicants for the general research grants program (applications available from GSA headquarters; see address under General Grants). Deadline for 1990 applications is February 15, 1990. Applications for undergraduate student grants are available from Rena M. Bonem, Department of Geology, Baylor University, Waco, TX 76798. Undergraduate student recipients are selected by the Management Board of the South-Central Section. The deadline for undergraduate student applications is October 15; the grants will be awarded in late December.

The Southeastern Section awards grants for graduate and undergraduate research to GSA Student Associates who are attending colleges and universities within the geographical boundaries of the Southeastern Section. Application forms can be obtained from the Southeastern Section secretary, Michael J. Neilson, Department of Geology, University of Alabama, Birmingham, AL 35294. The deadline for 1990 applications is March 1, 1990. The grants will be awarded in late April.

Grants for Postdoctoral Research

The Gladys W. Cole Memorial Research Award is given for investigation of the geomorphology of semiarid and arid terrains in the United States and Mexico. The amount of the award in 1990 will be \$5000. Applicants must be GSA Fellows between 30 and 65 years old who have published one or more significant papers on geomorphology. The application form for this grant is different from the one for the general grants; it is also available from GSA headquarters (address above).

See p. 316 for more information

Geological Society of America



CONGRESSIONAL SCIENCE FELLOWSHIP 1990-1991

The Geological Society of America invites applications for the 1990-1991 Congressional Science Fellowship. The Fellow selected will spend a year (September 1990-August 1991) in the office of an individual member of Congress or a congressional committee advising on a wide range of scientific issues as they pertain to public questions. Guided by the American Association for the Advancement of Science, the Fellow selects a congressional staff position in which he or she can work on major legislative issues.

CRITERIA

The program is aimed at highly qualified earth scientists in early or mid-career. Candidates should have exceptional competence in some area of the earth sciences, cognizance of a broad range of matters outside the Fellow's particular area, and a strong interest in working on a range of public policy problems.

AWARD

The GSA Congressional Science Fellowship carries with it a \$35,000 stipend and a limited relocation and travel allowance. The fellowship is funded by GSA and by a grant from the U.S. Geological Survey. (Employees of the USGS are ineligible to apply for this fellowship.)

TO APPLY

Procedures for application and detailed requirements are available in the geology departments of most colleges and universities in the United States or upon request from

Executive Director
Geological Society of America
P.O. Box 9140
Boulder, Colorado 80301



Deadline for receipt of all application materials is March 15, 1990

A Congressional Fellow's Year on the Hill

by Beth Robinson

1988-1989 GSA Congressional Science Fellow

Immediately after a three-week orientation for incoming Congressional Fellows in September 1988, a two- to three-week placement period began, during which I interviewed in about 14 offices. During September in election years, the committees are in full swing, whereas the members' offices are generally quieter. Consequently, it is more difficult to get an interview with a committee than in a member's office. The number of placement options was about half that of other years. I had offers from three offices: Senator Al Gore (D—Tennessee), Representative Louise Slaughter (D—New York), and Representative Richard Gephardt (D—Missouri). Because I wanted an education in politics, I chose Gephardt's office: his political style commands respect, and he is adept at gauging the political forces in the House.

Activity as a Science Fellow

I was brought on to be a legislative assistant, to cover environment and science and technology issues. From September to January, Gephardt was campaigning for Michael Dukakis. During this period, I prepared materials for Gephardt's speeches abroad and worked on an environmental agenda for his return to Congress. From January to May, Gephardt was back in Congress full time, and we developed the beginnings of an environmental agenda and wrote two bills and a speech. From May on, Gephardt ran in and won the Majority Leader's race; his orientation toward the issues became broader, and we started on a new agenda. Throughout the year, I followed developments in my issue areas, keeping Gephardt informed about important changes, developing the background and contacts for bills and speeches, and tracking votes on the floor. Some of the projects for which I was responsible were the development and introduction of the Municipal Solid Waste Reduction Act; a May 10 speech to the AGU, wherein Gephardt presented his global warming agenda; the development of a Congressional investigation of the Agency for Toxic Substances and Disease Registry, a Superfund program; development of a Resource, Conservation, and Recovery Act amendment, dealing with the rights of victims of hazardous waste at RCRA sites; and the monitoring of the cleanup at the Times Beach, Missouri, dioxin site.

Lessons Learned

One of the most useful things that I learned on the Hill was how hard it is to get good legislation passed. The process is tortuous and long. The bill must be written, introduced, reviewed by the administration, taken up in subcommittee (with hearings) sent to full committee (after a series of "markup" sessions to revise the bill), taken up by full committee (with perhaps more hearings), sent to the floor (after more markups), reviewed by the Rules Committee, taken up by the chamber (the House or Senate), and then voted on. If it passes, it will have to go through the same processes in the other chamber. If differences exist between the House and Senate versions, a conference committee must also be called to reconcile the differences, and the final bill must be passed again by both houses. It must then be written in proper form and sent to the President for his signature. If he vetoes, the bill is sent back for



further veto override procedures and votes. At each of these steps, input is made to the bill, sometimes improving it dramatically. Scientists should be encouraged to get involved in these steps; committee hearings are an excellent place to state your opinion about a bill. Speaking to a member of Congress directly is another good route. Staff members will often welcome helpful suggestions. Events can sometimes move bills onto a fast track; changes must then be brief and opinions crystal clear.

Another lesson I learned is the value of finding the level at which to speak to your audience: I have seen some scientists talk over the heads of the audience on technical matters, then talk to them as if they were school children about what the politicians know best—the legislation! Points can be lost through this kind of misjudgment of an audience.

I have also seen the value of lobbyists on the Hill. At present, most of the technical expertise on the Hill lies with them. Good lobbyists realize that knowledge is power, and try to give all the facts, especially if they are convinced that the facts back them up; conversely, there are lobbyists who give a warped picture of the facts to substantiate their cause. Congress needs scientists on a day-to-day basis to sort through the good and bad technical analyses that are used to substantiate legislation. Congress has the means to do this with the Congressional Research Service and the Office of Technology Assessment. However, at times the offices do not know when to question what they are receiving from the outside, and an in-house scientist could make a big difference.

As the technical basis of many issues becomes more complex, scientists can make a larger contribution in the legislative arena. On the basis of what I have seen on the Hill, I encourage more scientists to get involved with the issues they know about. Scientists should make sure that Congress is being provided with the best information possible.

Post-Fellowship Plans

While Gephardt was running for Majority Leader, I took advantage of the lull in the workload to look for a job after the fellowship. I found a position at the Office of Technology Assessment, in the science policy group. It is a blend of academic and congressional work I think I will enjoy.



It's Now or Later for Charitable Gifts

In Foundation News last month we noted that charitable gifts are one of the few remaining tax deductions available to individuals. The tax benefits of contributions to the GSA Foundation and similar institutions have successfully withstood the fierce barrage launched by an army of reform-minded legislators and tax architects. The additional good news is that the structure by which philanthropy functions has been little changed by the onslaught. In a nutshell, you can make a gift of cash or property now and receive a tax deduction now, or you can make a gift that passes fully to the Foundation later, yet still realize tax benefits now.

Charitable giving can be broadly classified into two categories: present gifts and deferred gifts. Present gifts are as one would expect from the term: the donor transfers possession and use of the gift to the donee at the time the gift is made. In the case of deferred giving, the donor also makes a current gift, but it is a gift of a future interest. Understandably, such a gift brings with it certain complexities. However, the benefits can be of long-term importance to both the donor and the donee.

Planned or deferred gifts provide opportunities to design an estate or financial plan from a variety of structuring options. In addition to an immediate tax deduction, such gifts can provide life income, continued use of the gift property, and the avoidance of capital gains taxes. While clearly a more sophisticated charitable contribution technique than the immediate outright gift, deferred giving is a sort of philanthropic alchemy, allowing the giver to enjoy the best of both worlds.

A geologist plans to retire in the near future. During the course of her career she has invested wisely and accumulated a portfolio of high-grade stocks and bonds, the current value of which is approaching \$750,000. Her final year of full-time employment is proving to be a year of high income, and consequently she could benefit from a larger than normal tax deduction. A contribution of securities to the GSA Foundation valued at \$35,000 would achieve the desired tax deduction, but with retirement coming on, she feels

she can ill afford to give up the income that these securities would generate in future years.

The solution to this scientist's dilemma is a deferred giving trust that allows her to make a significant lifetime gift without sacrificing needed income. This is done by dividing the gift property into two parts. Through the mechanism of this trust, she retains the first part—the life income interest. She gives the GSA Foundation the second part—the remainder interest. At the time of her death the Foundation gains full possession and use of the total property.

One of the reasons to make this gift was to receive a tax deduction in the current year. While this deferred giving trust yields a tax deduction, the actual amount of the deduction depends on the present worth of the projected future value of the remainder interest that passes to the Foundation. This present worth is calculated by taking into account factors such as the life expectancy of the donor based on actuarial tables and the rate of payout to the income beneficiary during her lifetime. Thus, her contribution to a deferred trust would have to be greater than \$35,000 in order to achieve a tax deduction in that amount.

The complexities of deferred or planned giving derive from the necessity of separating the gift into two parts—the life income interest, which is retained by the donor, and the remainder interest, which is given to the GSA Foundation. Special tools have been devised to accomplish this separation and fulfill legal and tax requirements. These tools are the deferred giving trusts—charitable remainder annuity trust and unitrust—and the pooled income fund.

Under an annuity trust arrangement, the donor retains the right to a specified annuity, a fixed amount of dollars each year. This amount is set at the inception of the trust and cannot be less than 5% of the initial fair market value of the trust assets. Income generated by the trust assets will fluctuate from year to year depending on interest rates and economic conditions. The annuity payment is unaffected by these fluctuations, so there will either be a shortfall or surplus of income. The former requires that the payment be filled out by drawing from principal; the latter augments principal.

While generally similar to the annuity trust, the unitrust is different in that the annual payment to the income beneficiary varies. The donor specifies a percentage return that is applied annually to the fair market value of the assets. Thus, as the value changes, the annual payment to the beneficiary will increase or decrease. As in the case of the annuity trust, the difference between trust income and the payment will be added to or subtracted from principal.

The pooled income fund is a commingling of gifts from more than one donor, in order to minimize investment risks and maximize investment opportunities. GSA manages the fund along with other financial assets of the Society and the Foundation. The various contributors to the fund have their respective interests in the income, similar to a mutual fund. Unlike the annuity trust and unitrust, the actual income of the fund determines each year's payout. The pooled income fund is a particularly appropriate planned giving method for contributors of smaller amounts, since deferred gifts of only several thousand dollars can be handled in this manner.

The tax effect upon the donor as a result of a deferred gift must be analyzed for each situation. Factors to be considered include age and life expectancy of the donor, rate of payout, and the individual's marginal tax bracket.

(continued on p. 313)

GSA Foundation
3300 Penrose Place, P.O. Box 9140
Boulder, CO 80301
(303) 447-2020

GEO STAR
Supporting The Advancement of Research

To help me in my financial planning, please send me the deferred giving booklets *The Remarkable Unitrust* and *The Charitable Gift Annuity*.

Please print:

Name _____

Address _____

City/State/ZIP _____

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Information Explosion Is 1990 Theme

In the past decade computers have been woven into the fabric of our daily lives. The processing power of microcomputers has grown rapidly and now exceeds that of room-sized mainframes of a generation ago. Increasingly, from data collection to manuscript preparation, geosciences research resides in electronic files.

The theme for the 1990 GSA Annual Meeting in Dallas recognizes the role that computers are playing in geology today and are certain to play in the future. Special sessions will focus on the importance of computers in geosciences research, and local field trips will provide outstanding examples.

The 1990 Annual Meeting program will be built around symposia and theme and discipline sessions.

- Symposia are organized only by GSA divisions and associated societies.
- Theme sessions serve to focus volunteered presentations, frequently from a variety of disciplines, on a topic of broad interest.
- Discipline sessions consist of volunteered papers submitted to scientific (rather than topical) classifications.

Theme topics may be proposed by any individual or group. Proposed topic titles and a short explanatory paragraph should be submitted to either co-chairman. Submission of theme topics is due by *January 2, 1990*.

Organizations or groups of individuals submitting theme topics should designate one person as official theme advocate. The theme advocate participates in the review process and may solicit contributions, although no abstract is guaranteed acceptance. Abstracts contributed to theme sessions are entirely volunteered and are reviewed by three independent reviewers appointed by the Joint Technical Program Committee (JTPC). The advocate may serve as a fourth reviewer.

Abstracts submitted to a theme session but not deemed



relevant to the topic by the official advocate will be reviewed and considered for presentation in a discipline session.

The following ideas have been compiled by the 1990 Annual Meeting Local Committee. They are not intended to be comprehensive nor exclusive. Neither are they necessarily the ones that will emerge as the final titles of theme sessions to which abstracts will be submitted.

1990 Candidate Themes

1. Computers in Geology—modeling geologic processes; 3-D seismology; instructional uses
2. Plate Margins and Tectonic Evolution—Proterozoic crustal evolution of North and South America; tectonic setting and magma genesis at extensional centers; transpression
3. Geochemical Cycles and Global Stratigraphy—biotic, chemical, and isotopic changes at boundary intervals; rhythmic bedding and paleoclimatology; sequence stratigraphy
4. Environmental Problems—water supplies, hazardous wastes; neotectonics
5. Paleobiology—extinctions and recoveries; taphonomy; cladistics
6. Mapping and Technology—in situ stress maps; Global Positioning System; crustal imaging; deep crustal drilling

Preliminary List of Theme Topics

- T1. Application of Sr isotopes in sedimentary geology
- T2. Mesozoic tectonic evolution of Mexico and the Gulf of Mexico
- T3. Case studies in environmental hydrogeology
- T4. K/T boundary intervals in the southern United States
- T5. Hydrogeology of arid regions

Charitable Gifts (continued from p. 312)

The creation of a deferred gift is a personal and somewhat complex matter that requires input from professionals in its final stages. A call or a note to the Foundation office will elicit answers to preliminary questions and suggestions as to ways in which to develop a satisfactory deferred gift structure.

Donors to the Foundation, August 1989

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Robert Kerrich

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Reginald P. Briggs
Doris M. Curtis

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Reminder

Call for Nominations for 1990

Nominations for GSA's most prestigious awards, the Penrose and Day Medals, for Honorary Fellowships of the Society, and for the Donath Medal (Young Scientist Award) are due at headquarters by **FEBRUARY 1, 1990**.

Nominations for service as officers and councilors of the Society are due at headquarters by **FEBRUARY 15, 1990**.

Nominations for the Distinguished Service Award are due at headquarters by **MARCH 1, 1990**.

For procedures and additional information, please refer to the October 1989 issue of *GSA News & Information*, or call headquarters at (303) 447-2020.

Send your nominations and required backup and supporting materials **TODAY** to

Administrative Department
Geological Society of America
P.O. Box 9140
Boulder, CO 80301

1989 GSA Short Course Notes For Sale

A limited supply of short course notes is available from some of the courses presented at the St. Louis Annual Meeting. For information, please call:

Edna A. Collis
Meetings Department
1-800-GSA-1988.

Future GSA GeoTrips

- 1990 Grand Canyon

The 1990 Grand Canyon Trip has filled. Once again this enormously popular trip filled immediately. The 36 spaces went within 60 days of the first announcement. Keep your eyes open for the next trip. If you are interested in going on this or other GSA GeoTrips, please send us your name. We will send you information as soon as we know the trip dates.



GSA Goes Kiwi

New Zealand: 1991



2½ to 3 Week Geological Vacation Trip emphasis on South Island

*Exact dates to be announced;
will be between mid-February and mid-March*

Geologic leadership and other trip information to be announced
January 1, 1990

Check the January issue of *GSA News & Information*
Approximate cost: \$2000-\$2400 plus airfare

Guests welcome

GSA members will receive a special discount

Call Sue Beggs, GSA Meetings Manager, (303) 447-2020

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GSA NEW ZEALAND 1991

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1990 Annual Meeting—Dallas, Texas

October 29–November 1
Dallas Convention Center

General Chairman: **David E. Dunn**
Geosciences, MS FN 3.2
University of Texas at Dallas
P.O. Box 830688
Richardson, TX 75083-0688

Short Course Proposals Due December 15, 1989

Proposals are encouraged from GSA members and nonmembers. Proposals will be in review by GSA's Short Course Committee through January 31, 1990.

To request short course proposal guidelines or to submit proposals contact:

Short Course Coordinator
Edna Collis, GSA, P.O. Box 9140, Boulder, CO 80301,
(303) 447-2020

Theme Session and
Symposia Proposals Due January 2, 1990

For 1990 program specifics contact:

Technical Program Chairmen
Richard M. Mitterer
Program in Geosciences
University of Texas at Dallas
Richardson, TX 75083-6088
(214) 690-2401 (dept.), (214) 690-2462 (direct)

or temporarily at:

Division of Engineering and Geoscience
Basic Energy Sciences, ER-15, GTN
Office of Energy Research
U.S. Dept. of Energy (D.O.E.)
Washington, DC 20545
(301) 353-5822

Roger E. (Tim) Denison
Mobil Research & Development Corp.
P.O. Box 819047
Dallas, TX 75381
(214) 851-8172

For general information on program participation (1990 and future years) contact:

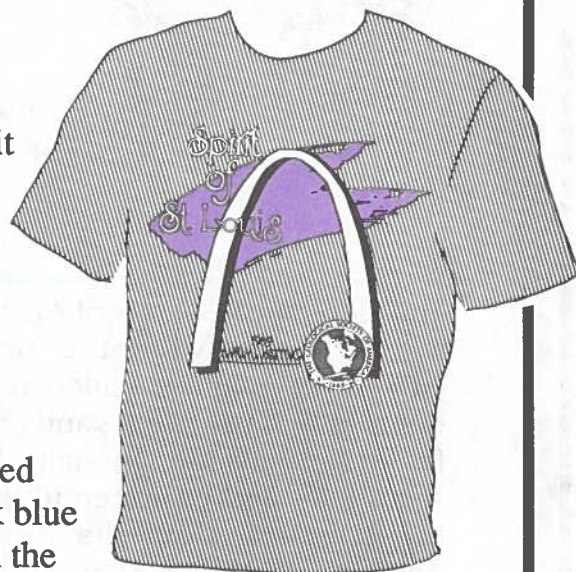
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Future GSA Annual Meetings

Dallas Oct. 29–Nov. 1, 1990
San Diego Oct. 21–Oct. 24, 1991
Cincinnati Oct. 26–Oct. 29, 1992
Boston Oct. 25–Oct. 28, 1998
Seattle Oct. 24–Oct. 27, 1994

GET YOUR 1989 ST. LOUIS T-SHIRT AND THE NEW GSA HAT

The St. Louis T-Shirt is jade green, 50% cotton/ 50% polyester. The design includes "Spirit of St. Louis" and the famous St. Louis Arch.



The new GSA hat comes in both a light blue cotton twill, embroidered with the GSA logo, and in dark blue corduroy, embroidered with the Society's name.

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THE GEOLOGICAL SOCIETY OF AMERICA



Annual research awards program 1990

The Geological Society of America will continue its annual research awards program in 1990. Eligibility is not restricted to GSA members. New application forms for the current year and detailed requirements are available each fall in the geology departments of colleges and universities offering graduate degrees in earth sciences. Forms are mailed annually to GSA Campus Representatives and department secretaries and chairmen in the United States and Canada. They are also available upon request from the Research Grants Administrator, Geological Society of America, P.O. Box 9140, Boulder, Colorado 80301. PLEASE USE ONLY THE 1990 APPLICATION AND APPRAISAL FORMS.

The primary role of the research grant program is to provide partial support of master's and doctoral thesis research for graduate students at universities in the United States, Canada, Mexico, and Central America.

The Geological Society of America awarded \$180,000 in grants in 1989. The awards went to 210 students doing research for advanced degrees. The average amount awarded was \$859. The largest award was \$1,700, but there is no predetermined maximum amount.

Confidential evaluations from two faculty members are required from master's and doctoral candidates and must accompany applications submitted. PLEASE USE THE "APPRAISAL OF APPLICANT" FORMS, WHICH ACCOMPANY THE 1990 APPLICATION FORMS.

The Committee on Research Grants will meet in April to evaluate applications and award grants. In April, all applicants for grants will be informed of the committee's actions by the Executive Director of the Geological Society of America.

**ALL APPLICATIONS MUST BE SUBMITTED ON THE 1990 FORMS
AND POSTMARKED BY FEBRUARY 15, 1990**

MEETINGS

(Asterisk indicates new or changed information)

1989

Society of Vertebrate Paleontology 49th Annual Meeting, November 1-4, 1989, Austin, Texas. Information: SVP89, Vertebrate Paleontology Lab., Balcones Research Center, 10100 Burnet Road, Austin, TX 78758-4497; (512) 471-6087.

Sociedad Española de Paleontología 5th Annual Meeting, November 2-3, 1989, Valencia, Spain. Information: Ana Márquez-Aliaga, Depto. Geología, Facultad de Ciencias Biológicas, 46100 Burjassot, Valencia, Spain.

World Gold '89, November 5-8, 1989, Reno, Nevada. Information: Meetings Dept., World Gold '89, Society of Mining Engineers, P.O. Box 625002, Littleton, CO 80162; (303) 973-9550; telex 881988.

Geological Society of America Annual Meeting, November 6-9, 1989, St. Louis, Missouri. Information: Meetings Department, GSA, P.O. Box 9140, Boulder, CO 80301; (303) 447-2020.

SIAM Conference on Geometric Design, November 6-10, 1989, Tempe, Arizona. Information: SIAM Conference Coordinator, 3600 University City Science Center, Philadelphia, PA 19104-2688; (215) 382-9800; fax 215-386-7999.

Supercomputing '89, November 13-17, 1989, Reno, Nevada. Information: F. Ron Bailey, MS. 258-5, NASA Ames Research Center, Moffett Field, CA 94035; (415) 694-4500.

1989 Eastern Oil Shale Symposium, November 15-17, 1989, Lexington, Kentucky. Information: Geaunita H. Caylor, 201 Porter Building, Lexington, KY 40506-0205; (606) 257-2847.

1989 Petroleum Hydrocarbons Conference, November 15-17, 1989, Houston, Texas. Information: National Water Well Association, P.O. Box 182039, Dept. #017, Columbus, OH 43218; (614) 761-1171; telex 241302.

Seminar on Compressional and Extensional Structural Styles in the Northern Basin and Range, November 17-18, 1990, Reno, Nevada. Information: NPS-GSN Structural Seminar '89, Nevada Petroleum Society, P.O. Box 71408, Reno, NV 89570-1408.

American Geophysical Union Fall Meeting, December 4-8, San Francisco, California. Information: AGU Meetings, 2000 Florida Ave., N.W., Washington, DC 20009; (202) 462-6903.

American Society of Mechanical Engineers Winter Annual Meeting, December 10-15, 1989, San Francisco, California. Information: ASME Meetings Dept., 345 E. 47th St., New York, NY 10017; (212) 705-7795.

4th SIAM Conference on Parallel Processing for Scientific Computing, December 11-13, 1989, Chicago, Illinois. Information: SIAM Conference Coordinator, 3600 University City Science Center, Philadelphia, PA 19104-2688; (215) 382-9800; fax 215-386-7999.

1990

ACM/SIAM Symposium on Discrete Algorithms, January 22-24, 1990, San Francisco, California. Information: SIAM Conference Coordinator, 3600 University City Science Center, Philadelphia, PA 19104-2688; (215) 382-9800; fax 215-386-7999.

2nd International Brachiopod Congress, February 5-9, 1990, Dunedin, New Zealand. Information: J. D. Campbell and D. E. Lee, 2nd International Brachiopod Congress, Geology Dept.,

University of Otago, P.O. Box 56, Dunedin, New Zealand; phone 64-024-791-100, ext. 7526; fax 64-024-741-607.

Source Rocks, Generation, and Migration of Hydrocarbons and Other Fluids in the Southern Midcontinent—Symposium/Workshop, February 6-7, 1990, Norman, Oklahoma. Information: Kenneth S. Johnson, Oklahoma Geological Survey, 100 E. Boyd, Room N-131, Norman, OK 73019; (405) 325-3031.

Workshop on Tertiary Stratigraphy of Highly Extended Terranes, Southern Basin and Range Province, February 9-12, 1990, Zzyzx Springs, California. Information: Rick Hazlett, Dept. of Geology, Pomona College, 609 N. College Ave., Claremont, CA 91711-6339; (714) 621-8000, ext. 2952.

First PNG Petroleum Convention, February 12-14, 1990, Port Moresby, Papua New Guinea. Information: Mick McWalter, First PNG Petroleum Convention, c/o PNG Chamber of Mines and Petroleum, P.O. Box 7059, Boroko, Port Moresby, Papua New Guinea; phone 675-25-2836; fax 675-21-7107; telex NE 23482.

National Water Well Association/Association of Ground Water Scientists and Engineers Cluster of Conferences, "Agricultural Impacts on Ground Water Quality," "Ground Water Geochemistry," "Ground Water Management and Wellhead Protection," and "Environmental Site Assessments: Case Studies and Strategies," February 20-22, 1990, Kansas City, Missouri. Information: NWWA/AGWSE, P.O. Box 182039, Dept. #017, Columbus, OH 43218; (614) 761-1711.

Society of Mining Engineers Annual Meeting, February 26-March 1, 1990, Salt Lake City, Utah. Information: Meetings Department, Society of Mining Engineers, P.O. Box 625002, Littleton, CO 80162; (303) 973-9550; fax 303-973-3845; telex 881988.

GSA Northeastern Section, March 4-7, 1990, Syracuse, New York. Information: Henry T. Mullins or Donald I. Siegel, Dept. of Geology, Heroy Geology Lab., Syracuse University, Syracuse, NY 13244; (315) 443-4706 or 2672. (Abstracts deadline: November 9, 1989.)

GSA South-Central Section, March 5-6, 1990, Stillwater, Oklahoma. Information: Scott M. Ritter, School of Geology, Oklahoma State University, 105 Noble Research Center, Stillwater, OK 74078-0451; (405) 744-6358. (Abstracts deadline: November 3, 1989.)

SIAM Conference on Applied Probability in Science and Engineering, March 5-7, 1990, New Orleans, Louisiana. Information: SIAM Conference Coordinator, 3600 University City Science Center, Philadelphia, PA 19104-2688; (215) 382-9800; fax 215-386-7999.

AAPG Southwest Section Convention, March 11-13, 1990, Wichita Falls, Texas. Information: Will Tucker, Technical Program Co-Chairman, 825 MBank Building, Wichita Falls, TX 76301.

***Prospectors and Developers Association of Canada 58th Annual Convention**, March 11-14, 1990, Toronto, Ontario. Information: Cary McLeod, Prospectors and Developers Association of Canada, Suite 1002, 74 Victoria St., Toronto, Ontario M5C 2A5, Canada; (416) 362-1969; fax 416-362-0101.

***Symposium on the Application of Geophysics to Engineering and Environmental Problems**, March 12-15, 1990, Golden,

(continued on p. 318)

MEETINGS (continued from p. 317)

Colorado. Information: SAGEEP '90, 133 S. Van Gordon, Suite 200, Lakewood, CO 80228; (303) 980-1648.

American Institute of Hydrology: Minimizing Risk to the Hydrologic Environment, March 12-16, 1990, Las Vegas, Nevada. Information: AIH, 3416 University Ave. S.E., Minneapolis, MN 55414; (612) 379-1030.

GSA Cordilleran Section, March 14-16, 1990, Tucson, Arizona. Information: William R. Dickinson, Dept. of Geosciences, University of Arizona, Tucson, AZ 85721; (602) 621-4051. (Abstracts deadline: November 14, 1989.)

***9th Industrial Minerals International Congress**, March 24-28, 1990, Sydney, Australia. Information: Diana Little, Industrial Minerals, Park House, Park Terrace, Worcester Park, Surrey KT4 7HY, England; phone (01) 330-4311; fax 01-337-8943.

Symposium on Geology and Ore Deposits of the Great Basin, April 1-5, 1990, Reno, Nevada. Information: Geological Society of Nevada, P.O. Box 12021, Reno, NV 89510.

Ninth Symposium on Coastal Sedimentology, April 5-6, 1990, Tuscaloosa, Alabama. Information: Richard Hummell, Energy and Coastal Geology Division, P.O. Box 0, Tuscaloosa, AL 35486.

GSA Southeastern Section, April 5-6, Tuscaloosa, Alabama. Information: William A. Thomas or C. Michael Lesher, SEGSA, Dept. of Geology, University of Alabama, Tuscaloosa, AL 35487. (Abstracts deadline: December 15, 1989.)

8th Petroleum Congress of Turkey, April 16-20, 1990, Ankara, Turkey. Information: Aytac Eren, Mudafaa Cad. 22, 06420 Bakanliklar, Ankara, Turkey; phone 90-4-117-91-60/288-285; telex 42-426 TPAO-TR.

International Conference on Mechanics of Jointed and Faulted Rock, April 18-20, 1990, Vienna University of Technology, Vienna, Austria. Information: H. P. Rossmann, Wiedner, Hauptstrasse 8-10/325, A-1040 Wien, Austria; phone 0222-588-01.

Orogenesis in Action: Tectonics and Processes in the West Equatorial Pacific Margin, April 18-20, 1990, London, England. Information: Robert Hall, Department of Geological Sciences, University College, Gower St., London, WC1E 6BT, England.

***Conference on Subsurface Contamination by Immiscible Fluids**, April 18-20, 1990, Calgary, Alberta. Information: K. Udo Weyer, Weyer Corp., Inc., 4827 Vienna Dr. N.W., Calgary, Alberta T3A 0W7, Canada; (403) 286-3777; fax 403-247-6074

European Geophysical Society XV General Assembly, April 23-27, 1990, Copenhagen, Denmark. Information: EGS Office, Postfach 49, D-3411 Katlenburg-Lindau, Federal Republic of Germany; phone 49-5556-1140; fax 49-5556-4709; telex 965564 zil d. (Abstracts deadline: January 31, 1990.)

GSA North-Central Section, April 26-27, 1990, Macomb, Illinois. Information: John Klasner, Dept. of Geology, Western Illinois University, Macomb, IL 61455. (Abstracts deadline: January 5, 1990.)

***V. M. Goldschmidt Conference** (international conference for the advancement of geochemistry), May 2-4, 1990, Baltimore, Maryland. Information: Donna Ricketts, 409 Keller Conference Center, Pennsylvania State University, University Park, PA 16802.

SIAM Conference on Applications of Dynamical Systems, May 7-10, 1990, Orlando, Florida. Information: SIAM Conference Coordinator, 3600 University City Science Center, Philadelphia, PA 19104-2688; (215) 382-9800; fax 215-386-7999. (Abstracts deadline: November 28, 1989.)

West Texas Geological Society and Permian Basin Section of SEPM Field Seminar to the Marathon Area, Brewster County, Texas, May 10-12, 1990. Information: WTGS/PBS-SEPM, P.O. Box 1595, Midland, TX 79702; (915) 683-1573.

Geological Association of Canada-Mineralogical Association of Canada Joint Annual Meeting, May 16-18, 1990, Vancouver, British Columbia. Information: R. I. Thompson, c/o GAC-MAC '90 Secretariat, 801-750 Jervis St., Vancouver, B.C. V6E 2A9, Canada; (604) 681-5226; fax 604-681-2503; telex 04-352848 VCR.

GSA Rocky Mountain Section, May 21-23, 1990, Jackson, Wyoming. Information: Ronald W. Marrs, Dept. of Geology & Geophysics, University of Wyoming, Laramie, WY 82071; (307) 766-3386. (Abstracts deadline: January 31, 1990.)

***Geological Association of Canada Nuna-SEG Field Research Conference on Greenstone Gold and Crustal Evolution**, May 24-27, 1990, Val D'Or, Quebec. Information: Francois Robert, Geological Survey of Canada, 601 Booth St., Ottawa, Ontario K1A 0E8, Canada; fax 613-996-9990.

1st Joint Meeting of the Canadian Quaternary Association and American Quaternary Association, June 4-6, 1990, Waterloo, Ontario, Canada. Information: Alan V. Morgan, Quaternary Sciences Institute, Dept. of Earth Sciences, University of Waterloo, Waterloo, Ontario N2L 3G1, Canada.

USA/USSR Joint Conference on Global Environmental Hydrology and Hydrogeology, Leningrad, USSR, June 18-21, 1990. Information: Helen Klose, American Institute of Hydrology, 3416 University Ave., S.E., Minneapolis, MN 55414; (612) 379-1030.

4th International Conference on Geoscience Information (Geoinfo IV), June 24-29, 1990, Ottawa, Ontario. Information: David Reade, Conference Secretary-Treasurer, GEOSCAN Centre, Geological Survey of Canada, 601 Booth St., Ottawa, Ontario K1A 0E8, Canada; (613) 992-9550; fax 613-996-9990; telex 0533117 EMAR-OTT.

9th International Conference on Basement Tectonics, July 2-6, 1990, Canberra, Australia. Information: IBT9 ACTS, GPO Box 2200, Canberra, A.C.T. 2601, Australia; phone 062-49-8015; fax 062-573256.

1990 Watershed Management Symposium, July 9-11, 1990, Durango, Colorado. Information: Robert Riggins, USACERL, P.O. Box 4005, Champaign, IL 61824-4005.

International Association on the Genesis of Ore Deposits 8th Symposium, August 12-18, 1990, Ottawa, Ontario. Information: L. M. Cumming, 8th IAGOD Symposium, Geological Survey of Canada, 601 Booth St., Ottawa, Ontario K1A 0E8, Canada. (Abstracts deadline: January 1, 1990.)

***International Sedimentological Congress**, August 26-30, 1990, Nottingham, England. Information: C. P. Summerhayes, Institute of Oceanographic Sciences Deacon Lab., Brook Rd., Wormley, Godalming, Surrey GU8 5UB, England.

International Conference on Water Resources in Mountainous Regions, August 27-September 1, 1990, Lausanne, Switzerland. Information: Aurèle Parriaux, Laboratory of Geology EPFL, 1015 Lausanne, Switzerland; phone 021-47-23-55; telex 454478 EPFV CH.

(continued on p. 319)

CLASSIFIED ADVERTISING

Ads (or cancellations) for the January issue must reach the GSA office by November 15. Contact Advertising Department (303) 447-2020, 1-800-472-1988, fax 303-447-1133.

Per line per issue	1x	3x	6x	12x
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To answer coded ads, use this address: Code # , GSA News, P.O. Box 9140, Boulder, CO 80301.

All coded mail will be forwarded within 24 hours of arrival at GSA News office.

Positions Open

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Wesleyan University seeks applicants for the position of Facilities Manager in the Earth and Environmental Sciences Department.

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Please send your resume to: Wesleyan University, 70 Wyllys Avenue, Human Resources, Dept. GSA/ 11-1-89, Middletown, CT 06457-6027. Or call: (203) 347-9411 ext. 2638.

Wesleyan University. An Equal Opportunity & Affirmative Action Employer M/F/H/V. Minorities & Women are encouraged to apply.

POMONA COLLEGE Department of Geology

Applications are invited for a two-year sabbatical replacement position to begin September, 1990. Candidates should have ability and desire to teach in undergraduate geology program including courses in introductory geology, earth history, mineralogy, optical mineralogy and igneous and metamorphic petrology.

A Ph.D. is highly desirable. Please send letter of interest, resume, transcripts and three letters of recommendation to: Dr. Donald H. Zenger, Chairman, Department of Geology, Pomona College, 609 North College Ave., Claremont, CA 91711-6339.

Deadline for completed applications is January

15, 1990. Pomona College is an affirmative action, equal opportunity employer and especially invites applications from women and minorities.

SEDIMENTOLOGY POSITION UNIVERSITY OF NEW MEXICO

The Department of Geology at the University of New Mexico invites applications for a tenure-track, full-time position in clastic and/or carbonate sedimentology and stratigraphy beginning in August, 1990. The successful applicant will be expected to be active in research and to guide research at the M.S. and Ph.D. levels. Teaching duties include undergraduate and graduate courses in sedimentology/stratigraphy, sedimentary petrology, basin analysis, and historical geology.

The position will be filled at the assistant professor level. All requirements for the Ph.D. must be fulfilled by the time of appointment. Applicants should submit a complete resume, including a statement of teaching and research interests and transcripts and arrange for three letters of recommendation to be sent to Leslie D. McFadden, Search Committee Chairman, Department of Geology, University of New Mexico, Albuquerque, New Mexico 87131. The closing date for application is December 31, 1989.

The University of New Mexico is an equal opportunity, affirmative-action employer. Women and minority applicants are encouraged to apply for this position.

CLASTIC SEDIMENTOLOGIST MIAMI UNIVERSITY

The Department of Geology at Miami University invites applications from clastic sedimentologists, especially those with interests in modern clastic systems and their relation to tectonics and climate. The successful applicant must have a strong commitment to research (as indicated by publications, abstracts of conference presentations, etc.) and is expected to establish a vigorous research program supported by external funding. Other responsibilities include teaching sedimentary petrology at undergraduate and graduate levels. Preference will be given to applicants who have demonstrated an ability to apply diverse techniques such as field geology, petrography, SEM, and isotope geochemistry and to use innovative approaches in the resolution of geological problems. This is an entry-level (Assistant Professor), tenure-track position that requires a Ph.D. degree.

The Geology Department is comprised of eleven regular faculty and two research faculty, with nine of those appointments in the last eight years. It offers the Bachelor's, Master's, and Ph.D. degrees in a broad spectrum of geologic specialties. Instrumentation available in the department includes a DC plasma spectrometer, a solid source mass spectrometer, a powder x-ray diffractometer, and a cathode luminoscope. A single-crystal x-ray diffractometer and a SEM with energy-dispersive capabilities are housed in other departments.

Applications should include a letter that discusses teaching and research interests, transcripts of all college work, and the names,

addresses, and phone numbers of four references from whom letters of recommendation may be obtained. Send applications to: Maryellen Cameron, Chair, Department of Geology, Miami University, Oxford, Ohio 45056, (513) 529-3216.

Application deadline: December 31, 1989.

Miami University offers equal opportunity in education and employment.

Consultants

DR. J.W. SCHROEDER, Geologist, since 1939, 2, Rue des Granges, GENEVA, Switzerland.

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MEETINGS (continued from p. 318)

Penrose Conferences 1990

Correlation of Nonmarine Cretaceous Strata, May 9-14, 1990, Breckenridge, Colorado. Information: Niall J. Mateer, Nonmarine Cretaceous Correlations, 1467 N. 17th, Laramie, WY 82070; (307) 721-4946; or Norman O. Frederiksen, USGS, 970 National Center, Reston, VA 22092; (703) 648-5277.

New Methods for Dating of Geomorphic Surfaces, October 12-17, 1990, Mammoth Lakes, California. Information: Fred M. Phillips, Dept. of Geoscience, New Mexico Tech, Socorro, NM 87801; (505) 835-5540 (direct), (505) 835-5634 (dept.).

Large Lakes and Their Stratigraphic Record, September 9-13, 1990, Lake Tahoe, California. Information: Andrew S. Cohen, Dept. of Geosciences, University of Arizona, Tucson, AZ 85721; (602) 621-4691 (direct), (602) 621-6024 (dept.).

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INSIDE _ _ _

Short Course Program	p. 305
GSA Research Grants	p. 308



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