



Toward Excellence in Quality of Presentations of Papers Given at GSA Meetings

by Walter D. Keller

University of Missouri—Columbia

Relatively few of the many papers presented at the last GSA Annual Meeting earned an "excellent" rating in an informal, subjective poll. The only qualification required for an excellent rating was simple, realistic, and straightforward, but effectively rigorous: that a new or stimulating idea, which was remembered clearly, was taken away from the presentation by individual listeners. This accords with the original purpose for which GSA was formed: the exchange of geologic information.

A paper rated as "distressed" or "disaster," on the other hand, apparently had adequate technical geologic potential but was presented so ineffectively that listeners took away only a foggy uncertainty about what the speaker really was trying to tell.

It is the purpose of this note, supplementary to H. Edward Clifton's excellent "Tips on Talks" (June 1985 *News & Information*), to analyze how the presentation by the speaker may make one paper a success or another paper a flop, and then to suggest techniques applicable in preparing papers that will be rated excellent.

Put Yourself in the Listener's Place

It is first necessary to determine for whom the paper should be a success. The unequivocal answer is that the real-life appraisers are the listeners—the customers in the learning transaction who are spending their time listening to the product in the hope of taking away something of value. Are there practical psychological and physical communication techniques by which the speaker can make his or her presentation more effective and useful to the listeners? The answer is that there are, as indicated below.

One of the foremost of these techniques is to prepare and present the talk from the psychological viewpoint of the audience, rather than delivering it from the psychological perspective of the speaker. The current buzz term is "to identify psychologically with the listener." The audience, in the role of receptors, typically is listening in a psychologically forward-looking direction to the topic; the minds of the listeners are receptive and resilient. The speaker, the sophisticated leader of the learning session, having worked on the problem for months or years, naturally looks backward at it. Furthermore, the speaker, having met difficulties as well as successes during the investigation, tends to be more sobered and matured than when the research was started. Therefore, to achieve the most productive results with the listeners, the



Walter D. Keller

speaker should recapture his or her early attitude of anticipation in investigation. In TV parlance, the speaker should telecast on the wave-length of the listeners, who are enthusiastically forward looking, rather than on his or her own vibrations, which look backward at the problem.

Concentrate on the Main Idea

Another, equally important, psychological maxim, inviolably applicable to the process of learning from a lecture, is that the learning mind can grasp, assimilate, and retain only a single, main idea during a 15- to 20-minute presentation. An additional supportive idea, if closely allied to the principal one, may also be grasped by the listeners, but more than that likely will be lost and the effort wasted (as many experienced teachers have found out the hard way). Therefore, it is the responsibility of the speaker, while preparing the talk, to distill and condense from all the ramifications and "goodies" (in the speaker's memory of the

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Giving a paper at an upcoming GSA section meeting or the 1986 Annual Meeting? Read Walter Keller's advice on how to improve your presentation.

Presentation of Papers at GSA Meetings

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research problem), a single main idea that can be learned and taken away. It is for this acquired idea that the paper and speaker will be remembered. The speaker should spotlight the path for the listeners' minds to follow to the desired destination (idea). To emphasize a concept for your audience, tell 'em in the future tense; tell 'em in the present tense, and tell 'em in the past tense.

Prepare and Practice

Eureka! Now that you, the speaker, have psychologically prepared the Word (à la P.D. Krynine) by which to convert the geological souls of your audience, you are ready to mount the podium. To continue effective communication with your listeners, use the following aids and procedures while making the actual presentation.

1. Rehearse your talk as many times as you will spend in minutes presenting it. You may have said parts of it before, in other talks, but those parts must be assembled and rehearsed for *this* talk.

2. Speak directly into the microphone and look at your audience, not at the floor or ceiling or out of the window. Speak from your diaphragm, following the advice of coaches of public speakers, the same way an opera star sings. That means to project your voice with the column of air in your lungs rather than to masticate and spit out short-ranging words impelled only by the tongue, cheeks, lips, and teeth. When projecting slides, speak loudly and very clearly, because your audience is then dependent solely on your voice for communication. By modulating your voice, you can make the presentation more informal, personally appealing, and therefore usually more convincing.

3. When projecting a graph, always identify audibly the

information plotted on the axes before diving into the data on the slide. Remember that the listeners have not seen that slide before and must orient their frame of thinking before they can assimilate the data you are presenting. (Here you are working from the viewpoint of the consumer again.) Make your graphs simple; use bold lettering that shows major interpretations rather than comprehensive details.

4. When projecting a summary table of data, first tell the listeners what the subject and purpose of the data are before manipulating the numbers. Note the adjective "summary" in the preceding sentence; the slides presenting data for a talk should summarize the data but not overload the listeners' minds. Those comprehensive tables will be in the later published article; readers can take as much time as they need to analyze and assimilate. Your audience may already be gorged with too many indigestible facts from "distress" papers, so relieve and refresh your listeners with simple interpretative (nontabular), easily assimilable slides and summaries.

5. Although the preparation of special slides and systematizing the mode of presentation best tailored for your audience do, indeed, take much of your valuable time, you, the speaker, owe that much time to the audience. Consider that if you have 100 listeners present at your 20-minute talk, they will spend a total of 33 person-hours listening to you. Therefore it is not too much to expect from a speaker to put in only 4 person-hours, a half day, to prepare an "excellent," rewarding paper.

In summary: present your story from the viewpoint of the audience, speak clearly and audibly, and show simple and clear visual aids. Carefully formulate your main idea and then express that idea so your listeners will take it away in rewarded remembrance of your talk and of you as a speaker.



GEOLOGICAL SOCIETY OF AMERICA

BULLETIN

THE TIME FROM
ACCEPTANCE TO PUBLICATION
OF PAPERS IS NOW
5 TO 6 MONTHS
THERE IS NO BACKLOG

Bulletin Editors



CENTENNIAL NEWS

by Allison (Pete) Palmer

Southeastern Centennial Field Guide On Its Way!

Congratulations to Tony Neathery for completing the yeoman task of selecting appropriate sites, locating authors, badgering them to complete their site descriptions, and doing preliminary editing on 100 site descriptions for the first of the Centennial Field Guides to be submitted to GSA for publication. The project tied up Tony's dining room at home, and many of his nights and weekends, for many months. The last six manuscripts were in Tony's hands in the first week of January, and all manuscripts were in processing at GSA headquarters by the end of the month. The sites represent outstanding areas in the Appalachian Plateau, Valley and Ridge, Pied-

mont, and Coastal Plain in Virginia, West Virginia, Kentucky, Tennessee, the Carolinas, Louisiana, Mississippi, Alabama, Georgia, or Florida. The book should be available later this spring. Look for the announcements!

Final Coordinating Conferences

Three more Final Coordinating Conferences for volumes of *The Geology of North America* have been held since the first of the year: *Surface Water Hydrology, North America and Adjacent Oceans Since the Last Deglaciation*, and the Coal section of *Economic Geology: U.S.*. Chapters in these volumes are now in the process of review and revision leading to publication in 1987.

Companies, Agencies, Consultants

More GSA Representatives Needed

Last year, GSA launched a new representative program, targeting companies, agencies, and consultants throughout the country. The purpose was to broaden GSA's representation to include all employment sectors. The program was modeled on the successful campus representative program that was begun in 1979 and now includes 404 representatives at colleges and universities throughout North America.

We now have 33 company, 19 agency, and 20 consultant GSA representatives. However, we need more volunteers. Our goal is to designate a representative at all major company offices and governmental agencies throughout the country. For example, we hope to have a GSA representative for Exxon in Houston, for Chevron in Denver, for the Illinois State Geological Survey, for Dames & Moore in San Francisco, etc. We want to develop a similar liaison with GSA members who are self-employed and serve as consultants. They would represent major cities and geographic regions.

The representatives will serve as liaisons between GSA headquarters and their constituency in a particular city or region. They will provide information on the programs and benefits of the Society to other members in the region and explain to prospective members the benefits of joining GSA. Each representative will receive a notebook containing complete information on all programs, activities, publications, meetings, and other benefits that the Society provides its membership. Examples include

- *Bulletin, Geology, and News & Information* every month
- \$25 discount for GSA's Employment Service (applicants)
- \$10 discount for registration fees for Penrose Conferences
- \$10 reduction in student registration fees for GSA's Annual Meeting
- Reduced registration fees for many GSA section meetings
- Reduced dues for spouse member (\$26 for 1986)
- 25% discount on Member Standing Order Plan

- Special discounts on Decade of North American Geology publications
- Group term life insurance plan at reduced member rates
- Opportunity to participate in GSA's specialized divisions and to receive their newsletters
- Opportunity to apply for student grants-in-aid in the Southeastern Section
- Discount for subscriptions to *Engineering Geology Abstracts* for Engineering Geology Division affiliates
- Discount for Avis car rentals
- 25% discount on many Geological Society of London publications
- Reduced subscription rate for publications of the American Institute of Physics

We need your help to extend this communications link between GSA headquarters and the membership of the Society. If you are a Member or Fellow (not Student Associate) and are interested in serving GSA as a representative for your company, agency, or group of the employment sector, please complete and return the form on page 52. Play an active role in the affairs of your Society, and be the first in your area to represent GSA!

We thank the following GSA representatives now serving to keep the program growing.

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Fulbright Scholar Competition Opens for 1987-1988

The Council for International Exchange of Scholars (CIES) has announced the opening of competition for the 1987-1988 Fulbright grants. CIES participates with the United States Information Agency (USIA) in administering the Fulbright Scholar Awards in research and university lecturing abroad.

The awards for the 1987-1988 competition include more than 300 grants in research and 700 grants in university lecturing for periods ranging from three months to a full academic year. There are openings in more than 100 countries; in some instances, the opportunity for multi-country research is available. Fulbright Awards are granted in virtually all disciplines, and scholars in all academic ranks are eligible to apply. Applications are also encouraged from retired faculty and independent scholars.

Benefits include round-trip travel for the grantee and, for full academic year awards, one dependent; maintenance allowance to cover living costs of grantee and family; tuition allowance, in many countries, for school-age children; and book and baggage allowances.

The basic eligibility requirements for a Fulbright Award are U.S. citizenship; Ph.D. or comparable professional qualifications; university or college teaching experience; and, for selected assignments, proficiency in a foreign language.

Application deadlines for the awards are June 15, 1986 (for Australasia, India, Latin America, and the Caribbean); September

15, 1986 (for Africa, Asia, Europe, and the Middle East); November 1, 1986 (for institutional proposals for the Scholar-in-Residence Program); January 1, 1987 (for Administrators' Awards in Germany, Japan, and the United Kingdom; Seminar in German Civilization; and the NATO Research Fellowships); and February 1, 1987 (for Spain Research Fellowships, and France and Germany Travel-Only Awards).

For more information and applications, call or write Council for International Exchange of Scholars, Eleven Dupont Circle N.W., Washington, DC 20036-1257. Telephone: (202) 939-5401.

Glossary of Geology Editors Seek New Terms and Definitions

Work is beginning on the third edition of the *Glossary of Geology*, and the editors, Robert L. Bates and Julia A. Jackson, request help identifying new terms and definitions, changes in usage, and changes to be made to the current edition. The third edition will incorporate modifications and growth of the geoscience vocabulary; the editors are especially interested in changes since 1979. In the new edition, the longer earth-science terms will be divided into syllables, and syllables to be accented will be marked.

Please send your contributions by April 1, 1986, to Julie Jackson, Editor, American Geological Institute, 4220 King Street, Alexandria, VA 22302.

MEMORIAL PREPRINTS

The following memorial preprints are now available, free of charge, by writing to GSA, P.O. Box 9140, Boulder, CO 80301.

Robert Clarence Morris, by Ellen Mullen Morris
Ruth Todd, by Martin A. Buzas and Doris Low
George Reed Downs, by Andrew G. Alpha
Roland Frank Beers, Sr., by Barbara Beers L. Trafford
Edwin Dinwiddee McKee, by Raymond C. Gutschick

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Committees are the key to GSA's accomplishments in promoting the science of geology. Committee members and representatives contribute their expertise and experience to all areas of GSA endeavor. Listed here are those currently serving the Society and the science as committee members and as GSA representatives to other scientific groups.

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The Geological Society of America will sponsor a one-year fellowship (September-August) for an earth scientist to serve on the staff of a Congressional committee or a U.S. House or Senate member, advising on a wide range of scientific issues related to public policy. The purpose of this program is to provide an opportunity to communicate earth science information to national policy makers and to bring the benefits of that experience back to the scientific community.

Requirements

Applicants should have an advanced degree in the earth sciences, or equivalent professional experience, and be interested in applying science to the solution of public problems. The position will require the ability to work well with people from diverse professional backgrounds and to be articulate and flexible in fulfilling a broad range of assignments.

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Application Information

Interested candidates should inquire for further information about the program and application procedures by writing or calling Executive Director, Geological Society of America, P.O. Box 9140, Boulder, CO 80301; (303) 447-2020.

Deadline for applications is March 31, 1986.

Penrose Conference on Syntectonics Scheduled for September

A GSA Penrose Conference, "Syntectonics," will be held September 7-12, 1986, at the Tamarron Resort near Durango, Colorado. Conveners are William A. Thomas, Department of Geology, University of Alabama, University, Alabama 35486, and Donald L. Baars, Consultant, 29056 Histed Drive, Evergreen, Colorado 80439.

Syntectonics can be approached in various ways; some of these—for example, syntectonics sources of clastic sediment, syntectonics basin subsidence, and syntectonics melanges in accretionary complexes—are represented by recent syntheses. In contrast, the literature on syntectonics history of intrabasinal structures on continental crust remains fragmentary, and this conference will be aimed at a comprehensive review of this important topic. Discussions will focus on tectonic history as it is reflected in the stratigraphic sedimentologic record of syntectonics structures and will cover the complete spectrum of structures formed on continental crust, including structures associated with passive continental margins, foreland fold-thrust belts, foreland basins, intracratonic basins, and intracratonic fault systems.

The objectives of the conference are (1) to define appropriate criteria for recognition of syntectonics structures; (2) to consider methods by which responses to syntectonics structures may be differentiated from other sedimentologic variations; (3) to review the implications of syntectonics structures for interpretation of structural history of various types of depositional basins; and (4) to consider the protracted history of recurrent syntectonics structures in the context of regional tectonic evolution. The conveners believe that discussions by a variety of

researchers in structural geology, stratigraphy, geophysics, sedimentology, petrology, and paleontology will lead to a much needed unifying synthesis of syntectonics movement within depositional basins on continental crust.

The conference location in the high San Juan Mountains of southwestern Colorado presents an excellent opportunity to examine a variety of syntectonics tectonic features of Precambrian through Paleozoic age. Classic relationships between sedimentary facies, unconformities, and recurrent basement faulting are well exposed. A one-day field trip in mid-conference will allow for the discussion of critical concepts of syntectonics tectonics "on the outcrop."

To maximize interactions of disciplines and individual experience, the conference will include some formal presentations, and ample time will be devoted to open discussions. A comprehensive treatment of syntectonics structures is long overdue, and the excellent conference facility and superb outcrops in the most beautiful alpine region of Colorado should be a stimulus to a productive week.

Prospective participants should send a letter of application stating (1) their experience in the topic, (2) areas in which they might expect to contribute, and (3) their expectations for participation to William A. Thomas, Department of Geology, Box 1945, University of Alabama, University, AL 35486. Applications are due by May 1, 1986. The registration fee, including food, lodging, and field trip, will be about \$525. Limited support will be available for a few graduate students who are actively involved in research related to syntectonics tectonics.

Application for participation in a Penrose Conference

Title of Penrose Conference _____

Your name and title _____

Organization _____

Mailing address _____

Street or P.O. Box

City and State

Zip Code

Telephone number _____

Area Code

Number

Field of interest _____

Please state briefly what your interest and experience have been with regard to the conference topic.

Searching for a new geoscientist?

When was the last time you hired a new employee? Do you remember how much time and effort you wasted in your search for a qualified geoscientist? Let the GSA computerized search file make your job easier.

How does it work? Complete the Employer's Request for Earth Science Applicants Form on the following page. Remember to specify educational and professional experience requirements as well as the specialty area or areas of expertise your applicant should have. The GSA computer will take it from there.

You will receive a printout that includes the applicants' names, addresses, phone numbers, areas of specialty, type of employment desired, degrees held, years of professional experience, and current employment status. In 1986, the cost of a printout of one or two specialty codes is \$125. (For example, in a recent job search for an analyst of inorganic materials, the employer requested the specialty codes of geochemistry and petrology.) Each additional specialty is \$45. A printout of the entire applicant listing in all specialties is available for \$350. If you have any questions about your personalized computerized search, GSA's Membership Department will assist you.

The GSA Employment Service is available year long. However, GSA also conducts the Employment Interview Service each fall in conjunction with the Society's Annual Meeting (this year in San Antonio, Texas, November 10-13). You may rent interview space in half-day increments from GSA. Our staff will schedule all interviews with applicants for you, the recruiter. In addition, GSA offers a message service, complete listing of applicants, copies of resumes at no additional charge, and a posting of all job openings.

Looking for a new job?

Are you looking for a new position in the field of geology? The GSA Employment Service offers an economical way to find one. Potential employers use the service to find the qualified individuals they need.

You may register any time throughout the year. Your name will be provided to all participating employers who seek individuals with your qualifications. If possible, take advantage of GSA's Employment Interview Service, which is conducted each fall in conjunction with the Society's Annual Meeting. The service brings potential employers and employees together for face-to-face interviews. Mark your calendar for November 10-13 for the 1986 GSA Annual Meeting in San Antonio, Texas.

To register, complete the application form on the following page, prepare a one- to two-page resume, and mail it with your payment to the address given below. One-year listing for GSA Members and Student Associates in good standing: \$25, non-members: \$50.

Note: If you plan to interview at the GSA Annual Meeting, GSA must receive your material **no later than August 25, 1986**. If we receive your materials by August 25, your record will be included in the information the employers receive prior to the meeting. Submit your forms early to receive maximum exposure! Don't forget to indicate on your application form that you would like to interview in November. Good luck with your job search!

For additional information and submission of forms, please contact Clara Hodgson, Membership Coordinator
Geological Society of America
P.O. Box 9140, Boulder, CO 80302 (303) 447-2020

APPLICANT AND EMPLOYER FORMS ARE BACK TO BACK ON THE FOLLOWING PAGES →

MEETINGS

Prospectors and Developers Association 54th Annual Convention, March 9-12, 1986, Toronto, Ontario. Information: Prospectors and Developers Association, Suite 420, 74 Victoria St., Toronto, Ontario, Canada M5C 2A5; (416) 361-1969.

Symposium on Geochemistry of the Earth Surface and Processes of Mineral Formation, March 16-22, 1986, Granada, Spain. Information: R. Rodriguez Clemente, National Museum of Natural Sciences, c/o Jose Gutierrez Abascal, 2, 280006 Madrid, Spain; telephone (91) 2.62.25.13.

Fourth Federal Sedimentation Conference, March 24-27, 1986, Las Vegas, Nevada. Information: Doug Glysson, U.S. Geological Survey, 412 National Center, Reston, VA 22092; (703) 860-6834.

The Global Ocean: Its Chemistry and Resources, March 24-29, 1986, Woods Hole, Massachusetts. Information: P. A. Meyers, Oceanography Program, University of Michigan, 2455 Hayward Ave., Ann Arbor, MI 48109; (313) 764-0597.

Geochemistry and Mineralisation of Proterozoic Volcanic Suites, April 2-5, 1986, Nottingham, England. Information: Tim Pharaoh, Deep Geology Research Group, British Geological Survey, Keyworth, Nottingham NG12 5GG, England.

International Symposium on Coal and Coal-bearing Strata, April 8-11, 1986, London. Information: A. C. Scott, Geology Dept., Chelsea College, 552 King's Road, London SW10 0UA, England.

Experimental Mineralogy and Geochemistry: Applications to Petrology and Ore Deposits, April 17-19, 1986, Nancy,

France. Information: A. Weisbrod, E.N.S.G., B.P. 452, 54001 Nancy Cedex, France.

Arizona-Nevada Academy of Science 30th Annual Meeting, April 19, 1986, Glendale, Arizona. Information: Jim Bales, 8643 E. Buena Terra, Scottsdale, AZ 85253; (602) 949-1549.

International Symposium on Environmental Geotechnology, April 21-24, 1986, Allentown, Pennsylvania. Information: H. Y. Fang, Geotechnical Engineering Div., Dept. of Civil Engineering, Lehigh University #13, Bethlehem, PA 18015; (215) 861-3549 or 3520.

Texas A&M Geodynamics Research Program Symposium: Mesozoic and Cenozoic Plate Tectonic Reconstructions, April 23-25, 1986, College Station, Texas. Information: Geodynamics Research Program, Texas A&M University, College Station, TX 77843-3114; (409) 845-8477.

32nd Institute on Lake Superior Geology, April 29-May 4, 1986, Wisconsin Rapids, Wisconsin. Information: Jeffrey K. Greenberg, Wisconsin Geological Survey, 3817 Mineral Point Rd., Madison, WI 53705; (608) 263-7385.

New Perspectives in Basin Analysis: A Symposium in Honor of Francis J. Pettijohn, May 8-9, 1986, Minneapolis, Minnesota. Information: Karen Kleinspehn or Chris Paola, Dept. of Geology and Geophysics, 310 Pillsbury Dr. SE, Minneapolis, MN 55455; (612) 373-4078.

(continued on p. 61)



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EMPLOYER'S REQUEST FOR EARTH SCIENCE APPLICANTS

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Name _____ Date _____

Organization _____

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SPECIALTY CODES (see list below)

List the specialty code numbers that you wish to order, or check here if you want entire file of applicants in ALL specialties.

1. _____ 2. _____ 3. _____ 4. _____ 5. _____ 6. _____

POSITION DATA: What position(s) do you expect to fill? _____

In what area(s)? _____

Degree requirements _____ Number of positions available _____

SPECIALTY CODES

100. Economic Geology	224. stable isotopes	352. statistical geology	501. exploration	630. Science Editing
101. coal geology	225. geochronology	400. Mineralogy	502. subsurface	650. Sedimentology
102. geothermal, etc.	250. Geomorphology	401. crystallography	stratigraphy	651. sedimentary processes
103. metallic deposits	300. Geophysics	402. clay mineralogy	520. Petrology	652. sedimentary environments
104. nonmetallic deposits	301. seismic	410. Museum (curator)	521. igneous	720. Stratigraphy
105. mining geology	302. gravity/magnetics	420. Oceanography	522. metamorphic	750. Structural Geology
120. Engineering Geology	303. seismicity	421. marine geology	523. sedimentary (clastic)	751. tectonics
150. Environmental Geology	304. paleomagnetism	422. coastal geology	524. sedimentary (carbonate)	752. tectonophysics
160. Public Education & Communication	320. Hydrogeology	450. Paleontology	525. experimental	753. rock mechanics
200. General Geology	321. hydrochemistry	451. invertebrate	550. Planetology	800. Volcanology
220. Geochemistry	322. ground water	452. vertebrate	575. Quaternary Geology	
221. organic	323. surface water	453. micropaleontology	600. Regional Geology	
222. high temperature	330. Library	454. paleobotany	620. Remote Sensing	
223. low temperature	350. Mathematical Geology	455. paleoecology	621. photogeology	
	351. computer science	500. Petroleum Geology	622. photogrammetry	

Applicants seeking employment in:

- Academic
 Government
 Industry
 Other _____

Minimum degree required

- None
 B.A. or B.S.
 M.A. or M.S.
 Ph.D

Minimum professional experience

- None
 1-5 yrs.
 6-plus

Experience desired (yrs.)

	None	1-5	6-plus
Administrative	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Exploration/Production	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
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Employment in: U.S. only U.S. with foreign assignments Either

Foreign Languages: French German Russian Other _____ Not required

I am interested in interviewing applicants through the GSA Employment Service at the 19 _____ Annual Meeting in _____.

See attached sheet for current fee schedule.

1. I agree to use this service for valid recruiting purposes.
2. I agree that no placement charges will be assessed to any applicant participating in the GSA Employment Matching Service.

Total fee enclosed\$ _____
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EXPERIENCE

Must use specialty codes listed below. Choose three that best describe your expertise in order of importance.

* 1. _____ 2. _____ 3. _____

Interested in

- Academic
 Government
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TYPE OF POSITION DESIRED

Specific interest

- Administration
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Will accept employment in

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Choose one from codes listed below _____ **YEARS EXPERIENCE IN THIS SPECIALTY** _____

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Give number of years experience for any of the following that are applicable:

Administrative _____ Exploration/Production _____ Field _____ Research _____ Teaching _____ Total geological working experience _____

KNOWLEDGE OF FOREIGN LANGUAGES: French _____ ; German _____ ; Russian _____ ; Spanish _____ ; Other _____

ACADEMIC TRAINING

College or University	Degree (rec'd or expected)	Year	Major	Minor

Postgraduate work beyond highest degree in (field) _____ **Number of years** _____

SPECIALTY CODES

Select those that best describe your ability. Use codes in bold face only when other breakdowns are inadequate.

100. Economic Geology	224. stable isotopes	352. statistical geology	501. exploration	630. Science Editing
101. coal geology	225. geochronology	400. Mineralogy	502. subsurface	650. Sedimentology
102. geothermal, etc.	250. Geomorphology	401. crystallography	stratigraphy	651. sedimentary processes
103. metallic deposits	300. Geophysics	402. clay mineralogy	520. Petrology	652. sedimentary environments
104. nonmetallic deposits	301. seismic	410. Museum (curator)	521. igneous	720. Stratigraphy
105. mining geology	302. gravity/magnetics	420. Oceanography	522. metamorphic	750. Structural Geology
120. Engineering Geology	303. seismicity	421. marine geology	523. sedimentary (clastic)	751. tectonics
150. Environmental Geology	304. paleomagnetism	422. coastal geology	524. sedimentary (carbonate)	752. tectonophysics
160. Public Education & Communication	320. Hydrogeology	450. Paleontology	525. experimental	753. rock mechanics
200. General Geology	321. hydrochemistry	451. invertebrate	550. Planetology	800. Volcanology
220. Geochemistry	322. ground water	452. vertebrate	575. Quaternary Geology	
221. organic	323. surface water	453. micropaleontology	600. Regional Geology	
222. high temperature	330. Library	454. paleobotany	620. Remote Sensing	
223. low temperature	350. Mathematical Geology	455. paleoecology	621. photogeology	
	351. computer science	500. Petroleum Geology	622. photogrammetry	

* **Résumé must be attached, limited to two pages, typewritten on one side only, to be acceptable for reproduction to employers. Include your name, address, and phone number; concise details of work experience; and majors/minors on degrees.**

* **Fee: \$25 if you are a Member or Student Associate of GSA in good standing (Member # _____) \$50 if you are not a member of GSA. Payment in U.S. funds (check, money order, or charge information MUST ACCOMPANY FORM). MAKE CHECK PAYABLE TO THE GEOLOGICAL SOCIETY OF AMERICA.**

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I will attend the 19____ GSA Annual Meeting in _____

* **SIGNATURE (required)**

* **THESE ITEMS ARE ABSOLUTELY NECESSARY TO PROCESS THIS APPLICATION**

This application will be active for 1 year

MEETINGS (continued from p. 58)

Geological Association of Canada—Mineralogical Association of Canada Annual Meeting, May 19-21, 1986, Ottawa, Ontario. Information: J. A. Donaldson, Dept. of Geology, Carlton University, Ottawa, Ontario K1S 5B6, Canada; (613) 231-2630.

49th Annual Northeastern Friends of the Pleistocene meeting and field trip, May 23-25, 1986, Fort Kent, Maine. Information: J. S. Kite, Dept. of Geology and Geography, University of West Virginia, Morgantown, WV 26506; (304) 293-5603.

American Association for the Advancement of Science National Meeting, May 25-30, 1986, Philadelphia, Pennsylvania. Information: AAAS Meetings Office, 1333 H St., NW, Washington, DC 20005; (202) 326-6400.

First International Symposium on Dinosaur Tracks and Traces, May 23-24, 1986, Albuquerque, New Mexico. Information: David D. Gillette, New Mexico Museum of Natural History, P.O. Box 7010, Albuquerque, NM 87194.

Third International Conference on Geoscience Information, June 1-5, 1986, Adelaide, Australia. Information: Secretary, Organising Committee 3ICGI, Australian Mineral Foundation PB97, Glenside, South Australia 5065, Australia.

American Quaternary Association 9th Biennial Meeting, Environments at Glacier Margins—Past and Present, June 2-4, 1986, Champaign, Illinois. Information: Wayne M. Wendland, AMQUA Local Arrangements Committee, Illinois State Water Survey, 2204 Griffith Dr., Champaign, IL 61820; (217) 333-0729.

Geology of the Bahamas, Third Symposium, June 6-10, 1986, San Salvador, Bahamas. Information: H. Allen Curran, Dept. of Geology, Smith College, Northampton, MA 01063; (413) 584-2700, ext. 3943.

27th U.S. Symposium on Rock Mechanics, June 23-25, 1986, University, Alabama. Information: Howard L. Hartman, Dept. of Mineral Engineering, University of Alabama, P.O. Box 1468, University, AL 35486; (205) 348-6578.

6th International Conference on Geochronology, Cosmochronology and Isotope Geology, June 30-July 4, 1986, Cambridge, England. Information: Organising Committee, Sixth International Conference, Dept. of Earth Sciences, University of Cambridge, Downing St., Cambridge CB2 3EQ, England.

Geocongress '86, July 7-11, 1986, Johannesburg, South Africa. Information: Symposium Secretariat, S. 339, CSIR, P.O. Box 395, Pretoria, Republic of South Africa 0001.

International Field Conference on Proterozoic Geochemistry, July 13-19, 1986, central Colorado. Information: K. C. Condie, Dept. of Geoscience, New Mexico Institute of Mining and Technology, Socorro, NM 87801.

Deep Seismic Reflection Profiling of the Continental Lithosphere, July 15-17, 1986, Cambridge, England. Information: Bullard Laboratories, Madingley Rise, Madingley Rd., Cambridge CB3 0EZ, England.

International Symposium on Natural and Man-made Hazards, August 3-9, 1986, Rimouski, Quebec, Canada. Information: Mohammed El-Sabh, Dept. d'océanographie, Université du Québec à Rimouski, 310, avenue des Ursulines, Rimouski, Québec G5L 3A1, Canada; (418) 724-1755; Telex 051-31623.

Symposium on Intermontane Basins: Sedimentology, Tectonics, and Mineral Resources, August 4-7, 1986, Chiang Mai, Thailand. Information: S. D. Nio, Comparative Sedimentology

Div., State University of Utrecht, P.O. Box 80.021, 3508 TA Utrecht, Netherlands.

Third International Humic Substances Society Meeting, August 4-8, 1986, Oslo, Norway. Information: Egil Gjessing, Norwegian Institute for Water Research, P.O. Box 333, Blindern, Oslo 3, Norway, or Wesley L. Campbell, IHSS Standards & Reference Committee, 5293 Ward Rd., Arvada, CO 80002; (303) 236-3615.

Fifth International Symposium on Water-Rock Interaction, August 8-17, 1986, Reykjavik, Iceland. Information: Halldor Armannsson, Orkustofnun — National Energy Authority Grensasvegur 9, 108 Reykjavik, Iceland.

Fourth International Kimberlite Conference, August 11-15, 1986, Perth, Western Australia. Information: J. D. Lewis, Geological Survey of Western Australia, Mineral House, 66 Adelaide Terrace, Perth, Western Australia.

Energy Resources in Asia, August 11-14, 1986, Hong Kong. Information: Asian Research Service, G.P.O. Box 2232, Hong Kong. (Abstracts due March 11, 1986.)

Basins of Eastern Canada and Worldwide Analogues, August 13-15, 1986, Halifax, Nova Scotia. Information: Secretary, Dept. of Oceanography, Dalhousie University, Halifax, Nova Scotia, Canada B3H 4J1.

Friends of the Pleistocene, Midwest Cell, August 15-17, 1986, Lawrence, Kansas. Information: W. C. Johnson, Dept. Geography, University of Kansas, Lawrence, KS 66045; (913) 864-5143.

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NASA PLANETARY BIOLOGY SUMMER INTERNSHIPS

The Marine Biological Laboratory, Woods Hole, Massachusetts, invites applications from graduate students and seniors accepted in graduate programs for \$1,800 awards to participate in research at NASA centers and collaborating institutions during the summer. Application deadline: 1 April 1986. For information and applications, contact: Michael Enzien, Planetary Biology Intern Program, Department of Biology, Boston University, 2 Cummington Street, Boston, Mass. 02215. An Equal Opportunity/Affirmative Action Institution.

MEETINGS (continued from p. 61)

Circum-Pacific Energy and Mineral Resources Conference, August 17-22, 1986, Singapore. Information: Allen G. Hatley, c/o Gaffney, Cline & Assoc., P.O. Box 76309, Dallas, TX 75379.

International Association on the Genesis of Ore Deposits Seventh Symposium, August 18-22, 1986, Lulea, Sweden. Information: Inger Wallin, Centek Conference, S-951 87 Lulea, Sweden.

37th Annual Highway Geology Symposium, August 20-22, 1986, Helena, Montana. Information: Joseph E. Armstrong, Montana Dept. of Highways, 2701 Prospect Ave., Helena, MT 59620; (406) 444-6280. (Abstracts due March 15, 1986.)

Third U.S. National Conference on Earthquake Engineering, August 24-28, 1986, Charleston, South Carolina. Information: James E. Beavers, Martin Marietta Energy Systems, Inc., Bldg. 9733-4, M/S 2, P.O. Box Y, Oak Ridge, TN 37831.

International Symposium on Large Rock Caverns, August 25-28, 1986, Helsinki, Finland. Information: International Symposium on Large Rock Caverns, Technical Research Center of Finland, Lehtisaarentie 2, SF-00340 Helsinki, Finland; telephone 358-0-4566172; Telex 122972 vittha sf.

International Symposium on Remote Sensing for Resources Development and Environmental Management, August 25-29, 1986, Enschede, Netherlands. Information: Secretariat Symposium Commission VII, ISPRS, c/o ITC, P.O. Box 6, 7500 AA Enschede, Netherlands; Telex 44525.

Iberian Terranes and Their Regional Correlation, September 1-6, 1986, Oviedo, Spain. Information: E. Martinez-Garcia, Dept. de Geotectónica, Facultad de Geología, Universidad de Oviedo, 33005 Oviedo, Spain.

International Conference on Landscapes of the Southern Hemisphere, September 2-7, 1986, Adelaide, South Australia. Information: Jon Firman, C/-S.A. Dept. of Mines and Energy, P.O. Box 151, Eastwood, S.A. 5063, Australia.

Second International Conference on Paleoceanography, September 7-12, 1986, Woods Hole, Massachusetts. Information: W. A. Berggren, Dept. of Geology & Geophysics, Woods Hole Oceanographic Institution, Woods Hole, MA 02543.

1986 International Gas Research Conference, September 8-11, 1986, Toronto, Ontario. Information: 1986 International Gas Research Conference, c/o Gas Research Institute, 8600 West Bryn Mawr Ave., Chicago, IL 60631; (312) 399-8300, Telex 253812 or 503802.

International Association of Hydrogeologists Congress, September 8-15, 1986, Karlovy Vary, Czechoslovakia. Information: A. Zaporozec, AIH, 3817 Mineral Point, Rd., Madison, WI 53705.

Oceans '86 Conference and Exposition, September 23-25, 1986, Washington, D. C. Information: Oceans '86, Suite 500, 2000 Florida Ave., N.W., Washington, DC 20009; (301) 279-4700.

National Association of Geology Teachers East-Central Section Annual Meeting, September 26-28, 1986, Muncie, Indiana. Information: Harlan H. Roepke, Dept. of Geology, Ball State University, Muncie, IN 47306; (317) 285-8266.

Society of Economic Paleontologists and Mineralogists Third Annual Midyear Meeting, September 26-28, 1986, Raleigh, North Carolina. Information: Chuck Nittrouer, Dept. of Marine, Earth and Atmospheric Sciences, North Carolina State University, Raleigh, NC 27695. (Abstracts due April 1, 1986.)

17th Annual Binghamton Geomorphology Symposium on Aeolian Geomorphology, September 27-28, 1986, Guelph, Ontario. Information: William G. Nickling, Dept. of Geography, University of Guelph, Guelph, Ontario, Canada N1G 2W1; (519) 824-4120.

Geothermal Resources Council Annual Meeting, September 29-October 1, 1986, Palm Springs, California. Information: Geothermal Resources Council, P.O. Box 1350, Davis, CA 95617; (916) 758-2360.

American Association of Petroleum Geologists Eastern Section, October 2-4, 1986, Ann Arbor, Michigan. Information: Paul A. Catacosinos, Dept. of Geology, Delta College, University Center, MI 48710; (517) 686-9252.

Association of Engineering Geologists 29th Annual Meeting, October 5-9, 1986, San Francisco, California. Information: Alan D. Tryhorn, 1986 AEG Annual Meeting, GeoResource Consultants, Inc., 851 Harrison St., San Francisco, CA 94107; (415) 777-3177.

American Association of Stratigraphic Palynologists Annual Meeting (with Congrès Internationale du Microflore Paléozoïque), October 29-31, 1986, New York, New York. Information: Dan Habib, Graduate School of City University of New York, 33 West 42nd St., New York, New York 10036; (212) 790-4218.

Society of Economic Paleontologists and Mineralogists Mid-Continent Section Annual Field Conference, October 30-November 1, 1986, Ponca City, Oklahoma. Information: William A. Morgan, Conoco, Inc., 1000 S. Pine, Ponca City, OK 74603; (405) 767-2853.

International Conference on Coastal Engineering, November 9-14, 1986, Taipei, Taiwan. Information: Billy L. Edge, Cubit Engineering Limited, 207 East Bay St., Suite 311, Charleston, SC 29401.

Geological Society of America Annual Meeting—November 10-13, 1986, San Antonio, Texas. Information: Meetings Dept., GSA, P.O. Box 9140, Boulder, CO 80301; (303) 447-2020.

GSA 1986

Penrose Conferences

Southern Oklahoma Aulacogen, March 23-28, 1986, Quartz Mountain State Park, Oklahoma. Information: M. Charles Gilbert, Dept. of Geology, Texas A&M University, College Station, TX 77843; (409) 845-2464 or 845-2451.

Reefal Development in a Terrigenous Province, May 17-21, 1986, Veracruz, Mexico. Information: Paul R. Krutak, ARCO Exploration Co., P.O. Box 51408, Lafayette, LA 70505; (318) 264-4452.

Miocene Reconstruction of Southern California, May 30-June 4, 1986, Oxnard, California. Information: Peter W. Weigand, Dept. of Geological Sciences, California State University, Northridge, CA 91330; (818) 885-3541.

Migmatites and Crustal Melting, June 8-13, 1986, Amherst, Massachusetts. Information: Robert J. Tracy, Dept. of Geology and Geophysics, Yale University, New Haven, CT 06511; (203) 436-3539.

Mechanisms of Reservoir Diagenesis and Their Geological Constraints, June 8-13, 1986, Cannes, France. Information: G. Michel Lafon, EXXON Production Research Company, P.O. Box 2189, Houston, TX 77252-2189; (713) 965-4688.

(continued)

CLASSIFIED ADVERTISING

Ads (or cancellations) for the April issue must reach the GSA office by March 15. Contact Advertising Department (303) 447-2020.

Per line per issue	1x	3x	6x	12x
Situations Wanted:	\$1.25	\$1.10	\$.95	\$.85
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Code number \$2.75 extra.				

Agencies and organizations may submit purchase order or payment with copy. Individuals must send prepayment with copy. To determine cost, count 44 characters per line, including all punctuation and blank spaces.

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.

Situations Wanted

HYDROGEOLOGIST/GEOHYDROLOGIST, MS. 9 years of experience: aquifer mechanics, geochemistry, computer modeling, resource evaluation, supply design, monitoring, contamination cleanup. Seeks research, industry or regulatory position. Reply code #1031.

EXPERIENCED GEOLOGIST. Science Educator seeks a position in undergraduate instruction, training, or public relations. Background includes graduate degrees in geology, science education, and instructional systems technology. Experienced in mineralogy, geomorphology, and stratigraphy as well as media and message design. An innovator looking for a new challenge. Resume upon request. Reply code #1032.

MEETINGS

Penrose Conferences (continued)

Synsedimentary Tectonics, September 7-12, 1986, Durango, Colorado. Information: William A. Thomas, Dept. of Geology, University of Alabama, University, AL 35486; (205) 348-1880.

The Construction of Geological Cross Sections: Techniques, Assumptions, and Methods, October or November 1986, New Paltz, New York. Information: Peter A. Geiser, Dept. of Geology and Geophysics, University of Connecticut, Storrs, CT 06268; (203) 486-4432 or 4433.

Sections

Northeastern, March 12-14, 1986, Kiamesha Lake, New York
Cordilleran, March 25-28, 1986, Los Angeles, California
South-Central/Southeastern, April 2-5, 1986, Memphis, Tennessee
North-Central, April 24-25, 1986, Kent, Ohio
Rocky Mountain, April 30-May 2, 1986, Flagstaff, Arizona

Annual Meeting, November 10-13, 1986, San Antonio, Texas.

1987 Penrose Conference

Exposed Cross Sections of the Continental Crust, spring 1987, southeastern Ontario. Information: David M. Fountain, Dept. of Geology and Geophysics, University of Wyoming, Laramie, WY 82071; (307) 766-6299.

HAZARDOUS WASTE GEOSCIENTIST. B.S. Earth Science, M.S. Geophysics, 4 years geology lab work, 2 years seismic system operation, 1.5 years U.S. N.R.C. waste management. Seeks position in environmental geoscience field in the New England area. Please reply to Ben at (617) 927-5163.

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Deadline for application: March 27th. Appointment will begin in August 1986.

Send a resume, brief description of teaching and research interest, transcripts and three letters of recommendation to: Dr. Florentin Maurrasse, Department of Geology, Florida International University, Tamiami Campus, Miami, FL 33199. Florida International University is a member of the State University System and an Affirmative Action/Equal Opportunity Employer.

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Consultants

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1987

Hawaii Symposium on How Volcanoes Work, January 19-23, 1987, Hilo, Hawaii. Information: Robert Decker, U.S. Geological Survey, MS 910, 345 Middlefield Rd., Menlo Park, CA 94025.

International Symposium on Granites and Associated Mineralizations, January 21-31, 1987, Salvador, Brazil. Information: Augusto J. Pedreira, ISGAM, SME-CPM, Rua Ceara, 3-Pituba, 40.000, Salvador, Bahia, Brazil.

Canadian Reef Research Symposium, January 27-30, 1987, Banff, Alberta, Canada. Information: Canadian Reef Research Symposium, University of Calgary, Conference Office, 2500 University Dr. N.W., Calgary, Alberta T2N 1N4, Canada.

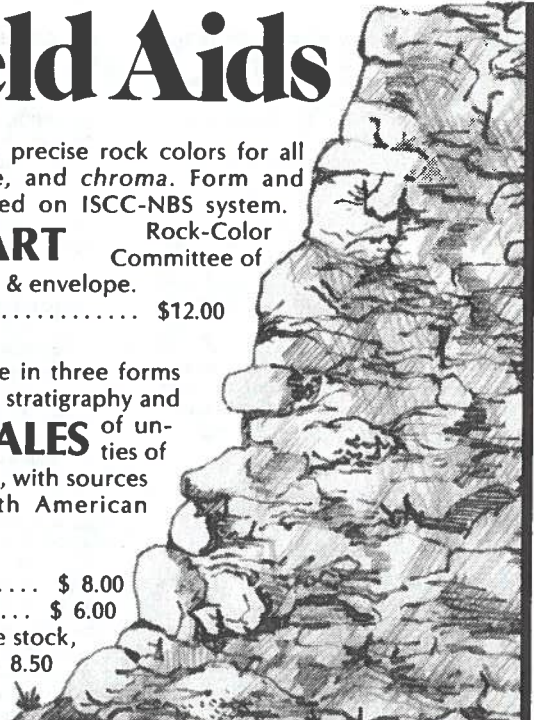
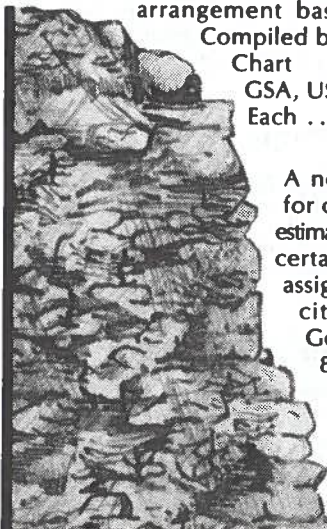
Coastal Sediments '87, May 12-14, 1987, New Orleans, Louisiana. Information: Nicholas C. Kraus, USAE Waterways Experiment Station, Coastal Engineering Research Center, P.O. Box 631, Attn. WESCR-P, Vicksburg, MS 39180-0631. (*Abstracts due April 30, 1986.*)

Sixth International Congress on Rock Mechanics, August 31-September 3, 1987, Montreal, Quebec, Canada. Information: J. Franklin, Dept. of Earth Sciences, University of Waterloo, Waterloo, Ontario N2L 3G1, Canada.

XI International Congress of Carboniferous Stratigraphy and Geology, September 7-11, 1987, Beijing, China. Information: Yang Jingzhi, Nanjing Institute of Geology and Paleontology, Academia Sinica, Nanjing, China. (*Abstracts due March 15, 1986.*)

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June 13 is Abstracts Deadline for the Annual Meeting in San Antonio

Abstracts must be typed on 1986 abstract forms, available from Abstracts Secretary, Geological Society of America, P.O. Box 9140, Boulder, CO 80301 [or call (303) 447-8850]. Volunteered abstracts should be mailed to the same address in time to arrive on or before June 13, 1986.

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