Phoenix Draws 5201 for 1987 GSA Annual Meeting
by Sue Beggs
GSA Meetings Manager

General Chairman Bill Dickinson predicted Arizona would be a popular site for the 1987 Annual Meeting. When we were first invited by Bill’s “Team Phoenix,” we agreed—in principle. He promised there would be superb excursions to classic localities led by top-notch leaders. He was right. He promised a technical program that would excite our interest and expand our knowledge of the Southern Cordillera and the Greater Southwest. He was right.

It’s only now in the various quantitative measures of a meeting’s success that we actually see how accurate he was. This turned out to be a record-breaking meeting in many ways:

- Highest number of abstracts presented ............... 1904
- Highest number of field trips offered ................. 34
- Highest number of exhibitor booths ................. 212
- Highest number of short course participants .......... 474

and it was the first time GSA has held an Annual Meeting in Arizona.

**REGISTRATION**

<table>
<thead>
<tr>
<th></th>
<th>Preregistered</th>
<th>On Site</th>
<th>Total</th>
</tr>
</thead>
<tbody>
<tr>
<td>Professionals</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Member</td>
<td>1900</td>
<td>450</td>
<td>2350</td>
</tr>
<tr>
<td>Nonmember</td>
<td>270</td>
<td>164</td>
<td>434</td>
</tr>
<tr>
<td>Member, one day</td>
<td>30</td>
<td>66</td>
<td>96</td>
</tr>
<tr>
<td>Nonmember, one day</td>
<td>19</td>
<td>52</td>
<td>71</td>
</tr>
<tr>
<td>Students</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Member</td>
<td>565</td>
<td>177</td>
<td>742</td>
</tr>
<tr>
<td>Nonmember</td>
<td>191</td>
<td>107</td>
<td>298</td>
</tr>
<tr>
<td>Member, one day</td>
<td>11</td>
<td>25</td>
<td>36</td>
</tr>
<tr>
<td>Nonmember, one day</td>
<td>11</td>
<td>51</td>
<td>62</td>
</tr>
<tr>
<td>Guests</td>
<td>248</td>
<td>39</td>
<td>287</td>
</tr>
<tr>
<td></td>
<td>3245</td>
<td>1131</td>
<td>4376</td>
</tr>
<tr>
<td>Exhibitors and others</td>
<td>568</td>
<td>257</td>
<td>825</td>
</tr>
<tr>
<td></td>
<td>3813</td>
<td>1388</td>
<td>5201</td>
</tr>
<tr>
<td>Attendance in 1986</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Increase over 1986</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Previous high in attendance (1984)</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

**ABSTRACTS**

<table>
<thead>
<tr>
<th></th>
<th>Submitted</th>
<th>Presented</th>
</tr>
</thead>
<tbody>
<tr>
<td>Symposia</td>
<td>333</td>
<td>331</td>
</tr>
<tr>
<td>Volunteered (poster and oral)</td>
<td>2005</td>
<td>1573</td>
</tr>
<tr>
<td></td>
<td>2238</td>
<td>1904</td>
</tr>
</tbody>
</table>

Approximately two of every five persons at the meeting presented a paper.

- Previous high (1984) | 2074 | 1596 |
- Previous year total (1986) | .865 | 1515 |
- Volunteered papers accepted—1987 | 79% |
- 1986 | 75% |
- Poster presentations—1987 | 503 |
- 1986 | 430 |
- Concurrent sessions—1987 | 12 |
- 1986 | 10 |
- Half-day sessions—1987 | 101 |
- 1986 | 89 |

(continued on p. 2)
Annual Meeting (continued from p. 1)

FIELD TRIPS
Premeeting trips offered: 19
Postmeeting trips offered: 15
Trips canceled: 5
Field trip leaders: 98
Total number of participants: 852
Percent of total registration: 17%

Guides to the 1987 field trips are available in an excellent single volume. Those interested in the guidebook may contact: Arizona Bureau of Geology and Mineral Technology, 845 N. Park Avenue, Tucson, AZ 85719.

EXHIBITS
Number of exhibit booths: 212
Number of exhibitors: 148

GSA BOOKSTORE
Number of items sold: 1636

Volumes of sales doubled the previous high. New items available from the DNA project were the Centennial Field Guides for the Cordilleran, Rocky Mountain, Southeastern, and Northeastern Sections; Centennial Special Volume 2, Geomorphic Systems of North America; and the Magnetic Anomaly Map of North America (one of seven in the series of continent-scale maps).

PROFESSIONAL HORIZONS
Number of GSA short courses offered: 8
Number of attendees: 474
Increase in attendance over 1986: 107%
Short course manuals printed under GSA supervision: 5 (two of these had computer disks; one also had a set of 40 slides.)

EMPLOYMENT SERVICE
Number of employers: 30
Number of applicants at the meeting: 273
Number of interviews: 529
Types of jobs available: Corporate—11; Government—21; Academic—26

TEAMWORK
General Chairman Dickinson had the last word. He was right when he predicted 1987 GSA—Phoenix would be a great success. It was—and not only in the quantitative sense. It takes many factors to make a meeting run smoothly. All of the critical factors and almost all of the supporting factors worked to provide a hospitable environment for sharing the science and for meeting friends and colleagues.

More than 183 business and social functions took place above and beyond the 108 technical sessions. On two evenings, receptions were enjoyed by more than 3500 persons each evening. Close to another 1000 were entertained during the special event cookout. The scope of the physical space and the timing required to hold these activities can be the bane of 5000-person meetings. The environment will surely be less personal and the arrangements more open to error than in a less congested setting. Nevertheless, as we look at the overall comments, we know that this meeting went very well. Much credit is due to the local committee—Team Phoenix, to the dedicated and experienced headquarters staff, and to the friendly, cooperative people we worked with in Phoenix.

Memorial Preprints

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

John Stafford Brown, by Norman H. Donald, Jr.
Erling Dorf, by Sheldon Judson
Cordell Durrell, by E. M. Moores
Fritiof Melvin Fryxell, by Ann Boaden and Richard C. Anderson
Arthur Sidney Huey, by John Kilkeny
Robert Leeds Sutton, by George E. Ulrich
Neuman W. Thibault, by Neil N. Ault
Thomas Hampton Thornburn, by Herbert O. Ireland
Robert H. Tschudy, by D. J. Nichols

Vol. 10, no. 1 GSA News & Information January 1988

GSA NEWS & INFORMATION (ISSN 0164-5854) is the monthly newsletter of The Geological Society of America, Inc., P.O. Box 9140, Boulder, Colorado 80301. Second-class postage rates paid at Boulder, Colorado and additional mailing office. Postmaster: Send address changes to GSA News, Membership Coordinator, P.O. Box 9140, Boulder, CO 80301.


Prepared from contributions from the staff and membership. Executive Director: F. Michael Wahl; Managing Editor: Faith Rogers; Associate Editor: Lee Gladish; Production and Advertising Manager: James R. Clark; Marketing/Advertising Assistant: Ann H. Crawford; Assistant Production Manager: Meredith L. Larson; Production Assistants: Mona T. Gonzales, Joan E. Manly, and Barbara F. Smith.
CENTENNIAL NEWS
by Allison (Pete) Palmer

DNAG Progress: Publications Under Control

The latest word on the Gravity Anomaly Map of North America is that it will be printed in Canada in December and shipped to GSA for distribution, projected for January.

The Atlantic Continental Margin: U.S. was in final page proof as this was being written (Nov. 17) and went to the printer in early December. This book will probably be available in February.

The Centennial Field Guide for the South-Central Section continues to be delayed. If O. T. Hayward, Jim Jones, and Dave LeMone can complete their tasks soon, this will be the March DNAG book.

Sedimentary Cover of the Craton, edited by Larry Sloss, is very close to being completed. The critical chapter on the Illinois Basin came in early in November and received quick reviews. The revised text was expected by the end of November, and most other chapter revisions were also expected by about that time. If there are no further delays we project this as the April DNAG book.

The Seismicity Map of North America is into the color proof stage and will probably be ready for printing early in 1988.

Who's Next?

Ten more volumes of The Geology of North America are close to being finished. If you are an author in one of these volumes, and/or a colleague of one of the authors listed below whose substantive chapters are not yet completed and into review, perhaps you can offer some moral or material support to aid them in completing their commitment. Also, if you are an author who has not yet completed revision of a manuscript already through review, you can greatly aid the production process by getting your revision in and approved by your editors ASAP. All ten of these books can and should be finished and published before the Centennial meeting this fall, but all are substantially late. Most authors of, or contributors to, missing chapters received reminders in mid-October and were also contacted at the Phoenix GSA meeting.

The Caribbean Region: One substantive multi-author chapter, on northern South America, still needs its final contribution from Reg Shagam and translation of a Spanish text by Alino Bellizia.

The Appalachian and Ouachita Regions: Tectonic synthesis chapters by Bob Hatcher and George Viele are the only two substantive chapters not yet received for review. This volume also has several complex color plates, most of which are now in production.

The Eastern Pacific Region: Two substantive chapters, by Leroy Dorman and Dave McColloch, are still to be received. Roland Von Huene called in response to my mid-October letter to indicate that he was only about one work-day away from completing his second chapter for this volume.

The Precambrian: Conterminous U.S.: Three substantive regional multi-author chapters need parts by Doug Rankin, Ed Lidiak, Don Secor, Mitch Reynolds, and Lee Silver in order to be ready for review.

The Arctic Ocean Region: Only four substantive chapters, by Steve Blasco, Norm Hemiela, Jack Sweeney, and Art Grantz, need to be submitted for review for this volume. Fred Roots, in response to my mid-October letter, says the Weber/Roots chapter is all done except for making copies, and is imminently in the mail.

Nonglacial Quaternary Geology, Conterminous U.S., which was only initiated in the summer of 1985, just needs chapters by Jim Ingle, John Dohrenwend, John Hawley, Bill Wayne, and Roger Morrison to be fully into the review process.

Surface Water Hydrology: This volume is being handled through the review process by Reds Wolman and Charlie Riggs. All chapters have been seen by the editors, and only four remain to be revised and submitted to GSA for completion of this book.

The Gulf of Mexico Basin, which is being handled through the review process by Amos Salvador, still needs chapters by Ralph Kehle, Norm Sohl, Bill Galloway, Richard Nehring, and Amos Salvador. Drafting is well along on the other chapters at the Texas Bureau of Economic Geology, and Amos expects to begin sending chapters to GSA for processing as soon as the figures are ready.

The Cordilleran Orogen: U.S.: Six key substantive chapters have not yet been received for review. These include multi-author time-slice chapters from Dave Miller and from Bob Yeats and Bob Christiansen and topical chapters from Dave Engebretson, Jason Saleeby, Pete Lipman, and Clark Burchfiel.

Hydrogeology: This volume is being handled through the review process by Bill Back and Joe Rosenshein. Only eight substantive chapters out of 50 in the book have not been transmitted to GSA, and most of these have already been submitted and have been reviewed by the editors.

A Bit Further Back

The Cordilleran Orogen: Alaska, which is being handled by George Pfaffer, Hank Berg, and Dave Jones and the USGS Alaskan Geology Branch in Menlo Park, has a number of its chapters written and much of the drafting done. However, the editors have yet to see texts for eleven chapters, some with multiple authors. At the organizational meeting for this book in April 1982, many of these were first promised to be submitted in reviewable form by December 1984! In mid-November 1987, these authors were given a new and final deadline of February 1 to complete their long-standing commitments. The development of an (continued on p. 6)
Annual Meeting, Phoenix, Arizona

Photos by Faith Rogers
Timing of Pluton Emplacement and Deformation
Is Subject of 1988 Penrose Conference

A GSA Penrose Conference, Criteria for Establishing the Relative Timing of Pluton Emplacement and Regional Deformations, will be held September 10–15, 1988, in the western foothills of the Sierra Nevada, California. Convener are Othmar T. Tobisch and Scott R. Paterson, Earth Science Board, University of California, Santa Cruz, CA 95064, telephone (408) 429-3251, and Ron H. Vernon, School of Earth Science, Macquarie University, North Ryde, NSW 2116, Australia, telephone (02) 805-8413.

Geologists have long used radiometrically dated plutons to constrain dates of regional deformation and metamorphism. Knowing precise dates of such deformation and metamorphism is necessary for the development of tectonic models attempting to explain the evolution of orogenic belts. In the past, there has been a tendency to use the age of plutons without looking critically and in detail at the relations between the plutons and wall rock. This is due in part to the lack of rigorous criteria that allow the field geologist to differentiate between pre-tectonic, syntectonic, and post-tectonic intrusive bodies. Specifically, recent work on syntectonic and pre-tectonic intrusives in the Sierra Nevada, California, and Lachlan fold belt, Australia, by the convener and by other workers from around the world suggests that these bodies may show a remarkable range of characteristics and that their timing of emplacement is easily misinterpreted.

This conference is aimed at looking closely at the criteria used to establish the timing of pluton emplacement, the behavior of plutons during subsequent deformation, and more generally to look at the use of plutons in establishing dates of regional deformation and metamorphism in wall rocks. Although we wish to emphasize aspects of structural geology at the conference, the goals can only be established by contributions from several subdisciplines; thus, we have tentatively scheduled the following sessions: (1) recognizing primary and tectonic fabrics in plutons, (2) structural patterns in and around intrusions, (3) the relations between metamorphism and deformation of plutons and wall rocks, (4) emplacement mechanisms of plutons, and (5) radiometric dating of plutonic rocks and its application to the dating of structural events. The convener invite the participation of scientists actively involved in these or closely related fields.

The conference will consist of two full-day field trips and 2½ days of oral presentations, poster sessions, and discussions. The first field trip, led by Paul Bateman of the U.S. Geological Survey will examine the Early Cretaceous granodiorite of Dinkey Creek and Late Cretaceous Mt. Givens granodiorite at the Courtright intrusive zone, Sierra Nevada. This region provides a spectacular array of both igneous (flow fabrics, schlieren, mafic inclusion swarms) and tectonic (foliations, lineations, mylonites, highly deformed inclusions) fabrics and should provide impetus for plenty of discussion on distinguishing primary and tectonic structures. The second field trip will look at the characteristics of a syntectonic and several pre-tectonic intrusive bodies and their wall rocks recently studied by the convener in the foothills terrane of the Western Metamorphic belt. The pre-tectonic intrusions range from undeformed to examples where tectonic cleavages pass undeformed from wall rock to intrusion, whereas the syntectonic intrusion is a polydeformed body emplaced along a major ductile shear zone. We will examine the patterns of structures and metamorphism in and around these intrusive bodies, and we will look at the available U/Pb and 40Ar/39Ar ages, geochemistry and textures of mylonites in the intrusion, and the gravity, magnetic, and geothermometry data. This field trip should provide ample opportunity to discuss the wide range of characteristics of predeformational intrusions and how they can be misidentified as post-tectonic bodies.

The conference will be limited to 50–60 participants who are actively pursuing research on the above or closely related topics. Prospective participants should send a letter of application stating the relevance of their research to the conference to Scott R. Paterson, Earth Science Board, University of California, Santa Cruz, CA 95064. Deadline for applications is April 1, 1988. The registration fee is not yet determined; it will include food, lodging, field trips, and transportation to and from the airport in Fresno, California. Limited support will be available for qualified graduate students.

Phoenix Winners

5K/10K Race
GSA's fourth annual 5K/10K race, at El Dorado Park in Scottsdale on Wednesday, Oct. 28, produced the following winners:

5K Winners
Female Time Male Time
First Terri Ross 17:17 Todd Ririe 17:24
Second Diane Bellis 22:49 Todd Feeley 23:16
Third Emily Gloclecker 23:34 Terry Engelder 24:42

10K Winners
Female Time Male Time
First Vivian Graton 43:46 Ron Hershey 36:15
Second Carol Bruno 45:54 David Rothstein 36:49
Third Charlotte Allen 47:09 Daniel Barnett 37:16

Senior Winner
Frank Royse

Tennis Tournament Winners
GSA tennis players competed in a round-robin doubles tournament on Sunday, Oct. 25 in Phoenix. The 1987 winners are:

First Dick Mullen
Second Dane Picard
Third Ray Ingersoll

Congratulations to all our 1987 winners!
CALL FOR APPLICATIONS AND NOMINATIONS FOR
BULLETIN EDITORS

GSA solicits applications and nominations of two persons to serve as Editors of the Bulletin. The terms of the current Editors will end December 31, 1988, and the new Editors will begin three-year terms at that time. A phased transition should begin in the fall of 1988.

These are not salaried positions, but GSA pays expenses for secretarial assistance, mail, telephone, and travel to GSA headquarters. GSA headquarters staff conducts copy editing and production activities.

Interested persons should submit a résumé and a brief letter describing relevant qualifications, experience, and objectives. Nominations should include a letter and the nominee's written permission and résumé. Applications and nominations should be sent BEFORE FEBRUARY 22, 1988, to:

F. MICHAEL WAHL, EXECUTIVE DIRECTOR
GEOLOGICAL SOCIETY OF AMERICA
P.O. BOX 9140
BOULDER, COLORADO 80301

BULLETIN EDITOR DUTIES

1. Ensure that the Bulletin remains as one of the premier journals in the geological sciences.

2. Select and maintain an appropriate Board of Associate Editors.

3. Maintain expeditious manuscript flow.

4. Make decisions regarding acceptability of submitted manuscripts in concert with recommendations of reviewers and Associate Editors.

5. Advise authors about necessary revisions.

6. Organize the content and select cover design for each issue of the Bulletin.

7. Keep the Committee on Publications and the GSA headquarters staff informed about the flow of manuscripts and other Bulletin business.

8. Respond promptly to inquiries from authors and prospective authors.

EDITOR QUALITIES

1. Broad background and active research in the geological sciences with particular emphasis on regional geology (including geomorphology)/geophysics/geochemistry.

2. Good organizational skills.

3. Willingness to invest approximately one day per week.


5. Broad knowledge of the geological research activities of scientists both nationally and internationally.

6. Good English language skills.

7. Objectivity.

8. Scientific maturity.

9. Patience, courtesy, tact, and firmness in dealing with authors.
FINAL ANNOUNCEMENT
SOUTHEASTERN SECTION, GSA, Annual Meeting
April 6-8, 1988
Columbia, South Carolina

The Southeastern Section of the Geological Society of America will meet at the Radisson Hotel in Columbia, South Carolina, April 6-8, 1988, together with the Southeastern Section of the Paleontological Society. The meeting is sponsored by the Earth Sciences and Resources Institute and the Department of Geological Sciences, University of South Carolina, and by the South Carolina Geological Survey.

REGISTRATION
All persons participating in any events of the meeting must be registered.

Preregistration: You are urged to preregister to aid the local committee in making final plans. PREREGISTRATION FORMS, WITH PAYMENT, MUST BE POSTMARKED NO LATER THAN MARCH 4, 1988.

Complete the registration form and return it with a check or money order in U.S. funds, payable to Southeastern GSA. Those planning to go on the field trips must preregister by March 4, 1988. Refunds for canceled preregistrations will be made in full until March 4, 1988. After that date no refunds will be made except in the event of cancellation of a field trip.

On-Site Registration: Registration and pick-up of meeting materials by preregistrants will be from 5 to 8 p.m. on Wednesday, April 6, and from 7 a.m. to 5 p.m. on Thursday and Friday, April 7 and 8. Registration will be held on the Mezzanine of the Radisson Hotel Columbia.

WELCOMING PARTY
A welcoming party for those attending the meeting will be held on Wednesday, April 6, from 7:30 to 10 p.m. at the new South Carolina State Museum, located in a renovated historic textile mill on the banks of the Congaree River. Shuttle-bus service will be provided to and from the Radisson Hotel Columbia.

TECHNICAL PROGRAM
Technical sessions will be scheduled as oral presentations and poster sessions on Thursday, April 7, and Friday, April 8.

SYMPOSIA

2. Metallic Mineral Resources in the Southern Piedmont and Blue Ridge. P. Geoffrey Feiss, Department of Geology, University of North Carolina, Chapel Hill, NC 27514; W. Edwin Sharp, Department of Geological Sciences, University of South Carolina, Columbia, SC 29208.

3. Geologic Setting of the Appalachian Ultradelve Core Hole (ADCOH) Project. Richard T. Williams, Department of Geological Sciences, University of Tennessee, Knoxville, TN 37916.

4. Structural Geology of Ductile Shear Zones in the Southern Appalachian Mountains. Andy R. Bobyarchick, Department of Geography and Earth Sciences, University of North Carolina, Charlotte, NC 28223; Harmon D. Maher, Jr., Department of Geography and Geology, University of Nebraska, Omaha, NE 68182.

5. Geology of the Savannah River Plant Area, South Carolina and Georgia. Van Price, Savannah River Laboratories, Building 773-42A, Aiken, SC 29802; David R. Lawrence, Department of Geological Sciences, University of South Carolina, Columbia, SC 29208.


7. Mesozoic-Cenozoic Biogeography of the Southeastern United States. Joseph G. Carter, Department of Geology, University of North Carolina, Chapel Hill, NC 27514; Ralph Willoughby, South Carolina Geological Survey, Harbison Road, Columbia, SC 29210.

FIELD TRIPS
Field Trip Chairman is Donald T. Secor, Department of Geological Sciences, University of South Carolina, Columbia, SC 29208, (803) 777-4516.

Field trip preregistrants must also preregister for the meeting. If a trip is oversubscribed or canceled, the full trip fee will be refunded. Preregistration for field trips must be received by March 4, 1988, accompanied by full payment. Trips may be canceled if registration is insufficient. No trip refunds will be made after March 4, 1988.

All field trips will depart from and return to the Radisson Hotel Columbia. A single-volume guidebook will include road logs and stop descriptions for all trips except 1 and 5.

In addition to the premeeting and postmeeting field trips listed below, a half-day excursion to the Lake Murray spillway, the type locality for the Alleghanian orogeny in the eastern Piedmont, will be available the mornings and afternoons of April 7 and 8. The Lake Murray spillway is unquestionably the most spectacular outcrop in the eastern Piedmont of South Carolina. It exposes rock relations that were of crucial importance in the recognition of late Paleozoic (Alleghanian) deformation of the eastern Piedmont. Tickets for the excursion to the spillway will be available at the meeting. A $6 fee will be charged to cover transportation costs.

(continued on p. 9)
Southeastern Section (continued from p. 9)

Premeeting

1. Geological and Geotechnical Aspects of Hazardous Waste Disposal at the GSX Facility, Sumter, and at the Chem-Nuclear Facility, Barnwell, South Carolina. Steven Schamel, Earth Sciences and Resources Institute, University of South Carolina, Columbia, SC 29208, (803) 777-6484. One day, April 6.

This features a morning visit to the Chem-Nuclear facility near Barnwell, South Carolina, and an afternoon visit to the GSX hazardous waste facility near Sumter, South Carolina. Each site visit will begin with an introduction to the facility by company personnel; then we will tour the facility. Aspects of the geology of the plant site and the disposal and monitoring techniques utilized will be emphasized. YOU MUST PROVIDE YOUR OWN HARDHAT TO PARTICIPATE IN THIS TRIP.

Limit: 30; cost: $40, including lunch.

2. Exhalative (?) Gold Deposits in the South Carolina Slate Belt. Ed Sharp, Department of Geological Sciences, University of South Carolina, Columbia, SC 29208, (803) 777-6929; Geoffrey Feiss, Department of Geology, University of North Carolina, Chapel Hill, NC 27514, (419) 966-4516. One and one-half days, April 5-6.

This trip features leisurely visits to the Brewer and Haile gold mines during, respectively, the morning and afternoon of Tuesday, April 6. On Wednesday, April 5, we will visit the newly discovered gold deposit at Ridgeway, South Carolina, examining cores and any available pits and trenches. YOU MUST PROVIDE YOUR OWN HARDHAT TO PARTICIPATE IN THIS TRIP.

This trip leaves from and returns to the Radisson Hotel Columbia each day.

Limit: 90; cost: $55, including guidebook and two lunches.


This field trip will focus on the Alleghanian deformational history of the Brevard zone between Lenoir, North Carolina, and Georgia. In particular, we will examine evidence for dextral strike-slip and its overall role in the displacement history of the Brevard Zone. We will also see exposures of parts of the Rosman brittle fault system that have been overprinted on the ductile fabrics of the Brevard zone.

Limit: 45; cost: $165, including guidebook, one dinner, and lodging (two nights). Facilities will be available for purchasing lunches.

4. Neotectonics of the Charleston, South Carolina, Region. Don Colquhoun and Pradeep Talwani, Department of Geological Sciences, University of South Carolina, Columbia, SC 29208, (803) 777-2600/6449. One day, April 6.

This excursion will combine visits to geologic and paleoseismologic features in the lower Coastal Plain of South Carolina. These may be related to the Charleston earthquake of 1886 and/or earlier seismic events.

Limit: 45; cost: $55, including one lunch and admission to Magnolia Gardens.

Postmeeting

5. Geological and Geotechnical Aspects of Hazardous Waste Disposal at the GSX Facility, Sumter, and at the Chem-Nuclear Facility, Barnwell, South Carolina. Steven Schamel, Earth Sciences and Resources Institute, University of South Carolina, Columbia, SC 29208, (803) 777-6484. One day, April 9.

See trip 1 for description. YOU MUST PROVIDE YOUR OWN HARDHAT TO PARTICIPATE IN THIS TRIP.

Limit: 30; cost: $40, including lunch.

6. Barrier Islands and Tidal Inlets of the Central South Carolina Coast. Tim Kana and Jerry Sexton, Coastal Science and Engineering, Inc., P.O. Box 8056, Columbia, SC 29202, (803) 799-8949, and Department of Geological Sciences, University of South Carolina, Columbia, SC 29208, (803) 777-4535. Two days, April 9-10.

We will visit mesotidal beach-ridge barrier islands near Charleston, South Carolina: the Isle of Palms, Sullivans Island, and Seabrook Island. On the first day we will view a regressive barrier sequence, migrating inlet, and associated ebb-delta shoals and inlet bypassing processes. On the second day we will view an armored beach that was restored by inlet relocation and associated natural changes in the new inlet system.

On the way back, a stop will be made at the Columbia airport for those departing after 6 p.m.

Limit: 45; cost: $135, including two lunches and lodging (one night, downtown Charleston).

7. A Geological Transect Through the Suspect Terranes of the Appalachian Piedmont from the Fall Line Through the Inner Piedmont. Allen Dennis and Don Secor, Department of Geological Sciences, University of South Carolina, Columbia, SC 29208, (803) 777-4516; Steve Mittwede, South Carolina Geological Survey, Harbison Forest Road, Columbia, SC 29210, (803) 737-9440; Jack Garhan and Bill Ranson, Department of Geology, Furman University, Greenville, SC 29613, (803) 294-3363 or 3364. Two days, April 9-10.

This trip will begin along the Fall Line in the rocks of the Kiokkee belt, which were strongly deformed and metamorphosed during the late Paleozoic Alleghanian orogeny. We will then traverse the rocks of the exotic Carolina terrane in the Carolina slate and Charlotte belts. The latter part of the first day will be in the Kings Mountain belt along the boundary between the Carolina and Piedmont terranes. The second day will be spent in the Kings Mountain belt and in the rock of the Piedmont terrane in the Inner Piedmont belt.

On the way back, a stop will be made at the Columbia airport for those departing after 6 p.m.

Limit: 45; cost: $135, including two lunches and lodging (one night).

PUBLICATIONS

Additional copies of Abstracts with Programs and the field trip guidebooks may be purchased at the registration desk at the meeting.

PROJECTION EQUIPMENT

All slides used in presentations must be 2" × 2" and fit a standard 35-mm carousel tray and projector. Only one projector and one screen will be provided in each meeting room. Please plan your presentations accordingly and bring your own loaded carousel tray, if possible.

EXHIBITS

Geological exhibits from industrial, educational, and research organizations are invited. The exhibits will be on display adjacent to the meeting rooms in the Radisson Hotel Columbia on April 7 and 8.

(continued on p. 12)
PREREGISTRATION FORM
GSA Southeastern Section, Annual Meeting, April 6-8, 1988, Columbia, South Carolina

IMPORTANT
1. Full payment must accompany registration.
2. Register one: professional, student, or guest.
3. Your check will be your receipt. Copy this form for your records. If you wish to receive acknowledgement of your preregistration, please enclose a stamped, self-addressed envelope.

Please print or type

Name ________________________________ last first middle

Registered as: ___ Professional ___ Student ___ Guest

Affiliation ________________________________

Professional Address ________________________________

Phone: business (___) ___________________________ residence (___) ___________________________

GSA member: yes no Science teacher: yes no Speaker: yes no GSA Student Associate: yes no

PREREGISTRATION (before March 4, 1988)
GSA member or affiliate ........................................ $ 25 $
Science teacher ........................................ $ 10 $
Non-GSA member ........................................ $ 30 $
GSA Student Associate ........................................ $ 9 $
Non-GSA student ........................................ $ 12 $

REGISTRATION (after March 4, 1988)
GSA member or affiliate ........................................ $ 30 $
Science teacher ........................................ $ 12 $
Non-GSA member ........................................ $ 35 $
GSA Student Associate ........................................ $ 12 $
Non-GSA student ........................................ $ 15 $
Guest ........................................ $ 10 $

Paleontological Society Luncheon ........................................ $ 10 $

FIELD TRIPS
Pre-registration deadline for field trips is March 4, 1988. All field trip participants must also preregister for the meeting.

2. Exhalative(?!) Gold Deposits, South Carolina Slate Belt (April 5-6) ........................................ $ 55 $
3. Dextral Strike Slip in Displacement History of Brevard Zone (April 4-6) ........................................ $ 165 $
4. Neotectonics of the Charleston, South Carolina, Region (April 6) ........................................ $ 55 $
5. Geological and Geotechnical Aspect of Hazardous Waste Disposal, GSX, and Chem-Nuclear (April 9) ........................................ $ 40 $
6. Barrier Islands and Tidal Inlets, Central South Carolina Coast (April 9-10) ........................................ $ 135 $
7. Geological Transect Through Suspect Terranes of Appalachian Piedmont from Fall Line Through Inner Piedmont (April 9-10) ........................................ $ 135 $

TOTAL FEES ........................................ $

Enclose check or money order, U.S. funds, payable to Southeastern Section, Geological Society of America.
Mail to Liza Morris
Earth Sciences and Resources Institute
University of South Carolina
Columbia, SC 29208

PREREGISTRATION DEADLINE: MARCH 4, 1988
HOUSING FORM
Geological Society of America
Southeastern Section, April 6-8, 1988, Columbia, South Carolina
DEADLINE FOR RESERVATIONS: MARCH 14, 1988

Please complete only one form for EACH ROOM requested. Confirmation will be sent by the hotel to the person completing this form.

Name _____________________________________________________________
Address _________________________________________________________

Phone: business (___) residence (___)
Type of room requested:
___ Single $65
___ Double $65
___ Triple $65
___ Quadruple $65

(All rates subject to state taxes, currently totaling 7%) Check-in time: 3:00 pm
Check-out time: 12:00 noon

Name(s) of additional person(s) sharing room:

Arrival date: ___________________________ Time: ________________
Departure date: ________________________ Time: ________________
Deposit enclosed:
Check # __________________ Credit Card # _________________________
Amount $ ________________ Expiration date: ____________________________
Type of card:  □ American Express  □ Carte Blanche
□ Diner's Club  □ Discovery  □ MasterCard  □ VISA
Cardholder's name: ______________________ (please print)

Signature: _________________________________

Reservations will be held until 6:00 p.m. unless guaranteed or covered by deposit. Reservations received after 3/14/88 will be accepted on a space-available basis at regular (non-convention) rates.

Mail completed housing form to:
Radisson Hotel Columbia
Reservations Office
937 Assembly Street
Columbia, SC 29201
(800) 333-3333 or (803) 799-8200

GSA NEWS & INFORMATION, January 1988
Southeastern Section (continued from p. 9)

Rental fees for exhibit booths range from $150 for an educational exhibit to $350 for a commercial booth. For further information, please contact either Ed Sharp, Department of Geological Sciences, University of South Carolina, Columbia, SC 29208, (803) 777-6929, or Liza Morris, Earth Sciences and Resources Institute, University of South Carolina, Columbia, SC 29208, (803) 777-5910.

SPECIAL EVENTS

Welcoming Party. Wednesday, April 6, 7:30-10 p.m., South Carolina State Museum. Shuttle-bus service will be provided to and from the Radisson Hotel Columbia.

Archaeology Exhibit. "The First Egyptians" will be opening at the University of South Carolina's McKissick Museum on Friday, April 8. After its opening at McKissick, this exhibition will travel to major museums across the country, ending its tour at the Smithsonian. Organized by Michael Allen Hoffman of the Earth Sciences and Resources Institute, this exhibition will highlight Egypt before the rise of the Pharaonic dynasties.

All of the meetings listed below will be held at the Radisson Hotel Columbia.

GSA Southeastern Section Management Board Meeting. Wednesday, April 6, 5-7 p.m.

GSA Southeastern Section Campus Liaison Group Breakfast. Thursday, April 7, 7 a.m.

Paleontological Society Southeastern Section Luncheon and Business Meeting. Thursday, April 7, 12 noon.

GSA Southeastern Section Business Meeting. Thursday, April 7, 5 p.m.

GUEST ACTIVITIES

A variety of cultural, recreational, and educational activities is available in the Columbia area for guests and conventioners who choose to extend their visits. These activities include the award-winning Riverbanks Zoo, historic houses, and the Congaree Swamp National Monument. For additional information on guest activities, please contact Jeannie Kares at (803) 777-6484 or the Columbia Visitors' Bureau at (803) 254-0479.

TRAVEL

The Columbia Metropolitan Airport is served by American, Delta, Eastern, Piedmont, and United airlines. Columbia is centrally located in South Carolina, at the intersections of Interstate Highways 20, 26, and 77. From this location, either the Atlantic coast or the Blue Ridge Mountains can be reached in a few hours' drive.

HOUSING

A block of rooms for the meeting has been reserved at the Radisson Hotel, 937 Assembly Street, Columbia, SC 29201, (803) 799-8000. Rates for this meeting are $65 for single, double, triple, or quadruple accommodation. Reservations will be held only until 6 p.m. unless guaranteed by a one-night deposit or by approved credit card (American Express, Carte Blanche, Diner's Club, Discover, MasterCard, VISA). Complete the Housing Form and send it to the Radisson Hotel Columbia (address on form).

ROOM RESERVATIONS MUST BE RECEIVED BY MARCH 14, 1988.

Additional housing is available in the Columbia area. For more information, contact the Columbia Visitors' Bureau at (803) 254-0479.

CENTURY CHALLENGE

GSA FUNDATION

SHORT OF RESEARCH FUNDS?

We're working on the problem.

Give us a hand by joining the CENTURY CHALLENGE

Call the GSA Foundation
303-447-2020 • 800-GSA-1988
or mail contribution form to:
GSA FOUNDATION
3300 Penrose Place
P.O. Box 9140
Boulder, CO 80301-9974

To the Geological Society of America Foundation:

My Century Challenge payment preference is:
☐ check for $100 is enclosed
☐ check for $50 is enclosed. Please bill me for $50 next year.
☐ check for $25 is enclosed. Please bill me for $25 in each of the next three years.
☐ I recognize the strong need for research funds in our profession.
I am joining the Trustees as a Challenge Partner by enclosing my check for $________ (minimum $250).

Name

Address

Signature

GSA NEWS & INFORMATION, January 1988
CALL FOR APPLICATIONS AND NOMINATIONS FOR
GSA BOOKS SCIENCE EDITOR

GSA solicits applications and nominations of persons qualified to serve as GSA Books Science Editor. The term of the current Editor will end December 31, 1988, and the new Editor will begin a three-year term at that time. A phased transition should begin by September 1988.

This is not a salaried position, but GSA pays expenses for secretarial assistance, mail, telephone, and copying and for travel to meetings of the GSA Publications Committee twice each year. The GSA headquarters staff handles copyediting and production of books from accepted manuscripts.

Interested persons should submit a vita, a list of publications, and a letter describing relevant qualifications, experience, and objectives. Nominations should include a letter and the nominee’s written permission, vita, and publications list. Applications and nominations should be sent BEFORE MARCH 15, 1988, to:

F. Michael Wahl, Executive Director
Geological Society of America
P.O. Box 9140
Boulder, CO 80301

Duties

- Encourage submission of appropriate manuscripts or collections of manuscripts to GSA for Memoir, Special Paper, and Microform series (not Decade of North American Geology).
- Respond to inquiries, oral or written, about possible manuscripts.
- Inform prospective authors and volume editors about GSA policies and procedures.
- Appoint volume editor(s) and supervise selection of reviewers for multi-paper volumes.
- Select and recruit reviewers for single-paper volumes; send out manuscripts for review. Advise author(s) about necessary revisions.
- Inform volume editors on procedures for review and revision of papers.
- Review each proposed volume upon receipt of final draft from author(s) or volume editor(s). If volume is up to standard, forward it to GSA headquarters with a recommendation for publication.
- Keep the GSA Committee on Publications and the headquarters staff informed about the flow of manuscripts and other GSA book business.

The GSA Books Science Editor should have

- Strong, broad background in geological sciences.
- Good organizational skills.
- Willingness to invest the necessary time (sometimes 15–20 hours/week).
- Familiarity with many earth scientists and their work.
- Good English language skills.
- Objectivity regarding subject matter and author(s) and affiliation(s).
- Scientific maturity (but eyesight intact).
- Patience, courtesy, and tact in dealing with agitated authors and editors.
- Persistence in finding and recruiting suitable reviewers.

Applications Sought for Senior and Postdoctoral Research Associateships

The National Research Council announces the 1988 Resident, Cooperative, and Postdoctoral Research Associateship Programs for research in the sciences and engineering to be conducted in behalf of 28 federal agencies or research institutions, whose laboratories are located throughout the United States. The programs provide Ph.D. scientists and engineers of unusual promise and ability with opportunities to perform research on problems largely of their own choosing yet compatible with the research interests of the supporting laboratory.

Approximately 450 new full-time Associateships will be awarded on a competitive basis in 1988 for research in chemistry, earth, and atmospheric sciences; engineering and applied sciences; biological, health, and behavioral sciences and biotechnology; mathematics; space and planetary sciences; and physics. Most of the programs are open to both U.S. and non U.S. nationals and to both recent Ph.D. degree recipients and senior investigators.

Awards are made for one or two years; senior applicants who have held the doctorate at least five years may request shorter tenure. Annual stipends for recent Ph.D.s for the 1988 program year will range from $27,150 to $35,000, depending upon the sponsoring laboratory, and will be appropriately higher for senior Associates.

Reimbursement is provided for allowable relocation costs and for limited professional travel during tenure. The host laboratory provides the Associate with programmatic assistance including facilities, support services, necessary equipment, and travel necessary for the conduct of the approved research program.

Applications to the National Research Council must be postmarked no later than January 15, April 15, and August 15, 1988. Initial awards will be announced in March and April (July and November for the two later competitions) followed by awards to alternates later.

Information on specific research opportunities and federal laboratories, as well as application materials, may be obtained from the Associateship Programs, Office of Scientific and Engineering Personnel, GF1 Room 424-D3, National Research Council, 2101 Constitution Avenue, N.W. Washington, DC 20418, (202) 334-2760.
FINAL ANNOUNCEMENT
NORTH-CENTRAL SECTION, GSA, 22nd Annual Meeting
Akron, Ohio, April 21-22, 1988

The North-Central Section of the Geological Society of America will be hosted by the Department of Geology of the University of Akron and will meet concurrently with the North-Central Section of the Paleontological Society, the Great Lakes Section of the Society of Economic Paleontologists and Mineralogists, the National Association of Geology Teachers, and the Pander Society.

REGISTRATION
Registration is required for all those participating in any event, including technical sessions, exhibits, planned social events, and field trips. A discount is offered for those who use the forms accompanying this notice before March 25, 1988. Student registrants must present proper identification or verification to be eligible for student discounts. In-service K-12 earth science teachers will be permitted to pay student registration rate with a letter from their supervisor, on school district letterhead.

Preregistration. You are requested to register in advance so that the local committee can plan more efficiently. Your registration form and payment must be postmarked no later than March 25, 1988 to qualify for the reduced preregistration fees. Please complete the accompanying preregistration form and return it—with a check or money order payable to the University of Akron—to North-Central Section, Geological Society of America, Department of Geology, University of Akron, Akron, OH 44325.

On-Site Registration. Registration will be from 7 to 9 p.m. on Wednesday, April 20, at the welcoming party in the Ocasek Government Office Building. Thereafter, registration will take place on the first level of the Gardner Student Center (G.S.C.), University of Akron, in the Perkins Lounge from 8 a.m. to 4 p.m. Thursday and Friday, April 21 and 22. Preregistrants may pick up their folders and tickets at the registration desk. A limited number of tickets for special events will be available for those who did not preregister.

Requests for advance registration refunds will be honored until April 8, 1988, for all but field trip fees, which will be refunded only if the space can be resold.

TECHNICAL PROGRAM
Technical sessions and symposia will be held in the Gardner Student Center, University of Akron. Technical sessions will include paleontology, stratigraphy and sedimentology, hydrogeology, Quaternary geology and geomorphology, geophysics and remote sensing, structural geology and tectonics, engineering and environmental geology, and general geology. Oral and poster presentations will be accommodated.

SYMPOSIA
2. Geochemistry of Sediments. Samuel M. Savin, Case Western Reserve University.

8. Hydrogeology of Glacial Terrains. Lon C. Ruedisili, University of Toledo; John P. Szabo, University of Akron.

ABSTRACTS WITH PROGRAMS
All members of the North-Central Section of the Geological Society of America will have been mailed a copy of the 1988 North-Central Section Abstracts with Programs IF they have paid their dues and selected and paid for the North-Central Section Abstracts with Programs on their dues statement. Please bring your copy to the meeting. A limited number of copies will be available for purchase at the meeting.

PROJECTION EQUIPMENT
All slides must be 2" x 2" and fit a standard 35-mm carousel projector. Two projectors will be available in each meeting room. Please bring your own loaded carousel trays. The Speaker Ready Room is Chestnut B Room. Carousel projectors will be available for speakers to preview their slides. Speakers are asked to deliver carousel trays, labeled with the speaker's name, to the appropriate session projectionist 15 minutes before the session begins.

SMOKING, CAMERAS, AND SOUND-EQUIPMENT POLICY
Annual meeting policy prohibits the use of cameras or sound recording equipment at technical sessions and poster sessions. A no-smoking policy has been adopted by the Program Committee and will be followed in all meeting rooms for technical sessions.

EXHIBITS
Space will be available for educational, research, and commercial exhibits. Exhibits will be held in the lobby of the Gardner Student Center, where technical programs will be held. A single 8' x 10' booth costs $100 for the duration of the meeting. GSA and Ohio Geological Survey publications will be available for purchase. For additional information, contact Charles H. Carter, Department of Geology, University of Akron, Akron, OH 44325, (216) 375-7632.

SPECIAL EVENTS
Welcoming Party: A welcoming party will be held in the Ocasek Government Office Building, from 7 to 9 p.m. on Wednesday, April 20. The building is fashioned with Caledonian gray granite from St. Sebastian Quarry in Quebec. The University of Akron Steel Drum Band will entertain.

(continued on p. 15)
North-Central Section (continued from p. 14)

North-Central Section GSA Management Board Meeting: luncheon at noon in the Carnation Room, G.S.C., Friday, April 22.

Annual Banquet: in the Hilltop Dining Lounge at 7 p.m. on Thursday, April 21. Cost: $12. A brief business meeting of the North-Central Section, to be conducted immediately after the banquet, will be followed by a talk by Guy Sitler, President, Stocker and Sitler, Inc.

Society of Economic Paleontologists and Mineralogists Great Lakes Section Luncheon: in the Carnation Room, G.S.C., at noon on Thursday, April 21. The luncheon will be followed by the SEPM business meeting. Cost: $7.


GSA Campus Representatives Breakfast: in the Carnation Room, G.S.C., at 7 a.m. on Friday, April 22.

SPOUSE/GUEST PROGRAM
Information for individual guided tours and possibly group tours (depending on registration) will be available for the following:
Stan Hywet Hall (Old English Tudor mansion), Hourer House (Victorian style), Akron Museum of Art, Cleveland Museum of Art, Cleveland Museum of Natural History, Amish countryside (cheese factory, store, and restaurant), Pro-Football Hall of Fame, Quaker Square (specialty shops), and numerous other points of interest.
Cost: about $5 per person, depending on activity and number. Please indicate your interests on the registration form by checking those listed (only those requiring special arrangements are listed).

MEALS
Restaurants are in all hotels; food services of the Gardner Student Center as well as many others offer a wide variety within a few blocks of the university. (One popular site is the converted mill and silos of the original Quaker Oats Cereal Company, known as Quaker Square and listed in the National Historic Register.)

STUDENT AWARDS
The North-Central Section will award $100 each for a maximum of four of the best papers written and delivered exclusively by students. Prizes awarded for student papers with more than one author will be divided among the authors. The SEPM Great Lakes Section will award $50 and an SEPM publication to the best student paper in the session on stratigraphy and sedimentology or in the Sedimentary Iron Accumulation Through Geologic Time Symposium.

TRAVEL
Akron is served by many airlines at Akron-Canton and Cleveland-Hopkins airports. Airport Limousine Service provides fast and inexpensive service for the 16-mi and 40-mi trip to these two airports, respectively (regular fare to Akron-Canton is $8.25; to Cleveland-Hopkins, $10.25). By car, the area is served by Interstates 77 and 76. Parking is available for those who prefer to drive (see map, parking lot no. 8 on campus).

HOUSING
Blocks of rooms have been reserved at Holiday Inn Cascade and Hilton Quaker Square. Tomake reservations and to obtain the reduced rates indicated below, contact the Holiday Inn or Hilton Quaker Square directly and state that you will be attending the GSA meeting at the University of Akron. Rooms not reserved by March 21 will be released. A shuttle service between both hotels and the University of Akron Gardner Student Center will operate in the early mornings and late afternoons.

<table>
<thead>
<tr>
<th>Hotel</th>
<th>Rate</th>
</tr>
</thead>
<tbody>
<tr>
<td>Holiday Inn Cascade</td>
<td>$45 single plus</td>
</tr>
<tr>
<td>V Cascade Plaza</td>
<td>$76 double</td>
</tr>
<tr>
<td>Akron, OH 44308</td>
<td>$68 single</td>
</tr>
<tr>
<td>Phone: (216) 762-0661</td>
<td>$15 each additional person</td>
</tr>
<tr>
<td>Rate: $45 single plus</td>
<td>Plus 11.5% tax</td>
</tr>
<tr>
<td>$6 each additional</td>
<td>Plus 11.5% tax</td>
</tr>
<tr>
<td>person up to 4 total</td>
<td></td>
</tr>
</tbody>
</table>

Information concerning additional housing is available from: Akron-Summit Convention & Visitor Bureau, Inc., 1 Cascade Plaza, Akron, OH 44308, phone: (216) 376-4254.

FIELD TRIPS
All field trip participants must preregister and must also register for the meeting. Preregistration deadline is March 25, 1988. Trips may be canceled if registration is insufficient. No refunds will be made after April 15, 1988. All trips will depart at 8 a.m. (unless noted).

Premeeting
1. Late Devonian and Early Mississippian Distal Basin-Margin Sedimentation, Northern Ohio. Thomas L. Lewis. One day, Wednesday, April 20.

Clastic sediment influxes, derived from southeastern, eastern, and northeastern sources, prograded westward into a shallow basin in the northwestern margin of the Appalachian basin in Late Devonian and Early Mississippian time (Lewis, 1976, 1986). The distal part of the basin was delimited early by the western margin of the thinning, prograding Chagrin clastic wedge that provided a gentle northwest and west paleoslope that supplied and directed clastics of the lower Cleveland shale (Lewis, 1967, 1978). Westward, the basin likely shallowed near the axis of the Cincinnati-Findlay arch, which (although perhaps submerged and draped with black muds) provided lineation to the basin and isolated stagnant conditions in the basin (Lewis and Schwietering, 1971). Submergence with rising sea levels coupled with variation of amounts and rates of clastic-sediment input, diminution or diversion of supplies, faulting, and soft-sediment deformation within the distal basin accommodated the variable clastic influxes of the Bedford Formation and Berea Sandstone. Temporary emergence may have preceded upper Berea deposition on the basin shelf margin and locally, with uplift, provided repeated emergence features.

Limit: 25; cost: $30, including lunch.


Hardy Road Landfill has been operated by the City of Akron for nearly 20 years. Geologic features of the site include a buried valley more than 150 m deep and evidence of multiple glacial events. Leachate studies have not revealed a groundwater contamination problem. Lake sits underlie the course surficial drift. Explosion of methane gas in a private dwelling occurred offsite in 1984. Gas migration has been controlled with a collection system. A shutdown of the system for overhaul and improvement provided additional gas data.

Industrial Excess Landfill of Uniontown, Ohio is a Superfund site now undergoing extensive study by contractors for the
PREREGISTRATION FORM
GSA North-Central Section, Annual Meeting, April 21-22, 1988, Akron, Ohio

IMPORTANT
1. Full payment must accompany registration.
2. Register one—professional, student, or guest—per form.
3. Your check will be your receipt. Copy this form for your records.

Please print or type:

Name ____________________________

Registered as: ______ Professional ______ Student ______ Spouse/Guest

Spouse/Guest name for badge ____________________________

Affiliation abbreviate for name tag ____________________________

Professional Address _____________________________________________________________

City __________________________________ State __________ ZIP __________

Phone: ____________________________ business ____________________________ home ______

GSA member: yes no GSA Student Associate: yes no Speaker: yes no

Preregistration (postmarked March 25 or earlier)
Professional ____________________________ $ 30 ____________________________
Student ____________________________ $ 8 ____________________________
Teacher, K-12 ____________________________ $ 8 ____________________________

Registration (after March 25)
Professional ____________________________ $ 35 ____________________________
Student ____________________________ $ 10 ____________________________
Teacher, K-12 ____________________________ $ 10 ____________________________
Spouse/Guest ____________________________ $ 8 ____________________________

Annual Banquet (April 21) ____________________________ $ 12 ____________________________

Paleontological Society and Pander Society Joint Luncheon (April 22) ____________________________ $ 8 ____________________________
SEPM Great Lakes Section Luncheon (April 21) ____________________________ $ 7 ____________________________
GSA Campus Representatives Breakfast (April 22) ____________________________ NC

(Indicate the department you officially represent)
Put checkmark on fee line to indicate interest in any of the following:
Akron Museum of Art Visit ____________________________
Cleveland Museum of Natural History Visit ____________________________
Cleveland Museum of Art Visit ____________________________
Howe House Visit ____________________________
Quaker Square Visit ____________________________
Pro-Football Hall of Fame ____________________________
Amish Countryside ____________________________
Stan Hywet Hall ____________________________

Field Trips. Registration deadline: March 25
All field-trip registrants must also preregister for the general meeting.
Late Devonian and Early Mississippian Distal Basin-Margin Sedimentation (April 20) ____________________________ $ 30 ____________________________
Applied Environmental Geology in Northeast Ohio (April 23) ____________________________ $ 25 ____________________________
Upper Pennsylvanian Coals and Associated Rocks (April 23-24) ____________________________ $116 ____________________________
Glacial and Postglacial Deposits, Northeastern Ohio (April 23) ____________________________ $ 25 ____________________________
Geology of the Cuyahoga Valley National Recreation Area (April 23) ____________________________ $ 30 ____________________________
Middle Devonian Carbonate Rocks and Shales of North-Central Ohio (April 22-23) ____________________________ $114 ____________________________

TOTAL FEES
Make check or money order (U.S. funds) payable to The University of Akron ____________________________ $________

For registration discount, mail this preregistration form by March 25, 1988 to
North-Central Section
Geological Society of America
Department of Geology
University of Akron
Akron, OH 44325
North-Central Section  
(continued from p. 15)

Environmental Protection Agency. Ground-water contamination is a major concern. The site had been a gravel pit. Compacted lodgment till beneath the gravel, muck soil, and local topography has limited water-contamination problems.  
Limit: 25; cost: $25.

Postmeeting  

Special points of interest for observation, analysis, and collection include Allegheny-Conemaugh coals and associated rocks exposed in several strip mines and roadside/streamside outcrops; exposures of fluvial, deltaic, and possibly longshore systems; marginal lagoons and channels; and continuous and lenticular marine, brackish, and freshwater limestones, mudstones, and coarser clastics. Observation and discussions of special depositional and structural features augment the study of exposures where lateral variability of sedimentation and shifting environments of deposition are clearly exposed and where regional faults appear to have modified sedimentation penecontemporaneously. One remarkable locality (strip pit) which has been intensively studied is a partially freshwater through brackish to marine section above the Upper Freeport Coal (?). Strata contain an assortment of cockroaches, spiders, millipedes, shark teeth, lungfish scales, cephalopods, brachiopods, corals, snails, clams, beautiful fern and seed fern fronds, and branches of one of the earliest conifers known in North America. We will visit the classic Linton Cannel Coal site (Upper Freeport) vertebrate locality, from which 40 genera from 6000 specimens of fish, tetrapods, and reptiles have been collected, and we will evaluate recent structural and depositional interpretations. Two mid-Conemaugh coal-ball localities near Steubenville which have a very well-studied diverse flora will provide opportunity to see coal balls in place.  
Limit: 40; cost: $116, including 2 lunches, lodging (shared, one night).


Recent high levels of Lake Erie have produced severe erosion and mass wasting along the shore. At the same time it has produced excellent exposures of glacial and postglacial deposits east of Cleveland, Ohio. Glacial deposits consist of an older (?) “coastal till” and the late Wisconsinan Ashtabula Till, whereas postglacial deposits generally are gravels, sands, and silts. Lithofacies of the Ashtabula Till include sheared, massive diamictics and reworked sediments. Some lithofacies of postglacial sediments represent deltaic environments.  
Limit: 25; cost: $25, including lunch.

5. Geology of the Cuyahoga Valley National Recreational Area. Robert G. Corbett, Barbara M. Manner (National Association of Geology Teachers). One day, Saturday, April 23.

Shallow marine black shales of Devonian age, offshore marine, coastal, fluvial, and marine sedimentary rocks of Mississippian age, and braided stream sandstones of Pennsylvania age are exposed in stream valleys, and stratified and unstratified deposits of Wisconsin age cap the area in and adjacent to the CVNRA. We will consider three contradictory hypotheses on the origin of the Berea Formation: (1) continental lower and marine upper, (2) eolian, and (3) fluvial and tidal channel. Geologic terrain and geomorphic history have influenced development of seven habitats. Human activity is minimal; the sites are accessible and protected from future development, and the sequence of stops follows ages of bedrock, oldest to youngest.  
Limit: 40; cost: $30, including lunch.

6. Middle Devonian Carbonate Rocks and Shales of North-Central Ohio. Dale Sparling, Frank Hurty (Pander Society). Two days, Friday, April 22 (evening) and Saturday, April 23. Participants will assemble at the Ramada Inn in Sandusky on Friday evening.

This field trip provides an opportunity to examine some of the best exposures of Middle Devonian strata in north-central Ohio. Exphasis will be on primary and diagenetic lithologic features, faunal assemblages, the sequence of depositional settings that these record, and interregional correlations. The carbonate rock and shale units examined reflect entirely marine deposition of the southeastern flank of the Findlay Arch. Dip is southeastward into the Allegheny basin, and the sequence of field trip stops is broadly from north to south traveling down dip—and thus upsection.

Although the Middle Devonian of north-central Ohio has been studied by paleontologists and stratigraphers for many decades, correlations of it with strata in surrounding regions are still somewhat controversial.  
Limit: 25; cost: $114, including lodging and lunch.
Foundation Announces New Fund: GEOSTAR

The GSA Annual Meeting in Phoenix in October 1987 proved to be an important milestone in the Foundation's history as the Board of Trustees approved the establishment of GEOSTAR, a new fund Supporting The Advancement of Research. While Century Challenge, the other major fund-raising campaign sponsored by the Foundation, is directed toward broad membership participation, GEOSTAR will focus on larger gifts from members, other individuals, industry, and institutions. Both programs celebrate the Society's 100th anniversary, which will culminate at the 1988 Annual Meeting in Denver in November.

Although Century Challenge will be completed at the end of 1988, GEOSTAR will continue for several more years, toward an ultimate goal of $4 million. In this regard, GEOSTAR will be similar in size to the Decade of North American Geology fund drive in 1981 and 1982, wherein large industrial contributors (principal energy companies) and the U.S. Government pledged a total of $3.4 million to finance the DNAG series of publications. Because of changing natural-resource economics and the emergence of other important activities that utilize the earth sciences, such as precious-metals prospecting, mining, and environmental preservation, it is anticipated that contributions to GEOSTAR will come from a much broader spectrum of donors. Special gifts from individuals will be an important part of the contributions that will flow into GEOSTAR.

More details on GEOSTAR and its progress will appear in future issues of GSA News & Information.

Leighton & Associates Kickoff Gift

The most important Foundation event at Phoenix was a $10,000 GEOSTAR gift from Leighton & Associates, presented by the company's chairman and CEO F. Beach Leighton, also a member of the Foundation's Board of Trustees. In accepting this gift (see photo), board chairman Harry Jamison responded, "We are absolutely delighted with Beach Leighton's contribution, particularly because it marks the initial gift in what will be the GSA Foundation's most important long-term fund-raising program. This contribution is an excellent example of earth science self-help, an important commercial utilization of geology making an investment to ensure future strength and growth of the profession."

FOUNDATION TO FUND MATCHING STUDENT-TRAVEL GRANTS

The GSA Foundation will award matching grants in the amount of $2000 each to the six GSA Sections. The money, when combined with equal funds from the Sections, will be used to assist students traveling to 1988 Section meetings and the Centennial Celebration in Denver in November.

Travel grants will be awarded and administered by the Sections, whose officers should be contacted for further information.

WE HAVE A WINNER!

Thomas Arkle, Jr., of Morgantown, West Virginia, is the winner of two free round-trip air tickets to any U.S. destination. His name was drawn at the conclusion of the 1987 GSA Annual Meeting in Phoenix from all Century Challenge participants.

CENTURY CHALLENGE REPORT

Cumulative as of October 31, 1987:
Donors: 206
Contributed & pledged: $33,420

IS THE FOUNDATION IN YOUR WILL?

Recently we have heard from several people that they have designated the GSA Foundation in their wills as a bequest recipient. If you have made or intend to make such a designation, we would very much appreciate being notified.

If you are making or revising a will and are giving thought to including the GSA Foundation, we have information on wills and bequests that might be of interest to you. Please call or write GSA Foundation, P.O. Box 9140, Boulder, CO 80301, (303) 447-2020.
## Foundation Donors, October 1987

<table>
<thead>
<tr>
<th>Category</th>
<th>Names</th>
</tr>
</thead>
<tbody>
<tr>
<td>General</td>
<td>Richard P. Fischer, Leon F. Follmer, Billy P. Glass, Harry D. Goode,</td>
</tr>
<tr>
<td></td>
<td>Sidney S. Goodwin, Loren Gould, Rhea L. Graham, Edward S. Grew,</td>
</tr>
<tr>
<td></td>
<td>John R. Griffin, John E. Griffith*, Rachel E. Guthrie, William R.</td>
</tr>
<tr>
<td></td>
<td>Hackett*, Gilmor S. Hamill, Catherine Hanks, Bruce B. Hanshaw,</td>
</tr>
<tr>
<td></td>
<td>David G. Hardy, David S. Harwood, James F. Hays, Christopher D. Henry,</td>
</tr>
<tr>
<td></td>
<td>Elizabeth A. Holt, Thomas L. Holzer, William M. Jordan, Patricia H.</td>
</tr>
<tr>
<td></td>
<td>Kelley, Cecil H. Kindle, Theodore A. Konigsmark</td>
</tr>
<tr>
<td></td>
<td>Augustus S. Knight, Jr., Daniel J. Kintak, Michal J. Kowalewski,</td>
</tr>
<tr>
<td></td>
<td>Robert A. Larson, William N. Laval, Leighton &amp; Associates, Noah</td>
</tr>
<tr>
<td></td>
<td>Levine, Stephen F. Lintner, Kathryn H. Lohmeyer, Donald R. Lowe,</td>
</tr>
<tr>
<td></td>
<td>Heinz A. Lowenstam, John C. Ludlum, Frank R. Luther, John B. Lyons,</td>
</tr>
<tr>
<td></td>
<td>John H. Hall, Bernard Hallet, Bruce B. Hanshaw, Mark P. Hassell,</td>
</tr>
<tr>
<td></td>
<td>Ronald M. Hetberg, John J. Hill, Curtis Lee Hollabaugh, Vance T.</td>
</tr>
<tr>
<td></td>
<td>Holliday, Thomas L. Holzer, Donald M. Hoskins, Preston E. Hotz,</td>
</tr>
<tr>
<td></td>
<td>Ralph H. Howe, Keith M. Hussey, Hisayoshi Igo, Bryan L. Isacks,</td>
</tr>
<tr>
<td></td>
<td>Roscoe G. Jackson II, Howard W. Jaffe, Kathleen M. Johnson, Susanne</td>
</tr>
<tr>
<td></td>
<td>Mahlburg Kay, Teresa L. Keck, Mackenzie L. Keith, Thomas L. Kesler,</td>
</tr>
<tr>
<td></td>
<td>Carl H. Kiesewetter, James E. Kline</td>
</tr>
</tbody>
</table>

| General, Challenge       | E. L. Krinitzsky, Nancy Lindley-Griffin, Eric M. Luttrel, Mitchell   |
|                          | Meltzer, David M. Miller, Arthur Misky*, Charles B. Moke, Ned Clyde   |
|                          | Construction Company, K. David Newell, William A. Oliver, Jr.,        |
|                          | Elaine R. Padovani, Allison R. Palmer, Joshua I. Palmer, Carmen       |
|                          | Pedrazzini, Samuel T. Pees, Joseph J. Perkins, Jr., Louis C. Raymond, |
|                          | Juergen Reinhardt, Roger R. Reveille, Jane Silverstone, Robert P.    |
|                          | Shart                                                                  |

| General                   | Daniel R. Shawe, John S. Shelton, Leon T. Silver, Virginia B. Sisson,|
|                           | Sigmund Snelson, J. William Sodeman, Edgar Winston Spencer, Holly J.  |
|                           | Thomas, George A. Thompson, William Thordarson, Edwin W. Tooker,      |
|                           | James W. Tucker, David A. Vanko, Ronald J. Wallace, Wesley K. Wallace,|
|                           | Malcolm P. Weiss, Donald E. White, Robert T. White, J. Lamar Worzel,  |
|                           | *Challenge Partner                                                    |

| General                   | Kelvin S. Rodolfo, Jack C. Rosenau, Dietmar Schumacher, Joseph F.    |
|                           | Schiwietering, Paul R. Seaber, Michael P. Sement, Tom Shoberg,        |
|                           | Eugene M. Shoemaker, William A. Shoemaker, Marie Siegrist, Leon T.    |
|                           | Silver, Jack A. Simon, Paul K. Sims, Robert C. Stephenson, Dale F.    |
|                           | Stradling, Rowland W. Tabor, William R. Thurston, Michael K. Toller,   |
|                           | Joseph W. Toth, Rudolf Trümpey, Robert J. Twiss, Stephen J. Urbanik,  |
|                           | David J. Varnes, Thomas A. Vogel, John H. Wall, Robert E. Wallace,    |
|                           | Robert F. Walters, Adam R. Wasem, John W. Webb, Robert J. Weimer,    |
|                           | W. Arthur White, William B. Whiteford, Virgil D. Winkler, Paul A.     |
|                           | Witherspoon, Jr.                                                     |
GSA Officers and Councilors for 1988

PRESIDENT
Albert W. Bally

VICE-PRESIDENT
Randolph W. Bromery

PAST PRESIDENT
Jack E. Oliver

COUNCILOR 1987–1989
William W. Hay

COUNCILOR 1987–1989
Marcus E. Milling

COUNCILOR 1987–1989
John S. Scott

COUNCILOR 1987–1989
Stephen H. Stow

(continued on p. 22)
GSA Officers and Councilors (continued from p. 21)

COUNCILORS 1988-1990
Zoltan de Cserna

COUNCILORS 1988-1990
Priscilla C. Grew

COUNCILORS 1988-1990
Donald C. Haney

COUNCILORS 1988-1990
Richard W. Hutchinson

GSA Medal and Award Winners for 1987

GSA's 1987 medalists and award winners were honored at the Annual Meeting in Phoenix.

Penrose Medal: Marland P. Billings, 43 Glen Road, Wellesley, MA 02181. Billings is Emeritus Professor of Geology, Department of Geological Sciences, Harvard University.

Day Medal: Don L. Anderson, Division of Geology and Planetary Sciences, California Institute of Technology, Pasadena, CA 91125.

Archaeological Geology Division Award: John C. Kraft, Department of Geology, University of Delaware, Newark, DE 19716.

Gilbert H. Cady Award (Coal Geology Division): Aureal T. Cross, Professor Emeritus, Geology and Paleobotany, Michigan State University, East Lansing, MI 48823.

E. B. Burwell Award (Engineering Geology Division): Joseph I. Ziony, 1640 Escobita Avenue, Palo Alto, CA 94306.

George P. Woollard Award (Geophysics Division): Neil D. Opdyke, Department of Geology, University of Florida, Gainesville, FL 32611.

History of Geology Division Award: Martin J. Rudwick, Program in the History of Science, 220 Palmer Hall, Princeton University, Princeton, NJ 08544.

O. E. Meinzer Award (Hydrogeology Division): L. W. Gelhar, Department of Civil Engineering, Room 48-329, Massachusetts Institute of Technology, Cambridge, MA 02139.

G. K. Gilbert Award (Planetary Geology Division): Donald E. Gault, Box 833, Murphys, CA 95247.


Structural Geology & Tectonics Division Best Paper Award: Steven E. Boyer, Department of Geological Sciences, University of Washington, Seattle, WA 98195; and David Elliott (posthumously), whose professional affiliation was with the Department of Earth Sciences, Johns Hopkins University.
The Geological Society of America invites applications for the 1988–1989 Congressional Science Fellowship. The Fellow selected will spend a year (September 1988–August 1989) 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 $28,000 stipend and a limited relocation and travel allowance.

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, 1988
TRAVEL COMPANIONS
FOR THE COMING FIELD TRIP SEASON

DNAG CENTENNIAL FIELD GUIDES
Each hardbound volume describes 100 outstanding geologic locations.

CORDILLERAN SECTION
OF THE GEOLOGICAL SOCIETY OF AMERICA

ROCKY MOUNTAIN SECTION
OF THE GEOLOGICAL SOCIETY OF AMERICA

VOLUMES 1 & 2
CORDILLERAN SECTION
edited by M. L. Hill, 1987
Field guides with area maps to locations in AK, southern AZ, CA, HI, NV, OR, WA, and British Columbia. Indexed. Medium blue spine.
CFG001, 532 p., ISBN 0-8137-5401-1, $43.50

ROCKY MOUNTAIN SECTION
edited by S. S. Beus, 1987
Field guides with area maps to locations in northern AZ, CO, ID, MT, NM, ND, SD, UT, WY, and Alberta. Indexed. Orange spine.

AVAILABLE NOW

NORTHEASTERN SECTION
OF THE GEOLOGICAL SOCIETY OF AMERICA

SOUTHEASTERN SECTION
OF THE GEOLOGICAL SOCIETY OF AMERICA

VOLUMES 5 & 6
NORTHEASTERN SECTION
edited by D. C. Roy, 1987
Field guides with area maps to locations in CT, DE, DC, ME, MD, MA, NH, NJ, NY, PA, RI, VT, New Brunswick, Newfoundland, Nova Scotia, eastern Ontario, and Quebec. Indexed. Tan spine.
CFG005, 517 p., ISBN 0-8137-5405-4, $43.50

SOUTHEASTERN SECTION
edited by T. L. Neathery, 1986
Field guides with area maps to locations in AL, FL, GA, KY, LA, MS, NC, SC, TN, VA, and WV. Indexed. Green spine.

AVAILABLE NOW

VOLUME 3
NORTH-CENTRAL SECTION
edited by D. L. Biggs, 1987
Field guides with area maps to locations in IL, IN, IA, MI, MN, MO, NE, OH, and WI. Indexed. Violet spine.
CFG003, 490 p., ISBN 0-8137-5403-8, $43.50

VOLUME 4
SOUTH-CENTRAL SECTION
edited by O. T. Hayward, 1987
Field guides with area maps to locations in AR, KS, OK, and TX. Indexed. Red spine.
CFG004, 475 p., ISBN 0-8137-5404-6, $43.50

ORDER ALL 6 FIELD GUIDES
AND SAVE!
Call us for details and prices on complete sets

Check, money order, or major credit cards accepted

GSA PUBLICATION SALES
P.O. BOX 9140, BOULDER, CO 80301
(303) 447-2020 or toll-free outside Colorado 1-800-GSA-1968
THE GEOLOGICAL SOCIETY OF AMERICA
GSA Grants Fund Wide Variety of Research

In 1933, shortly after the inception of the GSA research grants program, you had to be an experienced professional geologist to get a grant from the Society. Today, most GSA grants go to graduate students, and some of the sections and divisions give grants for specialized work.

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.) The Society awarded $176,200 in grants in 1987, to 199 students doing research for advanced degrees. The average amount awarded was $885 the largest award was $1500.

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 1988 research grants program is February 15, 1988. Applications must be submitted on 1988 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.

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 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 Gladys W. Cole Memorial Research Award is given for investigation of the geomorphology of semiarid and arid terrains in the United States and Mexico. 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).

Section Grants

GSA's Southeastern Section began its student grants program seven years ago. Applicants must be GSA Student Associates and must be attending a college or university within the geographical boundaries of the Southeastern Section (Virginia, West Virginia, Kentucky, Tennessee, North Carolina, South Carolina, Georgia, Florida, Alabama, Mississippi, Louisiana). Grants are awarded for both graduate and undergraduate research. Applications for these grants can be obtained from Michael J. Neilson, Department of Geology, University of Alabama, Birmingham, AL 35294. The deadline for 1988 applications is March 1, 1988. The grants will be awarded in late March.

The North-Central Section began awarding student grants in 1985. Applicants must be attending a college or university in the North-Central Section geographic area (Ohio, Indiana, Illinois, Missouri, Nebraska, Iowa, Minnesota, Wisconsin, Michigan, Mani-toba, western Ontario). Grant recipients are selected from applicants for the general research grants program (applications available from GSA headquarters; see address under General Grants). Deadline for 1988 applications is February 15, 1988.

The South-Central Section will begin awarding student grants in 1988. Applicants must be attending a college or university in the South-Central Section geographic area (Texas, Oklahoma, Arkansas, Kansas). 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 1988 applications is February 15, 1988. Undergraduate student recipients are selected by the Management Board of the South-Central Section. Applications for undergraduate student grants can be obtained from Page C. Twiss, Department of Geology, Thompson Hall, Kansas State University, Manhattan, KS 66506. The deadline for 1988 undergraduate student applications is October 15; the grants will be awarded in late December.

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 1988 applications is February 1, 1988.

The Coal Geology Division established the Antoinette Lierman Medlin Scholarship Award and Fund at the 1987 division business meeting in Phoenix, Arizona. Details of the criteria for the award will appear in a formal announcement in the February issue of GSA News & Information.

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, Richard F. Madole, U.S. Geological Survey, Box 25046, MS 966, Denver, CO 80225. The deadline for applications for 1988 is February 15, 1988. Grant awardees are announced in April.

The Sedimentary Geology Division awarded its first grant for outstanding student research in 1987. This newly established grant will be 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 1988 must be submitted by February 15, 1988.

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 1988 must be submitted by February 15, 1988.

More GSA divisions will probably award student grants in the future. Watch for announcements in your division newsletter.

GSA NEWS & INFORMATION, January 1988
RECENT RELEASES FROM GSA

DNAG CENTENNIAL FIELD GUIDES

COROLLERAN SECTION
edited by M. H. C. H., 1987
Field guides with area maps to locations in AK, southern AZ, CA, HI, NV, OR, WA, and British Columbia. Indexed. Medium blue spine.
CGFG01, 532 p.; ISBN 0-8137-5401-1; $43.50

ROCKY MOUNTAIN SECTION
edited by S. S. Peavey, 1987
Field guides with area maps to locations in northern AZ, CO, ID, MT, NM, ND, SD, UT, WY, and Alberta. Indexed. Orange spine.
CGFG02, 489 p.; ISBN 0-8137-5402-X; $43.50

NORTHEASTERN SECTION
edited by D.C. Roy, 1987
Field guides with area maps to locations in CT, DE, DC, ME, MD, MA, NH, NJ, NY, PA, RI, VT, New Brunswick, Newfoundland, Nova Scotia, eastern Ontario, and Quebec. Indexed. Tan spine.
CGFG05, 517 p.; ISBN 0-8137-5405-4; $43.50

SOUTHEASTERN SECTION
edited by T.L. Nasher, 1986
Field guides with area maps to locations in AL, FL, GA, KY, LA, MS, NC, SC, TN, VA, and WV. Indexed. Green spine.
CGFG06, 477 p.; ISBN 0-8137-5406-2; $40.50

NORTH-CENTRAL SECTION
edited by D.L. Biggs, 1987
Field guides with area maps to locations in IL, IN, IA, MI, MN, MO, NE, OH, and WI. Indexed. Violet spine.
CGFG03, 490 p.; ISBN 0-8137-5403-8; $43.50

SOUTH-CENTRAL SECTION
edited by O.T. Hayward, 1987
Field guides with area maps to locations in AR, KS, OK, and TX. Indexed. Red spine. (Expected in March)
CGFG04, 475 p.; ISBN 0-8137-5404-6; $43.50

DNAG GEOLOGY OF NORTH AMERICA AND ADJACENT OCEANS DURING THE LAST DEGLACIATION
edited by W.F. Ruddiman and H.E. Wright, Jr., 1987
Most Quaternary sediments in North America north of 45°N post-date the last deglaciation. This volume looks at those extensive deposits from the standpoint of timing, cause, and mechanism of the wastage of North American ice during the last deglaciation and the accompanying environmental changes in the nonglaciated and deglaciated areas. It particularly examines the mechanisms by which a mass of ice equivalent to 100 m of global sea-level was returned to the ocean within about 8,000 years. A truly comprehensive synthesis of marine and terrestrial information in 22 chapters grouped into five sections: Chronology of Delineation of the North American Ice Sheets, Ice Core and Other Glaciological Data, The Nonglacial Physical Record of the Continent, Biological Record on the Continent, and Analysis and Summary. Includes two oversize pocket-plates in color showing time-series maps of pollen densities and vegetation changes since 18 ka.

MEMOR SERIES
FOSIL CONCHOSTRACA OF THE SOUTHERN HEMISPHERE AND CONTINENTAL DRIFT: PALEOTONOLOGY, BIOSTRATIGRAPHY, AND DISPERSAL
by Paul Teasch, 1987
Does the record of fossil conchostracan of the southern continents contain credible evidence of nonmarine dispersal between them during portions of Paleozoic and Mesozoic? The author presents results of field studies and biostatigraphic collections of fossil conchostracans in pursuit of this question. His own fossil collections extended to Africa, Australia, Antarctica, India, and South America, and he supplemented his own with fossils from collections of colleagues and museums. The data, he claims, indicate a need for reexamination of pre-Drift placement of India and Africa. He describes several new taxa, and provides 49 outstanding plates, six appendices, and his personally prepared index.
MWR165, 304 p., indexed, ISBN 0-8137-1165-7; $38.00

SPECIAL PAPER SERIES
THE MOTION OF ALLOCHTHONOUS TERRANE ACROSS THE NORTH PACIFIC BASIN
by Michel G. Debiche, Allan Cox, and David Engebretson, 1987
This paper presents new efforts in an interesting field and displays great ingenuity by the authors in dealing with a problem which, on the face of it, defied rational solution. They present the results of studies of possible trajectories of terrane movement across the Pacific basin and along the margin of North America. Using special computer software created to simulate terrane movement and plate age, the authors looked at possible points of origin of those terranes. Methods and results of Terrane Trajectories, Paleolatitude versus Time, and Coastwise Translation are presented. Models and data were compared, and trajectories were tested for internal consistency with paleomagnetic results. Includes more than 12 tables and 40 figures of unusually high quality.
SPE207, 56 p.; ISBN 0-8137-2207-1; $71.00

This volume is part of an overall collaboration by A.J. Boucot and several members of the Nanjing Institute on varied problems of Silurian-Devonian community paleoecology, biogeography, and Silurian correlation—problems that are interrelated and that influence current basic taxonomic research. Chinese data are compared and contrasted with similar data from other parts of the world. Included are chapters that trace community evolution, name and list the communities, and illustrate brachiopod taxa in 20 plates.

MAMTE METASOMATISM AND ALKALINE MAGMATICISM edited by Ellen M. Morris and Jill D. Passens, 1987
Contains 28 papers originally presented at the Symposium on Alkaline Rocks and Kimberlites, in April, 1985, a noteworthy outgrowth of which was a heightened awareness that alkaline magmatism is not restricted to any single scenario but may occur in virtually all tectonic and petrologic settings. The editors focus on mantle metasomatism and the origin of alkaline magmas, Kimberlites, and related rocks; alkaline rocks in oceanic settings, and alkaline rocks in continental settings.
SPE215, 392 p.; ISBN 0-8137-2215-2; $45.00

REVIEWS IN ENGINEERING GEOLOGY SERIES
Debris flows and debris avalanches are among the most dangerous and destructive natural hazards. They claim hundreds of lives and millions of dollars in property loss every year. The past two decades have produced much new scientific and engineering understanding of these occurrences and have led to new methods for mitigating the loss of life and property. These 17 papers pull together much of this recent research and present it in three categories: (1) process; (2) recognition; and (3) mitigation. Much of this work results from cooperative efforts between GSA's Engineering Geology Division and Quaternary Geology and Geomorphology Division.

FOR A FREE CATALOG OR OTHER HELP CONTACT:
GSA MARKETING, PO BOX 9140, BOULDER, CO 80301

TO ORDER PUBLICATIONS
GSA PUBLICATION SALES, PO BOX 9140, BOULDER, CO 80301 (303) 447-2020
MEETINGS

(Asterisk indicates new or changed information)

1988

Restoring the Earth, National conference on natural resource restoration and environmental planning, January 13-16, 1988, Berkeley, California. Information: Kathleen Ferguson, 1713 C Martin Luther King Jr. Way, Berkeley, CA 94709; (415) 843-2645.


American Association of Petroleum Geologists Southwest Section, February 21-23, 1988, El Paso, Texas. Information: Robin Hoffer, Dept. of Geology, University of Texas, El Paso, TX 79968; (915) 747-5501.


Environment '88 seminar and exhibition, March 7-8, 1988, Milwaukee, Wisconsin. Information: Federation of Environmental Technologists, P.O. Box 185, Milwaukee, WI 53201; (414) 251-8163.


Anadarko Basin Symposium, April 5-6, 1988, Norman, Oklahoma. Information: Kenneth S. Johnson, Oklahoma Geological Survey, University of Oklahoma, Norman, OK 73019; (405) 325-3031.

American Association of Petroleum Geologists Pacific Section, April 17-19, 1988, Santa Barbara, California. Information: Jack Cunningham, Celeron Oil & Gas, 111 West Micheltorena, Santa Barbara, CA 93101-3018; (805) 966-0831.

First Catamarca International Mining Exposition and Fair, May 7-15, 1988, Catamarca, Argentina. Information: FEMICA, Uruguay 435, 3º piso, Of. E, Buenos Aires (1015), Argentina; Telex 17808 ANCYA AR.


Sixth Thematic Conference on Remote Sensing for Exploration Geology, May 16-19, 1988, Houston, Texas. Information: Thematic Conference, Environmental Research Institute of Michigan, P.O. Box 8618, Ann Arbor, MI 48107; (313) 994-1200, ext. 3382; Telex 4940091 ERIMARB.


Case Histories in Geotechnical Engineering 2nd International Conference, June 1-5, 1988, St. Louis, Missouri. Information: Shamsher Prakash, Room 308, Dept. of Civil Engineering, University of Missouri, Rolla, MO 65401; (314) 341-4461.

WaterTech China '88, International exposition and congress of water technologies, June 3-8, 1988, Beijing, China. Information: Management Committee, WaterTech China '88, c/o MartLink Communications Group, GPO Box 13477, Hong Kong; phone 5-225705; Telex 72091 HX.

Second International Symposium on Rockbursts and Seismicity in Mines, June 8-10, 1988, Minneapolis, Minnesota. Information: Charles Fairhurst, Dept. Civil and Mineral Engineering, University of Minnesota, 500 Pillsbury Dr. S.E., Minneapolis, MN 55455-0220.

(continued on p. 29)
CENTENNIAL SPECIAL VOLUMES

Four special, topical volumes prepared by four of GSA's Divisions as their contribution to the Society's centennial project, DNAG. The Divisions participating are: The History of Geology Division, the Quaternary and Geomorphology Division, the Engineering Geology Division, and the Archeological Geology Division. Volumes are hardbound, 8-1/2" X 11", with spines color coded as indicated.

Geologists and Ideas: A History of North American Geology
edited by Ellen T. Drake and William M. Jordan, 1985
An unusually coherent, well-written volume. Prepared for DNAG by the History of Geology Division of GSA. Spotlights events, ideas, and people, and sheds light on the history of North American geology as a whole. With its many intellectual jewels on the evolution of scientific concepts, this book will provide many happy hours of entertainment and instruction for anyone interested in the history of science, especially that of the earth sciences. Thirty-four papers are organized into four categories: (1) The Evolution of Significant Ideas; (2) Contributions of Individuals; (3) Contributions of Organized Groups; and (4) Application of Significant Ideas. Excellent as a course-book or for additional reading for classes related to the history of geology or general science. Light blue spine.

Geomorphic Systems of North America
edited by W. L. Graf, 1987
New ideas, new techniques, new data, even new access to extraterrestrial worlds -- all these are in greater abundance now than ever, making this, the editor says, a marvelous time to be a geomorphologist! This 14-paper volume has been prepared by the Geomorphology Division of GSA as its contribution to DNAG. Subjects treated are Regional Geomorphology of N. America; Appalachian Mountains and Plateaus; Atlantic and Gulf Coast Province; Central Lowlands; Canadian Shield; Great Plains; Rocky Mountains; Colorado Plateau; Basin and Range; Central America and the Caribbean; Columbia and Snake River Plains; Interior Mountains and Plateaus; Pacific Coast and Mountain Systems; and Arctic Lowlands. Yellow spine.

GEOLOGY OF NORTH AMERICA

The centerpiece of the DNAG project. When complete, this modern synthesis of the geology and geophysics of North America and the adjacent oceanic regions will contain 28 matched volumes, in two sets: 19 U. S. and Mexican volumes, and nine from Canada. Both of these sets, and all single volumes will be available from GSA. All volumes are hardbound, 8-1/2" X 11" and most include separate slip cases containing oversize plates.

The Western North Atlantic Region
edited by P.R. Vogt and B.E. Tucholke, 1986
The award-winning first volume in this 28-volume series. Complete coverage of the geology and geophysics of the western North Atlantic Ocean basin in 41 chapters, organized into 8 sections: Introduction; Present Accretion Axis; Regional Geology and Geophysics; Plate Tectonic Evolution; Surficial Sedimentation; Biofacies; Paleooceanography; and Resources and Law of the Sea. The editors received the 1986 Alan Berman Research Publication Award for this volume. Includes 11 plates, several in color, in a separate, matching slipcase.

COMING SOON...

GNA-K3: North America and Adjacent Oceans during the Last Deglaciation
edited by W. F. Ruddiman and H. E. Wright, Jr., 1987
Heritage of Engineering Geology
edited by George A. Kiersch, 1987


Mediterranean Basins Conference, September 25-28, 1988, Nice, France. Information: AAPG Convention Dept., P.O. Box 979, Tulsa, OK 74101-9979; (918) 584-2555. (Abstracts due February 1, 1988.)

*New York State Geological Association Annual Field Trip Meeting, October 7-9, 1988, Plattsburgh, New York. Information: Tom Wolosz, Center for Earth and Environmental Science, SUNY College, Plattsburgh, NY 12901; (518) 564-4031.


GSA 1988
Northeastern Section, March 9-12, Portland, Maine
South-Central Section, March 14-15, Lawrence, Kansas
Cordilleran Section, March 29-31, Las Vegas, Nevada
Southeastern Section, April 6-8, Columbia, South Carolina
North-Central Section, April 21-22, Akron, Ohio
Rocky Mountain Section, May 16-18, Sun Valley, Idaho
Annual Meeting, October 31-November 3, Denver, Colorado

Penrose Conferences
Paleozoic and Early Mesozoic Paleogeographic Relations Between the Klamath Mountains, the Northern Sierra Nevada, and North America, June 5-10, 1988, Redding, California. Information: David S. Harwood, U.S. Geological Survey, MS 975, 345 Middlefield Rd., Menlo Park, CA 94025; (415) 329-4932.


(continued on p. 31)
A Ph.D. in one of the above sciences is required, along with scholarly achievement in that field and administrative experience. The successful applicant must have a deep commitment to undergraduate teaching and research. Academic involvement typically includes the teaching of one course per term. Rank and competitive salary will be negotiable.

The University of Pittsburgh at Johnstown is located in a rural setting in the beautiful Laurel Highlands of Western Pennsylvania approximately 70 miles southeast of Pittsburgh and 150 miles northwest of Washington, D.C. The area is well known for its outdoor recreational opportunities all seasons of the year.

Applicants should send a letter with a statement of goals and of interests related to the unique situation that UPJ offers, a curriculum vitae, and names of three referees who are familiar with your academic and administrative experience to Dr. Doris L. Brown, Chairman, Search Committee, Biology Department, University of Pittsburgh at Johnstown, Johnstown, PA 15904, no later than January 20, 1988. UPJ is a four-year, degree-granting college of the University of Pittsburgh system with 2,800 students and is an equal opportunity-affirmative action employer.

GEOPHYSICAL SCIENCES
GRADUATE SCHOOL
THE CITY UNIVERSITY OF NEW YORK
The Ph.D. Program in Earth and Environmental Sciences involves specialization in mineralogy, petrology, meteoritics, and planetary geology at the doctorate level. The program is designed to provide advanced training in teaching and research and to prepare students for academic careers. The successful applicant will have demonstrated excellence in teaching and research and the ability to support research activities. The position involves teaching graduate courses and supervising students in the applicant’s area of specialization, as well as carrying out a vigorous research program. Appointment available September 1988.

The position provides an outstanding opportunity to develop a new program in geophysical sciences in coordination with a large Ph.D. faculty having diverse research interests.

Applications should be sent to Prof. Daniel Habib, Executive Officer, The Graduate School, City University of New York, Ph.D. Program in Earth and Environmental Sciences, Room 1201, 33 W. 42 Street, New York, NY 10036.


ANNOUNCEMENT OF A GEOLOGY POSITION
AT THE UNIVERSITY OF MISSOURI-KANSAS CITY
The Department of Geosciences (Geology-Geography-Meteorology), the University of Missouri—Kansas City, invites applications for a regular ("tenure-track") faculty replacement at the rank of Assistant Professor of Geology, starting the fall semester of 1988. The department seeks a replacement faculty member capable of offering undergraduate Mineralogy or Igneous and Metamorphic Petrology, Geochemistry, and Physical Geology as well as graduate-level courses in support of our M.S. program in Urban Environmental Geology. Research, grantsmanship, and timely publication of results is expected. Candidates should have the Ph.D. in Geology.

The University of Missouri—Kansas City is an equal opportunity institution. Salary will be competitive and commensurate with credentials. Applicants with less than two years post doctoral teaching experience should submit their transcripts with their resumes. Resumes should indicate records of grantsmanship activities. For completion of an application, all applicants must have three references sent to: Professor Edwin D. Goebel, Chairperson, Department of Geosciences, University of Missouri—Kansas City, 5100 Rockhill Rd., Kansas City, MO 64110-2499. Review of applications begins February 1, 1988.

PALEOMAGNETISM/
UNIVERSITY OF PITTSBURGH
The Department of Geology and Planetary Science invites applications for a tenure-track position in paleomagnetism, preferably at the assistant professor level to supplement the existing program in paleomagnetism and paleomagnetism. Highly qualified individuals with a strong commitment to original research and teaching in the field of paleomagnetism and applications of rock magnetism to problems of structure, stratigraphy, tectonics, diagenesis and geochronology are urged to apply. Applicants are expected to have completed the Ph.D. and to have demonstrated ability to conduct a vigorous research program. A curriculum vitae including a list of publications and a brief description of proposed research activities should be sent to Dr. Thomas H. Anderson, Chairperson, Department of Geology and Planetary Science, University of Pittsburgh, Pittsburgh, PA 15260. The position, which starts Sept. 1988, is subject to final budgetary approval. Deadline for applications is March 15, 1988.

The University of Pittsburgh is an equal opportunity/affirmative action employer.

FACULTY POSITION
GEOPOLITICAL SCIENCES
NORTHERN ILLINOIS UNIVERSITY
The Department has a new position for a junior tenure-track faculty member. The Department’s emphasis has long been research and Ph.D. level education. Its current programs are plate, continental, and marine tectonics; geochronology; paleoclimatology; seismology; sedimentary geology; structural geology, and petrology. The applicant’s research should complement one or more of these fields. She or he should provide evidence of high scientific productivity and the potential to lead research programs employing Ph.D. candidates. Please submit resume, including the names of 3 or more referees, by Jan. 15, 1988 to: Search Committee, Department of Geopolitical Sciences, Northern Illinois University, Evanston, IL 60208.

Northern Illinois University is an equal opportunity/affirmative action employer.

Consultants

GEOREGEOGRAPHY CONSULTING FIRMS & INDIVIDUALS! Use this low cost GSA advertising medium to advertise your services throughout the geologic community. More than 25,000 earth scientists from around the world, working in every discipline, read this newsletter every month. Talk to them! See above for rates, details, and closing dates.
MEETINGS (continued from p. 29)
Volcanic Influences on Terrestrial Sedimentation, August 28-September 3, 1988, Crystal Mountain, Washington. Information: Gary A. Smith, Dept. of Geology, University of New Mexico, Albuquerque, NM 87131; (505) 277-4204.


1989
* Society of Mining Engineers Annual Meeting, February 27-March 2, 1989, Las Vegas, Nevada. Information: Society of Mining Engineers, Meetings Dept., P.O. Box 625002, Littleton, CO 80162.


FUTURE GSA ANNUAL MEETINGS

1988 October 31 - November 3 Denver, Colorado
1989 November 6-9 St. Louis, Missouri
1990 October 29 - November 1 Dallas, Texas
1991 October 21 - 24 San Diego, California
1992 October 26 - 29 Cincinnati, Ohio
1993 October 25 - 28 Boston, Massachusetts

NASA Sponsored Summer Research Opportunities
available through
The Planetary Geology and Geophysics Undergraduate Research Program
Application Deadline: February 1, 1988
For information contact:
Christine Gibbons
716-877-3724

The Geodynamics Program
Wood's Hole Oceanographic Institution
Symposium on Geologic and Geochemical Evidence for Segmentation of Continental and Oceanic Rifts
January 26 - 27, 1988
Wood's Hole, MA

A two-day symposium will examine the geology, geochemistry and geophysics of rifting, with particular emphasis on evidence for segmentation in the rifting process. Active processes within individual rift segments, as well as between rift segments, will be considered. There will be talks on all stages of rifting from intra-continental to mature ocean ridge. Included will be discussions on theoretical modelling of rifts, tectonics, igneous geochemistry, and sedimentation. The goal is to achieve an integrated picture of the rifting process with an emphasis on bringing the oceanic and continental "rifting communities" together. Ample time will be allowed for audience participation and for contributed poster presentations.

The meeting is open, with graduate student participation encouraged. Dr. Henry J. B. Dick is serving as conference chairman. Those wishing to contribute a talk or have a poster session may send an abstract for consideration. To attend and arrange accommodations, please contact:
Mrs. Janet N. Johnson, Dept. of Geology & Geophysics, Woods Hole Oceanographic Institution, Woods Hole, MA 02543, Tel. (617) 548-1400, ext. 2623.
GEOLOGY OF PLATE MARGINS. (MC-59)
Attempts to organize rationally the types of plate boundaries, to display them in a useful graphic form, and to describe briefly geologic features associated with each. Text and references included. Two formats available.
MC-58. Single copy, wall-size, 38" x 52½", in color with an illustrated file envelope. Rolled, $14.50; Folded, $12.50
MC-88A. Great for field or classroom use!
Pack of 10, 11" x 16½", folded and punched for notebooks, specially coated stock to resist moisture and wear. $12.00

ROCK COLOR CHART. A handy flip chart that is designed primarily for field use with 115 chips giving precise rock colors for all geologic purposes. Provides numerical designations for hue, value, and chroma. Form and arrangement are based on the Munsell system, the most widely accepted system of color identification in use in the United States.
Rock Color Chart, 16 pages, 5" x 7½". $12.00

GEOLoGIC TIME SCALES. Compilation of the latest chronostratigraphic and numerical age data. Includes magnetic reversal stratigraphy and estimates of uncertainties of assigned Paleozoic and Mesozoic numerical ages. Sources of data cited. Four formats available for class and field use.
CTS-1 Package of 50, 8½" x 11", heavy stock, 3-hole punch. $8.00
CTS-2 Single laminated, 3-hole punch. $1.25
CTS-3 Wallet size, pack of 25, solid vinyl. $6.00
MC-50 Wall size, 30" x 36", heavy stock, rolled in tube. $8.50

Check, money order (in U.S. funds), or major credit cards accepted. Credit card users must provide full name, card name, card number and expiration date. Colorado residents, add sales tax. We pay surface postage on prepaid orders.

THE GEOLOGICAL SOCIETY OF AMERICA

INSIDE

Call for Bulletin Editor Applications ................................................................. p. 7
Southeastern Section 1988 Meeting ................................................................. p. 8
Call for GSA Books Editor Applications ......................................................... p. 13
North-Central Section 1988 Meeting ............................................................. p. 14
GSA Officers and Councilors for 1988 .............................................................. p. 20

SECOND CLASS Postage Paid at Boulder, Colorado and at additional mailing office.