

# GSA NEWS & INFORMATION

Monthly Newsletter of  
The Geological Society of America

VOLUME 6, NUMBER 12

DECEMBER 1984

## GSA Members Join Growth Campaign

Getting new members—and a handsome porcelain mug—inspired GSA members to do some recruiting in October. Every member received information about GSA's first major membership campaign in September. Every member who recruited a new member received a large blue mug with the GSA seal on it and an entry in a drawing for a free trip for two to the 1985 GSA Annual Meeting, in Orlando, Florida. Second- and third-place prizes in the drawing, held at the 1984 Annual Meeting, in Reno, Nevada,

November 5-8, are GSA books, including volumes of *The Geology of North America*, and free membership dues for one year.

You can still "Mug-a-Member"—get the GSA English ironstone mug—if you recruit a new member by December 31, 1984. You and your recruit will also receive a colorful poster of Kilauea volcano, available only through the "Every Member-Get-A-Member" campaign.

GSA members who recruited new members whose completed application forms have been received are, as we go to press:

Mohammad-Hassan Amini  
Michael A. Arthur  
Gail M. Ashley  
William Back  
Robert L. Badger  
Theodore P. Barnhard  
Richard K. Barr  
David L. Becka  
Steven R. Bell  
Charles F. Berkstresser, Jr.  
Robert C. Berry  
Jack D. Beuthin  
Michael Bikerman  
William L. Bilodeau  
Iris Y.P. Borg  
Nancy A. Breen  
Robert L. Brenner  
Sean D. Broadhead  
Keith A. Brugger  
David M. Burr  
William H. Busch  
R. Morgan Button  
Ann Bykerk-Kauffman  
Patricia H. Cashman  
Susan M. Cashman  
Deborah J. Caskey  
John J. Chapman  
Chen-Hong Chen  
Malcolm M. Clark  
Michael L. Clark  
John G. Cleary  
David L. Click  
Christopher L. Clodfelter  
William W. Clopine  
Walter K. Conrad  
Kevin P. Corbett  
Susan H. Corderman  
William Sinclair Cordua  
Stephen R. Crook  
Mary R. Cudzil

Diana C. Dale  
E. Julius Dasch, Jr.  
Robert Hill Davidson  
Kristen E. Davis  
Mary R. Dawson  
Kenneth J. De Nault  
Frank L. Decourten  
Albert S. Depetris  
John E. Desantis  
Wesley W. Diehl  
Ronald R. Dilamarter  
Terrence J. Donovan  
Grenville Draper  
Edward Eschner  
David A. Ferrill  
Richard P. Fink  
Brian K. Fowler  
Diane E. Fox  
Paul B. Garrison  
John R. Giardino  
David B. Goings  
Arthur G. Goldstein  
Stephen J. Gosselin  
Richard R. Gottschalk  
John A. Grant III  
Glenn D. Green  
Laurence R. Greene  
Susan M. Hall  
Patricia M. Hanbury  
Bruce B. Hanshaw  
Paul D. Hartley  
Gordon Haxel  
John B. Hayes  
Oliver T. Hayward  
Paul W. Heiple  
Tucker F. Hentz  
Alison A. Hess  
John C. Holladay  
Kenneth D. Hopkins  
Richard A. Hoppin

Clifford A. Hopson  
Jonathan M. Husch  
Peter J. Hutchinson  
Michael E. Jackson  
Leonard Jacob, Jr.  
Roy E. Jensen  
Barbara E. John  
Roy A. Johnson  
James O. Jones  
Robert B. Jorstad  
Lisa Kaplan  
William A. Kneller  
Robert P. Koeppen  
Otto C. Kopp  
Leon Lahiere  
Robert J. Langridge  
Bettina E. Laswood  
Alain D. Leclair  
Jeffrey Lee  
Benjamin P. Leslie-Bole  
Laurence R. Lew  
Gerald R. Licari  
Nancy Lindsley-Griffin  
John P. Lockwood  
Richard P. Lozinsky  
Peter Henry Lufholm  
Karen Lund  
James I. Lyons, Jr.  
Lawrence L. Malinconico, Jr.  
Kris C. Matson  
Henry S. Mayeda  
Michael F. McGroder  
J. Gregory McHone  
Donald F. McNeill  
Charles E. McClennen  
Digby J. McLaren  
Teresa M. Mensing  
Charles M. Merguerian  
Stanley A. Mertzman  
Fredrick W. Metzger  
David M. Miller

Elizabeth L. Miller  
James G. Mills, Jr.  
Steven W. Moore  
Harold E. Myers  
W. Darwin Myers  
Scott L. Neville  
Cathryn R. Newton  
James Nicholls  
Steven S. Oriel  
Valerie J. Orr  
David A. Orsen  
Randall R. Parrish  
Scott R. Paterson  
Richard A. Paull  
Louis Pavlides  
Michael R. Perfit  
David J. Pertl  
Richard C. Peterson  
Laurel R. Pringle  
Libby M. Prueher  
Dave D. Puls  
Terence T. Quirke, Jr.  
Wayne D. Ranney  
William A. Ranson  
Cheryl L. Rattel  
James G. Rigby  
Marjory B. Rinaldo-Lee  
David M. Rohr  
Elizabeth L. Rolle  
Michael R. Rosen  
Murray J. Rosenberg  
Gar W. Rothwell  
Douglas E. Ruhlin  
Jeanette M. Sablock  
Daniel E. Sampson  
Ruth A.M. Schmidt  
Warren J. Schulingkamp II  
Maurice L. Schwartz  
Michael V. Scully  
Eileen L. Shannon

Albert W. Shultz  
Stuart F. Simmons  
Robert I. Simon  
D. Scott Singdahlsen  
Thomas R. Slodowski  
Michael J. Smith  
J. G. Souther  
Dann J. Spariosu  
Richard G. Stearns  
George E. Stewart  
William J. Stone  
James M. Stroh  
Robert J. Stuart  
Stanley J. Sucharski  
Hans R. Thierstein  
Joanne L. Thigpen  
Lisa M. Toothaker  
Marguerite A. Toscano  
Stanley M. Totten  
David G. Towell  
David M. Uhler  
Nancy A. Van Wagoner  
Anne W. Vaughan  
Ed P. Vicenzi  
John D. Vitek  
Peter J. Vrolijk  
Richard K. Waddell, Jr.  
Richard J. Walker  
E. Timothy Wallin  
David A. Wark  
G. D. Webster  
Frederick L. Wehr II  
Ronald R. West  
Garnett P. Williams  
Monte D. Wilson  
Steven T. Wilson  
Michael C. Wizevich  
Warren W. Wood  
Albert S. Wylie, Jr.  
Betsy Yount

## National Research Council Offers Associateships, Minority Fellowships

### Associateships

The National Research Council will award about 250 new full-time associateships in 1985 in its Postdoctoral, Resident, and Cooperative Research Associateship Programs for research in the sciences and engineering. Research is to be conducted in behalf of 21 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.

The associateships will be awarded on a competitive basis for research in chemistry, engineering, and mathematics, and in the earth, environmental, physical, space, and life sciences. Most of the programs are open to both U.S. and non-U.S. nationals, and to both recent Ph.D. degree holders 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 tenures. Stipends for the 1985 program year will begin at \$23,350 a year for recent Ph.D.s and be individually determined for senior associates. A stipend supplement up to \$5,000 may be available to regular (not senior) awardees holding recognized doctoral degrees in those disciplines wherein the number of degrees conferred by U.S. graduate schools is significantly below the current demand.

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, 1985.* Initial awards will be announced in March and April, followed by awards to alternates later.

Information on specific research opportunities and federal laboratories, as well as application materials, may be obtained from Associateship Programs, Office of Scientific and Engineering Personnel, JH 608-D3, National Research Council, 2101 Constitution Avenue, N.W., Washington, DC 20418, (202) 334-2760.

### Postdoctoral Fellowships for Minorities

The National Research Council plans to award about 35 Postdoctoral Fellowships for Minorities in a program designed to provide opportunities for continued education and experience in research for American Indians and Alaskan Natives (Eskimo or

Aleut), Black Americans, Mexican Americans/Chicanos, and Puerto Ricans. Fellows will be selected from among scientists, engineers, and scholars in the humanities who show greatest promise of future achievement in academic research and scholarship in higher education.

In this national competition sponsored by the Ford Foundation, citizens of the United States who are members of one of the designated minority groups, who are preparing for or already engaged in college or university teaching, and who hold doctoral or other terminal degrees may apply for a one-year fellowship award.

Awards in the Postdoctoral Fellowships for Minorities Program will be made in the behavioral and social sciences, humanities, engineering, mathematics, physical sciences, and biological sciences, and for interdisciplinary programs comprising two or more eligible disciplines. Awards will not be made in such areas as business administration and management, educational administration, curriculum development and supervision, teacher training, and personnel and guidance. Tenure of a fellowship provides postdoctoral research experience at an appropriate not-for-profit institution of higher education or research of the Fellow's choice. Appropriate institutions include universities, museums, libraries, government or national laboratories, privately sponsored not-for-profit institutes, government chartered not-for-profit research organizations, and centers for advanced study.

The usual tenure for these Postdoctoral Fellowships is either 9 or 12 months. Tenures may not exceed 12 months. Fellows are expected to begin tenure not later than September 1985.

The stipend for Fellows at the regular postdoctoral level is \$20,000 per year, and that for Fellows at the senior postdoctoral level is \$26,000 per year. Stipends for tenures of less than 12 months will be prorated. No dependency allowance is available. In addition to the stipend, the Fellow will receive a travel and relocation allowance up to a maximum of \$2000. Reimbursement will be on an actual-cost basis. The program will provide a cost-of-research allowance of \$2000 per year for each Fellow in residence to be administered by an appropriate office of the fellowship institution. This allowance is meant to provide partial support for the Fellow's study and research program. The allowance will be prorated for tenure less than 12 months. Each Fellow's employing institution will be provided a \$2,500 grant-in-aid for the Fellow's use once the fellowship tenure is completed. The employing institution will be asked to match the grant. These funds are designated to be used for the Fellow's research expenditures.

*The deadline for submission of applications is January 16, 1985.* All applicants will be notified by the National Research Council by March 30, 1985, of the disposition of their applications.

All inquiries concerning application materials and program administration should be addressed to the Fellowship Office, National Research Council, 2101 Constitution Avenue, Washington, DC 20418.

1985 GSA ANNUAL MEETING

OCTOBER 28-31

ORLANDO, FLORIDA

**SYMPOSIA PROPOSALS DUE  
JANUARY 1, 1985**

FOR INFORMATION PLEASE CONTACT

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Tallahassee, FL 32306

(904) 644-5860

### GSA News & Information

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# CENTENNIAL NEWS

by Allison R. (Pete) Palmer

## ***Sedimentary Cover of the Craton: Canada Organized***

The outline below represents the 14th volume of *The Geology of North America* to have a fully committed cast of authors identified. This volume, as well as the other Canadian volumes being guided by John Wheeler, will

serve double duty—not only as one of the 27 volumes of the DNAG synthesis series, but also as one of the subset of this series that will constitute the next edition of *The Geology and Economic Minerals of Canada*.

### ***Sedimentary Cover of the Craton: Canada*** **D. F. Stott, J. D. Aitken**

1. **Introduction**—D. F. Stott, J. D. Aitken
2. **Physiography**
  - Western Canada Basin—A. M. Stalker, J. S. Vincent, O. L. Hughes
  - Hudson Platform—A. W. Norris
  - St. Lawrence Platform—B. V. Sanford
3. **History of Exploration**
  - Western Canada Basin—W. O. Kupsch
  - Hudson Platform—A. W. Norris
  - St. Lawrence Platform—B. V. Sanford
4. **Evolution of the Tectonic Framework**
  - Interior Platform and Eastern Cordillera—J. D. Aitken, D. F. Stott
  - Hudson Platform—A. W. Norris
  - St. Lawrence Platform—B. V. Sanford
5. **Geophysical Characteristics and Basement Rocks of the Interior Platform and Basin**
  - Introduction—R. A. Burwash
  - Gravity and Aeromagnetism—A. Green
  - Deep Seismic Profiles—E. R. Kanasewich
  - Conductivity—E. R. Kanasewich
  - Heat Flow—A. M. Jessop
  - Seismicity—E. R. Kanasewich
  - Lithology, Geochronology, Geochemistry, Polymetamorphism, Summary—R. A. Burwash
6. **Geological Description**
  - Interior Platform; Western Canada and Mackenzie Basins
    - Proterozoic Sedimentary Rocks—J. D. Aitken, M. E. McMechan
    - Early Paleozoic
      - Cambrian—J. D. Aitken
      - Ordovician and Silurian—B. S. Norford, M. P. Cecile

- Devonian—P. F. Moore, A. E. H. Pedder
- Late Paleozoic
  - Carboniferous, Permian—B. C. Richards, E. W. Bamber, A. C. Higgins, D. M. Kent, J. Utting, C. M. Henderson
- Mesozoic
  - Triassic—D. W. Gibson, J. A. Dolph, E. T. Tozer
  - Jurassic—T. P. Poulton
  - Cretaceous—D. F. Stott, W.G.E. Caldwell, D. J. Cant, J. E. Christopher, J. Dixon, E. H. Koster, D. H. McNeil, F. Simpson
- Cenozoic
  - Tertiary—D. F. Stott, J. Dixon
  - Quaternary—A. M. Stalker, J.S. Vincent, O. L. Hughes
  - Hudson Platform—A. W. Norris
  - St. Lawrence Platform—B. V. Sanford
- 7. **Evolutionary Models and Tectonic Comparison**
  - Interior Platform—J. D. Aitken, D. F. Stott
  - Hudson Platform—A. W. Norris
  - St. Lawrence Platform—B. V. Sanford
- 8. **Economic Geology**
  - Metallic Deposits—H. E. Dunsmore
  - Non-metallic Deposits—P. Guliov, W. Hamilton, B. Bannatyne, B. V. Sanford
  - Groundwater—E. C. Halstead, D. H. Lennox
  - Fuels
    - Coal—A. R. Cameron, D. K. Norris
    - Petroleum—N. J. McMillan, J. W. Porter

### **Organizational Workshop Held for Part of *Economic Geology: U.S.***

Hal Gluskoter, the editor, and most of the potential authors for the 100-page synthesis covering coal in the volume of *The Geology of North America* devoted to *Economic Geology: U.S.* gathered in Denver on September 15-16, 1984, to create a final outline and suggest both additional authors and a schedule for production of their book. The remaining sections of the book should have similar organizing workshops before the end of the year.

### **DNAG Products Now in Production**

Seven Continent/Ocean Transects are in the color separation process as of mid-October. The first of these should be published in the first quarter of 1985.

Thirteen chapters of *Development of North American Geology: 1881 to Present* are now in-house for copy-editing, and the remaining chapters are promised by the end of the year. Seven chapters of *The Western North Atlantic Region* are also to the copy-editing stage and at least that many more are awaiting only approval of the volume editors for copy-editing to begin. Most remaining chapters are in the review and revision process. Both books should be published in the first half of 1985.

Final Announcement

NORTHEASTERN SECTION, GSA, 20TH Annual Meeting
Lancaster, Pennsylvania
March 13-16, 1985

The Northeastern Section of the Geological Society of America will meet at the Americana Host Farm Resort Motel in Lancaster, Pennsylvania, together with the Eastern Section of the Society of Economic Paleontologists and Mineralogists, the Northeast Section of the Paleontological Society, and the Eastern Section of the National Association of Geology Teachers.

REGISTRATION

Registration is required for all those attending the meetings, exhibits and spouse's programs. Admission to meeting functions is by badge only.

Preregistration at reduced rates can be completed by mail. Preregistration Forms must be received by February 27, 1985. Refunds on canceled preregistrations will be made in full until February 27, 1985.

On-site registration begins Wednesday evening, March 13, 1985, in the lobby of the Host Farm Resort.

WELCOMING PARTY

A welcoming party for all those attending the meeting will be held from 1830 to 2100 hours on Wednesday, March 13, at the Host Farm Resort.

TECHNICAL PROGRAM

General technical sessions will be scheduled as oral presentations and poster sessions from Thursday through Saturday noon. Sessions will be held at the Host Farm Resort.

SYMPOSIA

- 1. Lacustrine Processes and Sequences. John F. Hubert, Department of Geology/Geography, University of Massachusetts, Amherst, MA 01003.
2. Deformation of the Middle Appalachian Foreland: Geometry, Sequence, Environment, Mechanisms. Richard P. Nickelson, Department of Geology/Geography, Bucknell University, Lewisburg, PA 17837.
3. The Taconian Flysch Belt of the Appalachians: Problems of Origin and Deformation. Edward C. Beutner,

HOUSING FORM

Northeastern Section Meeting, Wednesday, March 13 to Saturday, March 16, 1985

Americana's Host Farm & Corral

- Forms received after FEB. 12, 1985, will be confirmed on an "if available" basis.
• Fill out only one form for each room required.
• DEPOSIT OF \$50.00 MUST ACCOMPANY FORM TO CONFIRM RESERVATIONS.
• Please make check payable to HOST FARM. Major credit cards accepted at hotel, but not for deposit.
• Hotel confirmation is required for check-in.

RATES INCLUDE FULL BREAKFAST

- \$ 57.00 per room per day—Single occ.
\$ 74.00 per room per day—Double occ.
\$108.00 per room per day—Quadruple occ.

NOTE: All rates are subject to 6% PA state sales tax. A gratuity of 15% per day per person will be added to cover the services of chambermaids, bellmen, and dining room waiters and waitresses.

Please print or type:

Name: \_\_\_\_\_
Roommates: \_\_\_\_\_

No. of Children \_\_\_\_\_
Children's Ages \_\_\_\_\_

Business Address: \_\_\_\_\_
Home Address: \_\_\_\_\_

Home Phone: \_\_\_\_\_ Business Phone: \_\_\_\_\_

Arrival Date \_\_\_\_\_ Day \_\_\_\_\_ Do you require a hospitality room?

Departure Date \_\_\_\_\_ Day \_\_\_\_\_ If yes, please state dates needed and send additional \$50.00 deposit to confirm. Yes No

Check type of room required:
\_\_\_ SINGLE OCC. \_\_\_ DOUBLE OCC.
\_\_\_ QUADRUPLE OCC. \_\_\_ SHARING ROOM\*
Arrival Date \_\_\_\_\_

\*The hotel will not be responsible for assigning roommates.
Unless roommate is stated, you will be assigned a single-occupancy accommodation.
Departure Date \_\_\_\_\_

Check-in: After 4 p.m.
Check-out: By 12:00 noon
Lockers and facilities available prior to check-in.
Send form and deposit to: Host Reservations
2300 Lincoln Highway East
Lancaster, PA 17602
(717) 299-5500

Department of Geology, Franklin and Marshall College, P.O. Box 3003, Lancaster, PA 17604; Peter T. Lyttle, U.S. Geological Survey, Mail Stop 926, National Center, Reston, VA 22092.

- 4. **Paleobiomechanics: A Quantitative Approach to the Analysis of Form and Function in Fossils.** John A. Chamberlain, Department of Geology, Brooklyn College, City University of New York, Brooklyn, NY 11210.
- 5. **Pre-Woodfordian Glacial Geology of Central and Eastern Pennsylvania.** Duane D. Braun, Department of Geog-

raphy/Earth Science, Bloomsburg University, Bloomsburg, PA 17815; Thomas W. Gardner, Pennsylvania State University, University Park, PA 16802.

- 6. **Hydrologic Transport of Organic Chemicals: I. Fundamental Processes; II. Case Studies.** Frank J. Wobber, Office of Energy Research, U.S. Department of Energy, Washington, DC 20545; Jeffrey P. Sgambat, Geraghty and Miller, Inc., 844 West Street, Annapolis, MD 20401.

(continued on p. 190)

**PREREGISTRATION FORM**

Northeastern Section, GSA, Annual Meeting  
March 13-16, 1985, Host Farm Resort, Lancaster, Pennsylvania

PLEASE PRINT OR TYPE

**NAME** \_\_\_\_\_  
Last First Middle Name for Badge

**Registered as:** Professional  Student  Spouse/Guest   
**Membership Affiliation:** GSA  SEPM  PS  NAGT  NONE (note surcharge)

Please note: Valid student ID required for student badge pickup.

**Institution or Firm** \_\_\_\_\_

**Mailing Address** \_\_\_\_\_  
Street City State Zip

**Phone: Business** ( ) \_\_\_\_\_ **Home** ( ) \_\_\_\_\_

**Spouse or Guest** \_\_\_\_\_  
Last First Middle

**Affiliation (abbreviate for badge)** \_\_\_\_\_

**Mailing Address** \_\_\_\_\_  
Street City State Zip

**FEEES**

Preregistration (until February 27), per person .....	\$12.00	\$ _____
Registration (after February 27), per person .....	\$17.00	\$ _____
Student/Guest Preregistration (until February 27), per person .....	\$ 5.00	\$ _____
Student/Guest Registration (after February 27), per person .....	\$ 8.00	\$ _____
<b>Non-GSA Member Surcharge</b>		
For Professionals .....	\$ 8.00	\$ _____
For Students/Guests .....	\$ 2.00	\$ _____
Extra Abstracts Volume (reserved on-site) .....	\$ 5.00	\$ _____
<b>Annual Dinner (subsidized, full meal)</b>		
Thursday, March 14, Host Farm Resort .....	\$ 5.00	\$ _____

**TOTAL FEES** \_\_\_\_\_  
 Make check or money order, U.S. funds only, payable to GSA Northeastern Section \$ \_\_\_\_\_

**PREREGISTRATION FORMS MUST BE RECEIVED NO LATER THAN FEBRUARY 27, 1985**  
 Refund on canceled preregistration will be made in full if we receive notice by February 27, 1985.  
 After that date no refunds will be made.

**FOR OFFICE USE ONLY**

Date received \_\_\_\_\_  
 Amount received \_\_\_\_\_  
     Registration \_\_\_\_\_  
 Annual Dinner \_\_\_\_\_  
 Personal check \_\_\_\_\_  
 Other \_\_\_\_\_  
 Issued by \_\_\_\_\_

**Mail completed preregistration forms and full payment to:**  
 Northeastern GSA Registration  
 Department of Geology/Astronomy  
 West Chester University  
 West Chester, PA 19383



**NORTHEASTERN SECTION**

(continued from p. 189)

**STUDENT PAPERS**

Awards will be made for outstanding student papers presented in the technical sessions. To be eligible and judged, an abstract must be authored exclusively by a student and must be designated on the abstract form as a student paper.

**PROJECTION EQUIPMENT**

All slides must be 2" x 2" and fit a standard 35-mm carousel tray. Only one projector and screen will be provided in each of the technical sessions. Overhead projectors will not be available. Please bring your own loaded carousel tray, if possible.

**EXHIBITS**

Exhibits will be held at the Host Farm Resort. A single booth is U.S. \$90 for education and nonprofit institutions and U.S. \$180 for commercial organizations. These prices include a table and two chairs. For additional information, contact

James Lauffer or Lavere McClure  
 Department of Geography and Earth Sciences  
 Bloomsburg University  
 Bloomsburg, PA 17815  
 (717) 389-4142

**SPOUSE/GUEST ACTIVITIES**

Special briefings on sightseeing, recreational, and shopping opportunities in the Lancaster "Pennsylvania Dutch" area will be provided at designated times on Thursday, March 14. Professional guided sightseeing tours can be booked through the hotel. Maps and other information for self-guided tours, including the numerous "outlet" shopping opportunities available, will be provided.

**SPECIAL EVENTS**

The GSA Northeastern Section Annual Dinner will be held the evening of Thursday, March 14, in the Cabaret of the Host Farm Resort. The dinner (a full meal) is partially subsidized.

J. Tuzo Wilson, Director General of the Ontario Science Centre, Toronto, will be special guest speaker. Wilson's address will concern changes he has seen in geology over the past fifty or sixty years. These include plate tectonics, knowledge of glacial geology, and opinions about the Precambrian.

A *Public Forum* on "Contamination of Groundwater by Waste Disposal" will be held the evening of Friday, March 15. This forum is being led by Carlyle Gray.

R. McNeil Alexander will give a talk on "How Fast Was a Dinosaur?" just prior to the Public Forum.

**Guests of the Host Farm Resort get free nightly entertainment in the Cabaret.**

The times and places of the business meetings of the GSA Northeastern Section and associated societies (sections of SEPM, PS, and NAGT) will be announced in *Abstracts with Programs*.

**TRAVEL**

The Host Farm Resort is on U.S. 30 about five miles east of Lancaster, Pennsylvania; ample parking is available at the resort. Air service is available to Lancaster and Harrisburg Airports, and transportation from either airport is available via Lancaster Limousine, 304 Main Street, Mt. Joy, PA 17557, telephone (800) 732-3533. Amtrak trains stop at Lancaster Train Station.

**HOUSING**

See the accompanying housing form, or contact Edward Beutner, Department of Geology, Franklin and Marshall College, Lancaster, PA 17604, (717) 291-3818. If you are interested in child care, please contact the Host Farm Resort.

**GSA SPECIAL PAPER 194**

# THE GRENVILLE EVENT

*in the Appalachians and related topics*  
 Edited by Mervin J. Bartholomew

The Grenville Event — about 1 billion years ago — formed the crystalline basement on which later rocks accumulated prior to middle to late Paleozoic orogenic pulses. This volume provides the first synopsis ever done of the basement rocks of the Appalachians and lays the foundation for future searches for similar rocks in

Africa and Europe. Fifteen papers presented in geographical order starting with an exhaustive summary of the Adirondacks of New York and ending with a discussion of the tectonics of the Pine Mountain window of Georgia and Alabama. The newly discovered Grenville rocks of eastern Virginia are described.

**Special Paper 194, viii + 288, 8½ x 11", soft bound, CIP, ISBN 0-8137-2194-6 ..... \$31.00**

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## NEW GSA MEMBERS

The following 272 Members have been elected to Membership by Council action during the period from March 1, 1984, through August 31, 1984 (\* indicates transfer from Student Associate to Member).

Ted C. Abel	Robert J. Dineen	Christopher P. Hinze	Carlene Merey*	Richard J. Scott*
Antenor M. Aleman	Ingrid M. Donnerstag	Michael S. Holland	George T. Merrifield, Jr.	Jeff Severinghaus
Elaine Marie Allan	Evelyn Kae Dowdeswell*	Ben P. Hooper	Christopher J. Meyers	Jean T. Shannon
Lee Amoroso	Harold D. Downey	Susan D. Hovorka	Phillip D. Milholland	Clement F. Shearer
Holly D. Ander*	Kurt A. Easthouse	Edwin L. Hubbard	Charles E. Miller, Jr.	Greta L. Slavik
Valerian Bachtadse	Henry E. Eby*	Rodney G. Huppi	M. Michael Miller	Guy M. Smith
Andrew H. Backus	Ronald L. Erickson	Jeffrey Ralph Huspeni	Richard J. Miller	Leah D. Smith
Robert A. Baird	Steven P. Esling	James P. Immitt	Judith B. Moody	Paige Herzon Spatz
Katrin Zarinski Baker	J. A. Tony Fallin	Gino A. Irdi	Julie D. Morris	Jeffrey W. Sprague
Jefferson W. Barrett	Jen-Ho Fang	Jack M. Jackson	Robert J. Moyer	Thomas E. Stabile
John C. Barry	Veronica R. Fasselt	Martin P.A. Jackson	William J. Mussman	Steve Stankov
Mary Jane Bartholomew	William C. Feyerabend, Jr.	Matthew J. James	H. Seay Nance	Jaye R. Stanley*
Gregory W. Bartow*	Cynthia Weatherly Finlay	Thomas R. Janeczek*	Peter G. Naumoff	Jeffrey A. Starr
Douglas P. Bauer	William V. Flanagan	Mark E. Jensen*	John H. Nicholson	Ion-Athanasios Stavropoulos
Desiree Beaudry	Lucy L. Foley	D. Jay Johnson	Robert J. O'Brien	Sigurdur Steinhorsson
Barry F. Beck	Kimball Forrest	Fred M. Johnson	Erik E. Olsborg	John R. Stellar
Paul E. Belanger	Carol D. Frost	T. Nevan Kane	Steven F. Olson	George E. Stewart
Harvey E. Belkin	James E. Furr	Robert A. Karfs	Donald F. Oltz	J. David Stewart
Mark G. Bentz	Robert L. Galyen	Anthony O. Kaufman	Pasquale A. Onorato*	Gary E. Strathearn
Carolyn W. Bishop*	Larry Garmezy*	Robert E. Kell	Greta J. Orris	John L. Sweezy
Jan Bloemendal	Mimi R. Garstang	Pamela D. Kempton*	David A. Osleger	John P. Szabo
John Blunt	Brian Gavin	Matthew H. Kenealy III	Donald E. Owen	Derrick B. Teel*
Paul J. Boison*	Terrence M. Gerlach	Robert J. Kinsley-Momberger	R. A. Oxenford	Richard W. Teixeira
Deborah D. Bourgeois	John W. Gibson, Jr.	Randy E. Kirby	Soo-Chul Park	Elizabeth A. H. Thomas*
A. R. Bowler	Alan R. Gillespie	Gail L. Kirchner*	Sallyann Paschall	Pierre Tricart
T. Lee Boyd*	Steven A. Goldberg	William P. Klauber	Robert A. Pinotti	Danna B. Truslow
Robert J. Brenneman	Cinda M. Graubard	Russell F. Krauss	James B. Plunkett	Johnathan L. Tso
Ronald W. Broome	Garland A. Gray, Jr.	Steven E. Krcik	Nancy Kilbridge Pontier	Raphael Unrug
Charles Edward Brown	John A. Grow	Charles W. Kreidler	Gregory M. Powers	Walter S. Urbanski, Jr.
Jerry Brown	Thomas E. Guensburg	Lee F. Krystinik	Richard G. Prucha	David D. Vieau
David S. Brumbaugh	William A. Guilfoyle	Gretchen C. Kuhn	Fei Qi*	Thomas E. Vinson
John P. Buchanan	Anita Gutierrez-Sanders*	Kweepin Kwok*	Rodney E. Raschke	Robert D. Wallace
Thomas A. Bush	Richard A. Hagar	G. Michel Lafon	Michael G. Rasmussen	Lynn M. Walter*
Phillip E. Byrd	Molly Lou Hamill	Henriette M. Lapierre	R. Craig Ray*	Paul H. Warren
Thomas J. Calabrese	Terence Hamilton-Smith	Vincent T. Larsen	Carter E. Reed	William B. Whiteford
Gary J. Calderone*	Edward C. Hansen	Thomas L. Leck	Samuel R. Reeves*	Marjorie A. White-Heyman
Christopher J. Center	Jennifer W. Harden	Anthony J. Lee	Richard G. Reider	Robert A. Whitney
Valerie E. Chamberlain	Janet M. Harris-Di Maggio	Mingchou Lee	Robert C. Rettke	William D. Wiggins
Sambhu Chaudhuri	Fred L. Hart	Robert D. Libra	Stephen G. Reuter	David C. Williams
V. Collins Chew	Gary S. Hartman	Bernard J. Lindsey, Jr.*	Robert E. Reynolds	Robert A. Williams
Mark W. Clardy	Joseph H. Hartman	John H. Livingston, Jr.	Thomas L. Rice	Grant C. Willis*
Mark Cloos	Mick Y. Hartsell	Michael T. Long	Hugh J. Rieck	Leonard W. Wilmarth
G. Kent Colbath	David E. Hassrick	Frederick K. Lutgens	Rob Risley*	Edward C. Wilson
Margaret R. Condon	David M. Hatfield, Jr.*	Carrie Manfrino*	Ann S. Robbins*	Elisabeth Wilson
Walter K. Conrad*	Terrance Haviland	Lynn Margulis	Edna P. Rodriguez-Ornelas	Peter S. Winn
Michael E. Crawford	Richard S. Hazen*	Jonathan B. Martin	Frank W. Root*	Michael Wireman
Holly S. Cunningham*	Timothy A. Hemker	Ross A. Martinek	Richard J. Rudy	Leslie B. Wolff
J. Brad Curtis	B. Terrence Hennessey	Robert G. Marvinney*	Raymond L. Ruehle	Michael M. Wood
Hugh T. Danaher	Michael W. Hester*	Bruce A. Matsutsuyu	Scott L. Russell	Thomas R. Worsley
Nick D. Andrea	O. Glenn Heyman	Suzette K. May*	Thomas P. Ryavec	Cynthia R. Wright
Warren C. Day*	John J. Hickey	Kevin J. McClain	Richard E. Sacks*	Bill Wyman
Jeffrey O. Dean	Bryan A. Hicks*	John C. McDonald	Barry A. Sargent	Kenneth M. Yoder
Leo A. DeVito	John C. Hilburn	John D. McFarland III	John C. Schumacher*	James R. Young
William S. Dillard	Mary Louise Hill	William G. McGilvray	Hilde L. Schwartz*	George J. Yurkas
		Donald F. McNeill		
		Helmar A. Meerheim*		

## NEW GSA STUDENT ASSOCIATES

Listed are 328 Student Associates who became affiliated with the Society during the period  
from March 1, 1984, through August 31, 1984.

Shirley J. Adams	Kenneth J. Clark	Carlett J. Grey	Steven W. Lee	William L. Power
Laura Jean Ahrens	Michael L. Clark	Joseph H. Griffin	William S. Leith	Dave Prouty
John R. Aime	William P. Clement	Alicia P. Grimes	Maureen P. Leshendok	Dave D. Puls
Clark R. Alexander, Jr.	Lawrence S. Cohen, Jr.	Geoffrey H. Gushee	Kenneth P. Levinson	Jane M. Quast
Mark H. Anders	R. Duff Collins	Catherine A. Gustafson	Anneliese Lilje	Catherine J. Quinn
Jane L. Anderson	Michael J. Compagno	Eric D. Gyllenhaal	Tung-Hung Thomas Lin	Linda V. Rankis
Eve M. Arnold	John D. Conway	Walter R. Hale	Wei-Hsiung Lin	Wayne D. Ranney
Maria Guadalupe Arriola-Diaz	Eric J. Costa	Wendy K. Hanson	Donald L. Lofgren	Leslie N. Ransbottom
Carrie J. Babcock	Mathew A. Cotton	Peter L. Haraden	Thomas D. Lorenson	John R. Rasmussen
Lisa H. Bailey	Richard M. Cousineau	Angelika M. Harder	Christopher C. Loughman	Franco P. Raviola
Allen J. Bakel	Reed W. Crook	James F. Hardwick, Jr.	Judy Ann Lowman	David E. Reich
Debra I. Balon	Peggy D. Crumbie	J. Kirk Hardy	Stephen E. Lucas	Rebecca Renner
Christopher S. Banning	Mark A. Culbreth	Janet L. Hardy	Jacqueline Lundy	Robert K. Reynolds
Nancy J. Banta	E. Ellen Daley	Jeffrey C. Hawkins	Alan D. Maharidge	Stephen M. Richard
Luis A. Barba	Kevin W. DaVee	Terry J. Hayden	Donald J. Maloney	Janis L. Roberts
James R. Bard	John S. Davis	Frederick M. Haynes	Vasilios S. Mandros	Veronique Robigou
Andrea R. Barone	Linda L. Davis	Mary Jo Hedrick	James B. Mann	Sylveen E. Robinson
Michael L. Base	William J. Davis	Nathan D. Heinrich	Angelica Martinez-Guzman	Christine P. Rogers
David R. Baumer	Phillip G. Desatoff	Chris D. Hendrix	C. Paul Matheny	Julie A. Roller
Anna L. Baumhoff	Dave A. Diem	J. Jeffrey Hertzling	Susan E. McCauslin	Linda J. Roos
George M. Bedinger	Frank W. Diemel	Kenneth A. Hickey	Elizabeth A. McClellan	Linda C. Ross
Sean J. Bennett	Timothy N. Diggs	Paul K. Hildebrandt	David S. McCormick	Susan L. Rowley
David W. Berry	Vincent N. DiRenzo	Richard S. Hitchings	William D. McGhee, Jr.	Cassandra J. Runyon
Thomas A. Billman, Jr.	William L. Ditto	Brian R. Hoyt	Krista I. McGowan	Michael D. Ruth
Andrew G. Blackmon	Sandy Draper	Lisa C. Huggenvik	Peter K. M. Megaw	Timothy J. Ryherd
David A. Blumenthal	Dennis C. Edwards	James C. Hunter	David C. Meyer	Donald E. Sabol, Jr.
Dirk A. Bodnar	Geoffrey S. Elliott	Michael A. Hunter	Mark A. Miesfeldt	Scott D. Sachs
Alan J. Bol	Kevin M. Engel	Michael T. Hurd	M. Meghan Miller	Michael S. Sampson
John J. Bowers, Jr.	Mary Anne Engman	David F. Hurbut	Michael R. Mooney	Theresa M. Santangelo
Claudia L. Boykin	Karen R. Epperson	Thomas L. Hurst	Jeffrey M. Moore	Elizabeth R. Schermer
James J. Brady	Roy E. Ervin	Frank A. Irwin, Jr.	William A. Moore	John H. Schmidt
Timothy J. Bralower	Scot P. Farquhar	Michael E. Jackson	Earl L. Morse	Peter M. Schmidt
William C. Brandon	Carolyn R. Feakes	William A. Jackson	Brian J. Mossman	Janette H. Schuster
Pete L. Brittingham	Jeffery S. Fehr	David K. Jacobs	James Gordon Munsey	Kenneth A. Shimko
Rachelle A. Brooker	Ellen J. Ferrara	Gary L. Jacobson	Gregory P. Murphy	David M. Side
Paul L. Brookner	Samuel P. Figuli	Cesar Jacques-Ayala	Robert C. Murray	James C. Sides
Scott L. Buckley	Steven L. Fink	Emil W. P. Jalajas	William L. Neal	Robert W. Simmons
Thomas R. Buggy	Alex J. Fischer	John E. Jenkins	Rey Nelson	Ruth H. Simmons
Nicholas Bugosh	John Fitzgerald	Stephen V. Johnson	Jay R. Neuhaus	Stuart F. Simmons
Wendy C. Bunnell	Richard I. Fletcher	Douglas R. Jones	Marjorie A. Nichols	D. Scott Singdahlsen
William D. Burgel	Martin W. Fleurette	Peter J. Jones	Carlos Enrique Nunez	Kenneth G. Sleeper
Gerald R. Burkett	Julia E. Fonseca	Ronald M. Kaiserman	Barbara E. Officer	Edward C. Smith
Annetta L. Burroughs	Steven M. Fortier	Andrew M. Keim	Sharon B. O'Loughlin	Kathleen S. Smith
Calbert C. Butler II	Mark D. Fries	Jonathan R. Kelafant	Jon E. Olson	Diana Nelson Solie
Bernard Cadieux	Scott E. Gable	Edward F. Kelly, Jr.	Charles R. Owens	Steven M. Solomon
Kent D. Campbell	Lisa R. Gaddis	R. Steven Kemp	John J. Ozoga III	Alan D. Spear
Howard E. Canfield	William B. Gallagher	Theodore R. Keppta, Jr.	Lotus C. Pace	Stephen E. Speyer
Thomas Carter	Pete Geddes	Sylvia J. King	Richard J. Pagano	Mark A. Steiner
Stephen P. Catlin	Dennis J. Geist	Karen J. Kinsella	Michael A. Palmer	Wendy Sumner
Stephen J. Cauller	J. Duane Gibson	Ronald J. Koenraad	Lawrence A. Park	Sally J. Sutton
C. Page Chamberlain	Thomas E. Gill	Kevin M. Kohles	Diane E. Parry	Stephen T. Sutton
John Mark Chamberlain	Erik B. Goodwin	Dana Kopet	Kenneth K. Peace	Terry T. Sutton
Shih-bin Robin Chang	Barbara M. Gossiaux	Ann M. Kosobud	Philip A. Pearthree	Kirk E. Swanson
Amanda Chan Quinones	John R. Gould	Ruth Schultz Kramer	Jane S. Peplinski	Tim L. Syverson
Anne Charland	James S. Granata II	Margaret L. Krebs-Jespersen	A. Elizabeth Perry	F. Erickson Taylor
Chanda A. Child	Miles J. Grant	Thomas Kremer	John D. Perry	Raymond R. Thibault
Anne Chin	Donald C. Gray	Laurie J. Kurilla	Timothy J. Pfeiffer	Michael B. Thomas
Robert F. Chmielewski	Benjamin B. Greeley	Brien A. Laird	Keith A. Pine	Robert B. Thomas
Mark L. Christensen	John C. Greer	Bettina E. Laswood	Clay E. Postlethwaite	Robert L. Tolliver



### New Student Associates

Lisa M. Toothaker	Anne W. Vaughan	Stephen I. Wareham	Paula L. Wiens	Dale A. Winkler
Daniel R. Tormey	Dwight A. Veasey	Andrew G. Warne	Chris L. Williams	Mark J. Witkowski
Cheryl L. Treat	Rolland L. Voit	Suzanne Y. Wdowiak	Michael D. Wilson	Douglas E. Woodcock
Stephan A. Tyler	Farideh Vosough Kia	Robert H. Webb	Readin I. Wilson	Dirck E. Wuellner
Rusty J. Uscola	Sylvia J. Walters	Diane P. Westen	T. Margueritte Wilson	Chun Yeung Yan
Jay E. Valusek	Duane A. Wanty	Jonathan E. Westfall	Wally R. Wilson	Sara L. Zimmerlee
Ana G. Vargo	Robert L. Ward	Olaf Westphalen		

## NEW GSA FELLOWS

The following candidates were elected to Fellowship by Council action at the November 1984 meeting.

Jack B. Bailey	Ronald Doig	Philip R. Kyle	Richard W. Ojakangas	Ralph R. Shroba
James B. Benedict	Thomas D. Fouch	Robert L. Laney	Frederick J. Pearson, Jr.	Michael A. Smith
Willi K. Braun	Carol Metcalf Gardipe	Warren Manspeizer	Morris S. Petersen	Norman D. Smith
Richard L. Brown	Lee C. Gerhard	James M. Mattinson	Tom L. Phillips	Jan Veizer
Bobb Carson	Rand S. Harrison	Geoffrey Norris	Constance A. Sancetta	Grant M. Young
Stephen C. Clement	James A. Hartman		William A. S. Sarjeant	Mark D. Zoback

### Final Announcement

## SOUTHEASTERN SECTION, GSA, ANNUAL MEETING Knoxville, Tennessee March 20-22, 1985

The Southeastern Section of the Geological Society of America will meet at the Knoxville Hilton Hotel in Knoxville, Tennessee, together with the Southeastern Section of the Paleontological Society, the Southeastern Section of NAGT, and the Pander Society. The meeting is sponsored by the University of Tennessee and by the Tennessee State Division of Geology.

Local Committee Chairman: Kenneth R. Walker

Technical Program, Committee Chairman: Lawrence A. Taylor

Both at Department of Geological Sciences, University of Tennessee, Knoxville, TN 37996-1410, (615) 974-2366.

### 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 February 20, 1985.**

Complete the registration form and return with a check or money order in U.S. currency, made payable to *Southeastern Section GSA*, Department of Geological Sciences, University of Tennessee, Knoxville, TN 37996. Those planning to attend the field trips, the short course or the spouse/guest tour must preregister by February 20, 1985. Refunds on canceled preregistration will be made in full until February 20, 1985. After this date, no refund will be made except for cancellation of a field trip or the spouse/guest tour.

*On-site Registration:* Registration, and pick-up of meeting materials by those who have preregistered, will be from 1200 to 2000 hours on Wednesday, March 20, and from 0800 to 1700 hours on both March 21 and 22. Registration will be held in the Mezzanine of the Knoxville Hilton Hotel.

### WELCOMING PARTY

A welcoming party for those attending the meeting will be held from 2000 to 2230 hours on Wednesday, March 20, at the Club LeConte with a panoramic view of the Cumberland Plateau, the Valley and Ridge, and the Blue Ridge Mountains.

### TECHNICAL PROGRAM

Technical sessions will be scheduled as oral presentations and poster sessions on Thursday, March 21, and Friday, March 22.

### SYMPOSIA

- 1. Geometry and Mechanisms of Appalachian Thrusting.** Steven Wojtal, Department of Geology, Oberlin College, Oberlin, OH 44074; Gautam Mitra, Department of Geological Science, University of Rochester, Rochester, NY 14627. Thrust fault geometry, mechanisms by which thrust faults develop and move, and interaction between thrust mechanisms and geometry.
- 2. Petrology and Geochronology of Metamorphism in the Southern Appalachians.** David W. Mohr, Department of Geology, Texas A & M University, College Station, TX 77843; Stephen A. Kish, Department of Geology, Florida State University, Tallahassee, FL 32306. Taconic versus Acadian Alleghenian (Hercynian?) metamorphism; use of geothermometry and geobarometry to characterize Barrovian versus other styles of metamorphism, with geodynamic implications.
- 3. Volcanogenic Sulfide and Precious Metal Mineralization in the Southernmost Appalachians.** Thornton L. Neathery, Geological Survey of Alabama, P.O. Box O, University Sta-

(continued on p. 195)

## PREREGISTRATION FORM

Southeastern Section, GSA, Annual Meeting  
March 20-22, 1985, Knoxville, Tennessee

**IMPORTANT**

1. Full payment must accompany registration.
2. Register one: professional, student, or spouse/guest.
3. Your check will be your receipt. Copy this form for your records. If you wish to receive acknowledgment of your preregistration, please enclose a self-addressed, stamped envelope.
4. Preregistration deadline: **Must be postmarked no later than February 20, 1985.** Preregistration deadlines for the field trips, short course, and guest/spouse tour are February 20, 1985.

**FOR OFFICE USE ONLY**

ck/M.O. # \_\_\_\_\_ Amount \$ \_\_\_\_\_  
 Personal check \_\_\_\_\_ Other check \_\_\_\_\_  
 Issued by \_\_\_\_\_

Name \_\_\_\_\_  
last first middle

Registered as:       Professional       Student       Spouse/Guest

Spouse/Guest name for badge \_\_\_\_\_

Affiliation (abbreviate for badge) \_\_\_\_\_

Professional address \_\_\_\_\_  
street city state zip code

Phone: Business (      ) \_\_\_\_\_ Residence (      ) \_\_\_\_\_

GSA Member:    yes      no      Speaker:    yes      no      GSA Student Associate:    yes      no

Preregistration of GSA member (prior to Feb. 20) .....	\$24	\$ _____
Preregistration of non-GSA member (prior to Feb. 20) .....	\$29	\$ _____
Registration of GSA member (after Feb. 20) .....	\$29	\$ _____
Registration of non-GSA member (after Feb. 20) .....	\$34	\$ _____
Preregistration of GSA Student Associate (prior to Feb. 20) .....	\$ 8	\$ _____
Preregistration of non-GSA student (prior to Feb. 20) .....	\$11	\$ _____
Registration of GSA Student Associate (after Feb. 20) .....	\$11	\$ _____
Registration of non-GSA student (after Feb. 20) .....	\$14	\$ _____
Spouse/guest registration .....	\$10	\$ _____
Spouse Tour to Smoky Mts. & Gatlinburg (March 21) .....	\$20	\$ _____
GSA Southeastern Section Banquet, Knoxville Hilton Hotel (March 21) .....	\$12	\$ _____
Paleontological Society and Pander Society Buffet Luncheon (March 22) .....	\$ 8	\$ _____

**Registration For Short Course**

"An Outline of Balanced Structure Sections" .....

Preregistration deadline for the Short Course is Feb. 20, 1985.      \$49      \$ \_\_\_\_\_

All short-course participants must also preregister for the meeting.

**Field-Trip Registration**

Preregistration deadline for field trips is Feb. 20, 1985.

All field-trip participants must also preregister for the meeting.

**Premeeting Trips**

Field Trip 1. Zinc Mineralization in the Knox Group Carbonates, East Tennessee (March 20) .....

Field Trip 2. Lower Pennsylvanian Clastic Sediments and Associated Coals

in the Walden Ridge South (March 20) .....

**Postmeeting Trips**

Field Trip 3. Structural Transect in SW Virginia and NE Tennessee (March 22-23; includes 1 night lodging) .....

Field Trip 4. Ophiolites(?) of the Southern Appalachian Blue Ridge (March 22-24; includes 2 nights lodging) .....

Field Trip 5. Sulfide Deposits of the Ducktown Mining District, Tennessee (March 23) .....

Field Trip 6. Paleozoic Stratigraphy in the Knoxville Part of the Tennessee Valley and Ridge Province (March 23) .....

Field Trip 7. Quaternary Geology and Paleoecology of East Tennessee (March 23) .....

**TOTAL FEES**—Enclose check or money order, U.S. funds only, made payable to **Southeastern Section GSA** .....

**PREREGISTRATION FORMS MUST BE POSTMARKED NO LATER THAN FEBRUARY 20, 1985**

Full refunds on canceled preregistrations will be made until Feb. 20, 1985. After that date, no refunds will be made except for canceled field trips.

Mail completed registration forms and fee remissions to:

Dr. Paul Delcourt

Southeastern GSA Registration

Department of Geological Sciences, University of Tennessee, Knoxville, TN 37996-1410

**SOUTHEASTERN SECTION** (continued from p. 193)

tion, Tuscaloosa, AL 35486; Kula C. Misra, Department of Geological Sciences, University of Tennessee, Knoxville, TN 37996. Geologic setting of the region with respect to possible mineralization, mineralization models, geochemical signatures, mineral zonation, and geophysics.

4. **Recent Advances in Biozonation in the Southeast.** Sponsored by the Southeastern Section of the Paleontological Society. Scott Brande, Department of Geology, University of Alabama, Birmingham, AL 35294; David R. Schwimmer, Department of Earth Science, Columbus College, Columbus, GA 31907. Newer aspects of age relationships based upon fossils in all terranes in the southeastern United States.

**SHORT COURSE**

**An Outline of Balanced Structure Sections.** Lecturers: Nicholas B. Woodward and Steven E. Boyer. This one-day short course reviews the goals of "balancing" and the principles and assumptions upon which balanced sections are based. It also examines the methods that different scientists have used to

"restore" sections. The morning lectures will be followed by an afternoon workshop session in which examples of sections from the Appalachians and the Cordillera will be balanced, compared, and dissected. Participants can bring a section of their choice to work on during the workshop. **Wednesday, March 20.** Limit: 25; cost \$49 (includes lunch, beverages, and short-course notes; doesn't include dinner or hotel). For further information, contact Nick Woodward, Department of Geological Sciences, University of Tennessee, Knoxville, TN 37996-1410.

**FIELD TRIPS**

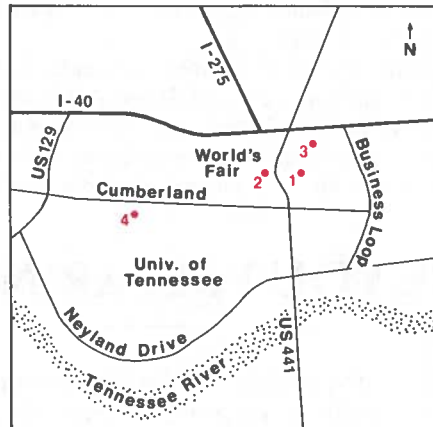
**Premeeting Trips**

1. **Zinc Mineralization in the Knox Group Carbonates, East Tennessee.** J. Edward McCormick, Kula C. Misra, Habte G. Churnet, and Otto C. Kopp. Includes visits to the Coy Zinc mine (underground), a mineralized section in the Copper Ridge district, and an unmineralized section of Knox Group carbonates. Leaves Knoxville Wednesday, March 20, and returns the same evening. Limit: 20; cost \$24; lunch and guidebook included.

(continued on p. 196)

**HOUSING**

A block of rooms has been reserved at the headquarters hotel, the Knoxville Hilton (location 1 on map). For this meeting the room rates will be: single or double \$45; triple or quad, \$60, plus tax. When these rooms have been filled, reservations will be forwarded to the Holiday Inn World's Fair (2), the Quality Inn Downtown (3), and the Sheraton Campus Inn (4). Room rates for these hotels will not exceed the rates quoted above. Reservations will be held until 6:00 p.m. on day of arrival unless one night's deposit is received by your hotel or guaranteed by credit card.



**HOUSING FORM**

Southeastern Section, GSA, March 20-22, 1985  
Knoxville, Tennessee

**DEADLINE FOR RESERVATIONS: March 1, 1985**

Please complete only one form for EACH room requested. Confirmations will be sent by the hotel only to the person completing this form. The Knoxville Convention Bureau cannot accept money or reservations by telephone.

Name: \_\_\_\_\_

Address: \_\_\_\_\_

Phone: (        ) \_\_\_\_\_

Type of room requested:

- \_\_\_\_\_ Single (1 bed, 1 occupant)
- \_\_\_\_\_ Double (2 beds, 2 occupants)
- \_\_\_\_\_ Triple (2 beds, 3 occupants)
- \_\_\_\_\_ Quad (2 beds, 4 occupants)

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

Alternate hotel preference (if Hilton is full): \_\_\_\_\_

Arrival date: \_\_\_\_\_

Departure date: \_\_\_\_\_

Mail Completed Housing Form to:  
Knoxville Convention Bureau  
P.O. Box 15012  
Knoxville, Tennessee 37901



**SOUTHEASTERN SECTION** (continued from p. 195)

2. **Lower Pennsylvanian Clastic Sediments and Associated Coals in the Walden Ridge South.** Habte G. Churnet and Richard E. Bergenback. Excellent outcrops of Lower Pennsylvanian clastic sediments and some associated coals are exposed along Highways 30 and 27 on both the east and west side of Walden Ridge (part of the Cumberland Plateau). Trip offers an excellent opportunity to examine lithofacies relationships in Lower Pennsylvanian rocks. Departs early Wednesday, March 20, and returns the same evening. Limit: 40; cost \$29; lunch and guidebook included.

**Postmeeting Trips**

3. **Structural Transect in SW Virginia and NE Tennessee.** Frederick W. Diegel and Steven F. Wojtal. Six stops across the Valley and Ridge and Blue Ridge front from Duffield, Virginia, to Mountain City, Tennessee. Will visit the Hunter Valley and Saltville thrusts, the core of the Bays Mountain Synclinorium and the Mountain City Window. Departs Knoxville Friday evening, March 22; night in Kingsport, Tennessee; return to Knoxville about 8 p.m. Saturday, March 23. Limit: 25; cost \$61; Friday dinner and hotel, Saturday lunch, and guidebook included.
4. **Ophiolites(?) of the Southern Appalachian Blue Ridge.** Harry Y. McSween, Jr., and Robert D. Hatcher, Jr. Outcrops of the Chunky Gal Mountain, Carroll Knob, and Laurel Creek mafic-ultramafic complexes in northwestern North Carolina and northern Georgia. Includes studies of the petro-

logic, structural, and metamorphic features of these complexes and discussion of the evidence for ophiolitic origin. Departs Knoxville Friday evening, March 22; returns Sunday afternoon, March 24. Friday and Saturday nights in Dillard, Georgia. Limit: 40; cost \$75; hotel lodging (two nights), Saturday and Sunday lunches, and guidebook included.

5. **Sulfide Deposits of the Ducktown Mining District, Tennessee.** Randy Slater and Kula C. Misra. Includes visits to the Cherokee mine (underground) and open-pit operations, and several stops to examine metamorphism, deformation, and mineralization in the country rocks. Departs Knoxville, Saturday, March 23, morning; returns the same evening. Limit: 20; cost \$32; lunch and guidebook included.
6. **Paleozoic Stratigraphy in the Knoxville Part of the Tennessee Valley and Ridge Province.** Don W. Byerly, Steven Driese, and Kenneth R. Walker. Visits the classic Thorn Hill section ranging from the Lower Cambrian Rome Formation at the Cooper Creek fault to the Mississippian Grainger Formation at the Saltville fault. Aside from the classical stratigraphy to be studied, state-of-the-art engineering geology can be viewed along the recent cuts across Clinch Mountain. Departs early Saturday, March 23; returns that evening. Limit: 40; cost \$27; lunch and guidebook included.
7. **Quaternary Geology and Paleogeology of East Tennessee.** Paul A. Delcourt and Hazel R. Delcourt. Presents geomorphic, paleogeologic, and archaeological studies of late Quaternary river terraces along the Lower Little Tennessee River Valley from Lenoir City to Chilhowee; colluvial and periglacial deposits in the western part of Great Smoky

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## SOUTHEASTERN SECTION

Mountains National Park; synthesis of late Quaternary environments in the Ridge and Valley and the Blue Ridge physiographic provinces of east Tennessee. Departs Knoxville early Saturday, March 23; returns late that afternoon. Limit: 13; cost \$28; lunch and guidebook included.

**Field-trip preregistrants must also preregister for the meeting.** Field-trip registration is on a first-come, first-served basis. If a trip is oversubscribed or canceled, the full trip fee will be refunded. **Preregistration for field trips must be received by February 20, 1985**, accompanied by full payment. Trips may be canceled if registration is insufficient. **No trip refunds will be made after February 20, 1985.** Field-trip chairman is Nick Woodward, Department of Geological Sciences, University of Tennessee, Knoxville, TN 37996-1410, (615) 974-2366.

### PUBLICATIONS

Additional copies of the *Abstracts with Programs* volume, the field-trip guidebooks, and the short-course notes may be purchased at the Registration Desk in the Mezzanine of the Knoxville Hilton. After the meeting, field-trip guidebooks and short-course notes may be purchased from the Department of Geological Sciences, University of Tennessee, Knoxville, TN 37996-1410.

### PROJECTION EQUIPMENT

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

### EXHIBITS

Geological exhibits concerning education, research, and industry will be on display in the Great Smoky Mountain Center, Rooms A, B, and C, adjacent to the technical sessions in the Knoxville Hilton. The exhibit booths range in size from 8' x 6' to 8' x 12'; rental fees vary from \$100 up to \$200 for educational and nonprofit institutions and from \$250 to \$450 for commercial exhibitors. For additional information, contact Paul Delcourt, Department of Geological Sciences, University of Tennessee, Knoxville, TN 37996-1410.

### SPECIAL EVENTS

All of the following meetings (except for the activities of the Paleontological and Pander Societies) will be held in the Knoxville Hilton Hotel.

**Southeastern Section Management Board Meeting**, Wednesday, March 20, 1800 to 2000 hours.

**Southeastern Section Campus Liaison Group Breakfast**, Thursday, March 21, 0700 hours.

**Southeastern Section Business Meeting**, Thursday, March 21, 1700 to 1800 hours.

**GSA Southeastern Section Banquet**, Thursday, March 21, 1830 hours for cocktails; 1930 hours for banquet.

**Southeastern Section of NAGT (National Association of Geology Teachers)**, immediately following the NAGT technical sessions.

**Joint Buffet Luncheon and Business Meetings of the Southeastern Section of the Paleontological Society and the Pander Society**. Friday, March 22, from 1230 to 1400 hours at the UTK Faculty Club. Transportation will be provided between the Knoxville Hilton and the UTK Faculty Club.

**Pander Society Workshop**. Friday, March 22, from 1430 to 1600 hours in the Geology and Geography Bldg. (on the "Hill"), Department of Geological Sciences.

**Local Committee Dinner**, Friday, March 22, starting at 1900 hours.

### GUEST AND SPOUSE ACTIVITIES

The Knoxville Convention and Visitors Bureau will maintain an information desk in the Registration Area; they will provide details concerning tours and brochures concerning local attractions. Address: 901 E. Summitt Hill Dr., P.O. Box 15012, Knoxville, TN 37901; (615) 523-7263.

### Spouse Tour (March 21)

Scenic Tour of Great Smoky Mountains National Park and a visit to Gatlinburg. About 4.5 hours long; cost \$20. (If there is not sufficient response for this tour, it will be canceled and the fee refunded.)

### TRAVEL

Several major airlines (Delta, Eastern, Republic, United, and USAir) and bus lines (Greyhound and Trailways) serve Knoxville. For those who drive, Interstate Highways 75 and 40 provide direct access to Knoxville.

## GSA OFFICERS AND COUNCILORS FOR 1985

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## PEOPLE

Member **William M. Kaula**, University of California, Los Angeles, has been made head of the National Oceanic and Atmospheric Administration's National Geodetic Survey Division.

The American Astronomical Society's Division for Planetary Sciences has awarded its annual Kuiper Prize to Fellow **Eugene M. Shoemaker**, U.S. Geological Survey, Flagstaff.

Fellow **Thomas B. Nolan** has been given a special award for his 60 years of service with the U.S. Geological Survey, including nine years as its director.

Among the American Association of Petroleum Geologists Distinguished Lecture speakers for 1984-1985 are Fellow **Robert H. Dott, Jr.**, University of Wisconsin; Fellow **Robert N. Ginsburg**, University of Miami, Fisher Island; Fellow **Erle G. Kauffman**, University of Colorado, Boulder; Fellow **Robert J. Weimer**,

professor emeritus, Colorado School of Mines; and Member **Martha O. Withjack**, ARCO Oil and Gas Company, Dallas.

The American Institute of Professional Geologists has awarded its Ben H. Parker Memorial Medal to Fellow **Robert L. Bates**, professor emeritus, Ohio State University, Columbus; the Martin Van Couvering Memorial Award to Fellow **Andrew G. Alpha**, consultant, Denver; the first AIPG Honorary Membership to Fellow **Grover E. Murray**, Texas Tech University; and the 1984 Public Service Award to Fellow **Allen F. Agnew**, consultant and geology professor, Corvallis, Oregon.

**Correction:** GSA Fellow B. Clark Burchfiel was elected to the American Academy of Arts and Sciences, not to the National Academy of Sciences.

### Memorial Preprints

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

- Geoffrey Bond, by James F. Wilson
- Lawrence C. Craig, by Fred W. Cater, Jr.
- Charles Mumaw Cross, by Elmo W. Adams
- Olaf P. Jenkins, by Gordon B. Oakeshott
- Georges Ordonez, by James Boyd
- Ogden L. Tweto, by P. K. Sims and T. A. Steven
- Gregory Worthington Webb, by Edward S. Belt

### IN MEMORIAM

George R. Downs  
Denver, Colorado  
June 1984

Vard H. Johnson  
Palo Alto, California  
June 30, 1984

Lawrence L. Whitcomb  
Allentown, Pennsylvania  
September 7, 1984

### New USGS Map Outlines Major Folds and Thrust Belts

A colorful new geologic map outlining the location of the three major fold and thrust-fault belts of the conterminous United States, which may contain significant—though deeply buried—energy resources, has been published by the U.S. Geological Survey, Department of the Interior.

The three geologic areas defined on the USGS map are the Appalachian Fold and Thrust Belt, also known as the Eastern Overthrust Belt—an area that has been explored intensively for natural gas and has produced some gas discoveries; the Ouachita Fold and Thrust Belt, also known as the Southern Overthrust Belt, a relatively unexplored area; and the Cordilleran Fold and Thrust Belt, also known as the Western Overthrust Belt, where several giant oil and gas fields have already been discovered.

Copies of the unfolded two-sheet (each sheet is 41" x 52") map, "Generalized Structural, Lithologic and Physiographic Provinces in the Fold and Thrust Belts of the United States," by Kenneth C. Bayer, are available for \$8.80 per set, plus \$1 postage and handling on all orders less than \$10, from the Eastern Distribution Branch, USGS, 1200 South Eads St., Arlington, VA 22202. A legend sheet (32" x 52") is also included with the map set. Orders must include the name of the map and a check or money order payable to Department of the Interior—USGS.



North American members should report address changes 6 to 8 weeks in advance; all others, 3 months in advance.

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# CLASSIFIED ADVERTISING

Ads (or cancellations) for the February issue must reach the GSA office by December 15.

Per line per issue	1x	3x	6x	12x
Situations Wanted:	\$1.25	\$1.10	\$ .95	\$ .85
Positions Open:	\$3.00	\$2.64	\$2.28	\$2.04
Consultants:	\$3.00	\$3.00	\$2.64	\$2.28
Services & Supplies:	\$3.20	\$3.20	\$2.81	\$2.17

Code number \$2.75 extra.

Agencies and organizations may submit purchase order or payment with copy. Individuals must send prepayment with copy.

To answer coded ads, use this address:  
Code # . . . . , GSA News, P.O. Box 9140, Boulder, CO 80301

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

## Situations Wanted

**Earth Scientists seeking employment or change in position!** Now you can advertise your availability, qualifications, and goals in this column each month for a very modest investment. You will reach more than 13,500 earth scientists through these pages -- the very people who are most likely to need your skills. Blind box numbers available for privacy. See above for rates, details, and closing dates.

## Positions Open

### SEDIMENTARY PETROLOGIST

**Wright State University**  
The Department of Geological Sciences invites applications for a tenure-track position in sedimentary petrology, at the assistant professor level beginning September 1, 1985. Candidates must have an interest in carbonate rocks and basement analysis. Preference will be given to people capable of teaching introductory paleontology. The department has a large M.S. program and wishes to expand their sedimentary petrology group. Applicants should expect to complete all requirements for the Ph.D. in geological sciences or related field by September 1, 1985. Send resume and three letters of reference to Chairman, Search Committee, Department of Geological Sciences, 260 Brehm Laboratory, Wright State University, Dayton, Ohio 45435. Closing date for applications is January 15, 1985. Wright State University is an equal opportunity/affirmative action employer. 12 12

### POLLUTION CONTROL

**State of Illinois**  
Exciting challenges are presented in the newly created Scientific/Technical Support Section of the Illinois Pollution Control Board. We must immediately fill the following positions:

**Manager, Scientific/Technical Support Section:** Responsible for assigning, coordinating and reviewing the work of the staff of the section. Also acts as a working supervisor, maintaining an appropriate personal case load. Prefer a Ph.D. in the life sciences, physical sciences, or engineering with course work in subjects such as environmental science and management. Candidates must have a minimum of five years experience in pollution control with a minimum of two years experience supervising a professional staff.

**Environmental Scientist (Land-Air-Water):** A specialist is required for each of the three areas, to work with Board members in: the development of technical records; the development and gath-

ering of technical information and research; the identification and coordination of the use of expert witnesses; and for keeping Board members up-to-date on developments in pollution control. Requires at least a masters degree in the life or physical sciences or in engineering with additional relevant course-work, and at least three years experience in pollution control.

For further detail on these outstanding opportunities please contact: John P. Grubbs, State of Illinois, Room 327, 160 North LaSalle St., Chicago, IL 60601, (312) 793-6002. 12 12

### SEDIMENTARY GEOCHEMIST/GEOLOGIST

**Lehigh University**  
The Department of Geological Sciences at Lehigh University announces the availability of a tenure-track position at the Assistant Professor level starting September 1, 1985. The successful candidate will be expected to teach both graduate and undergraduate courses and to maintain an active research program. Primary consideration will be given to those whose research experience and professional interests are in low-temperature sedimentary geochemistry, but outstanding candidates in related research areas will also be considered. The Department of Geological Sciences has 9 faculty members and some 35 graduate students. Research facilities include automated XRF and XRD within the department; electron microprobe; analytical SEM, TEM, AA, etc. are available on campus. Respond with a letter describing research interests, full curriculum vita, and the names of three references by December 15, 1984, to: Charles B. Sclar, chairman, Department of Geological Sciences, Lehigh University, #31 Williams Hall, Bethlehem, PA 18015. Applications received after December 15 may not be given full consideration. Lehigh University is an equal opportunity, affirmative action employer. Women and minorities are especially encouraged to apply. 12 12

### GEOPHYSICS, METAMORPHIC PETROLOGY

**University of Alabama**  
The Department of Geology is seeking to add faculty members who can contribute to our growing strength in research, broadening of the scope of the department, and enhancement of our Ph.D. program. Following two additional appointments in August, 1985, the department will have 14 faculty members. Applications are invited for positions in: (1) geophysics, (2) metamorphic petrology. Preference will be given to applicants who have expertise in computer modeling. Ph.D. required. Position 2 will be as Assistant Professor. For position 1, rank and salary will be commensurate with qualifications, but filling the position will be contingent upon approval of the budget. Applications should be submitted before January 15, 1985, to William A. Thomas, Faculty Search Committee, Department of Geology, University of Alabama, P.O. Box 1945, University, AL 35486. UA is an Affirmative Action/Equal Employment Opportunity Employer. 12 12

### REMOTE SENSING MKTG REP./GEOLOGY.

Must have 3-5 yrs private sector experience in geol. applications of aerial/sat. imagery. B.S. req.; adv. deg. welcomed. Send resume and sal. req. to: Code #1000 GSA News. 12 01

### UNIVERSITY OF SOUTH CAROLINA

**2 year post-doctoral research assistant position anticipated.**

Person should have a strong background in structural geology of complexly deformed regions with an interest in geologic mapping and integration of diverse kinds of geologic and geophysical

data. Starting date as early as January 15, 1985. Closing date for applications December 31, 1984. Applications with vitae, interests, and possible referees should be sent to Prof. Robert D. Hatcher, Jr., Dept. of Geology, University of South Carolina, Columbia, SC 29208. The University of South Carolina is an affirmative action/equal opportunity employer. 12 12

## Situations Wanted

**Earth Scientists seeking employment or change in position!** Now you can advertise your availability, qualifications, and goals in this column each month for a very modest investment. You will reach more than 13,500 earth scientists through these pages -- the very people who are most likely to need your skills. Blind box numbers available for privacy. See above for rates, details, and closing dates.

## Consultants

**Geologic consulting firms & individuals!** Use this new, low cost GSA advertising medium to promote your services throughout the geologic community. More than 13,500 earth scientists from around the world, working in every discipline, read this news magazine every month. Talk to them! See above for rates, details, and closing dates.

## Services & Supplies

**Pocket Gophers:** Microcomputer programs for geophysics industry and education. Interactive modeling of gravity, magnetics, and resistivity. SKW Enterprises (Dept GSA), Box 3135, Boulder, CO 80307. 10 12

**1985 CSPG Calendar:** The Canadian Society of Petroleum Geologists is pleased to announce the world famous CSPG geological calendar, 1985 edition, is now available for purchase. This award winning publication features 12 full colour photographs with notations of geologic interest. A great Christmas gift, the 1985 calendar would make a welcome addition to any office wall. The calendar may be obtained by mailing five dollars (\$5), cheque or money order to: Canadian Society of Petroleum Geologists, 505, 206 - 7th Ave., S.W., Calgary, Alberta, T2P 2W7, Canada. VISA orders are accepted. Please supply VISA number and expiry date. 12 12

**Wear the GSA seal,** now available as a handsome solid brass belt buckle, 2 1/4" in diameter, for belts up to 1 1/2" wide at the buckle loop. Great for field or everyday wear, this attractive buckle makes an ideal gift. Only \$9.75 postage paid. Order from Publication Sales, GSA, P.O. Box 9140, Boulder, CO 80301. Enclose check, money order, or VISA/MC charge information & expiration date. Member discount applies.

**Employment Service.** Searching for a new geoscientist? Let the GSA Employment Service help you locate that qualified individual. Our computerized data file will provide a printout that includes the applicants' names, addresses, phone numbers, areas of specialty, type of employment desired, degrees held, years of professional experience, and current employment status. For more information contact: Clara Hodgson, GSA Employment Service, P.O. Box 9140, Boulder, CO 80301, (303) 447-2020.

# **MUG** **-A-** **MEMBER**

***There's still time!***  
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