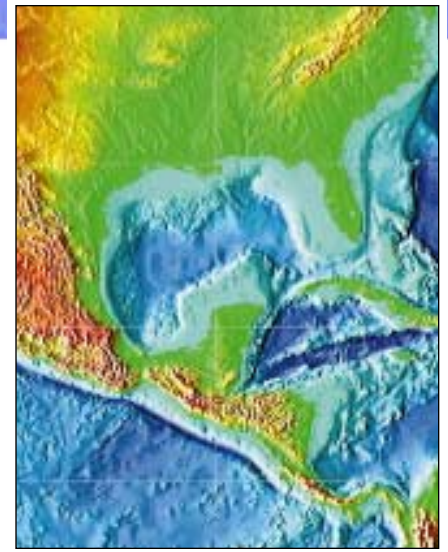


Vol. 5, No. 6

June 1995

GSA TODAY

A Publication of the Geological Society of America



NEW ORLEANS

BRIDGING THE GULF

1995 ANNUAL MEETING New Orleans, Louisiana • November 6–9

ABSTRACTS DUE JULY 12

For abstract forms (303) 447-2020, ext. 161;
E-mail: ncarlson@geosociety.org

SOFTWARE FAIR PROPOSALS DUE SEPTEMBER 1

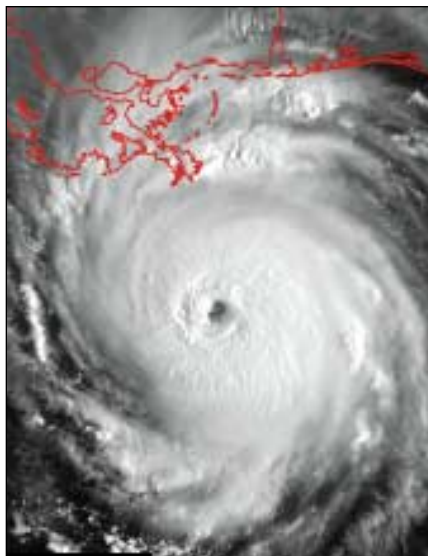
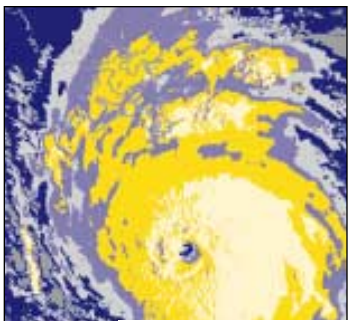
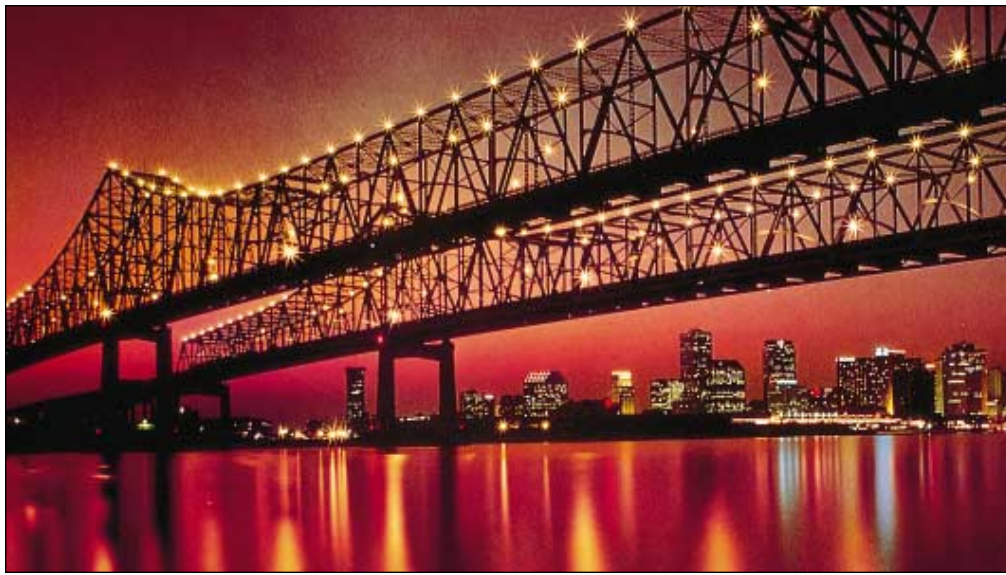
For information: (504) 286-6791; fax 504-286-7396;
E-mail: wbses@geology.uno.edu

PREREGISTRATION DUE SEPTEMBER 29

Registration and housing forms enclosed

INFORMATION

(303) 447-2020, ext. 184 or 1-800-472-1988; fax 303-447-0648;
E-mail: meetings@geosociety.org



The theme for the 1995 Annual Meeting is *Bridging the Gulf*. This theme has several meanings. In particular, we will draw attention to the Gulf of Mexico–Caribbean, and the surrounding American continents, bridging the knowledge gap that exists across a region divided by political boundaries and language but sharing a common geologic framework. *Bridging the Gulf* also addresses the need to develop a closer link between technology and the science of geology and to educate the public on issues critical to the development of intelligent policies on the environment and geologic hazards. We also hope to bridge the gulf between the past and the future with both a retrospection on the past 25 years of plate tectonics and a look at the future as geology responds to society's needs. Finally, we view the city of New Orleans, the Mississippi River and its delta, and the Gulf Coast as a laboratory where the long-term effects of humans on the environment can be examined.

NEW ORLEANS: The Crescent City–New Orleans is nestled on the inside of a south-looping meander of the Mississippi River. The early city (Vieux Carré or French Quarter) was built on the Mississippi's natural levee, and then expanded up, down, and across the river, and later northward through the swamp to the south shore of Lake Pontchartrain. New Orleans is especially noted for its cuisine and music, both of which have been influenced by the French, Spanish, African, English, and Native Americans who have made the city and its surrounding waterways their home. Come this November and discover the grace and charm of America's most unusual city.

Bill Craig
General Chairman

GSA DIVISIONS

Archaeological Geology • Coal Geology • Engineering Geology • Geophysics • Geoscience Education • History of Geology • Hydrogeology • International • Planetary Geology • Quaternary Geology and Geomorphology • Sedimentary Geology • Structural Geology and Tectonics

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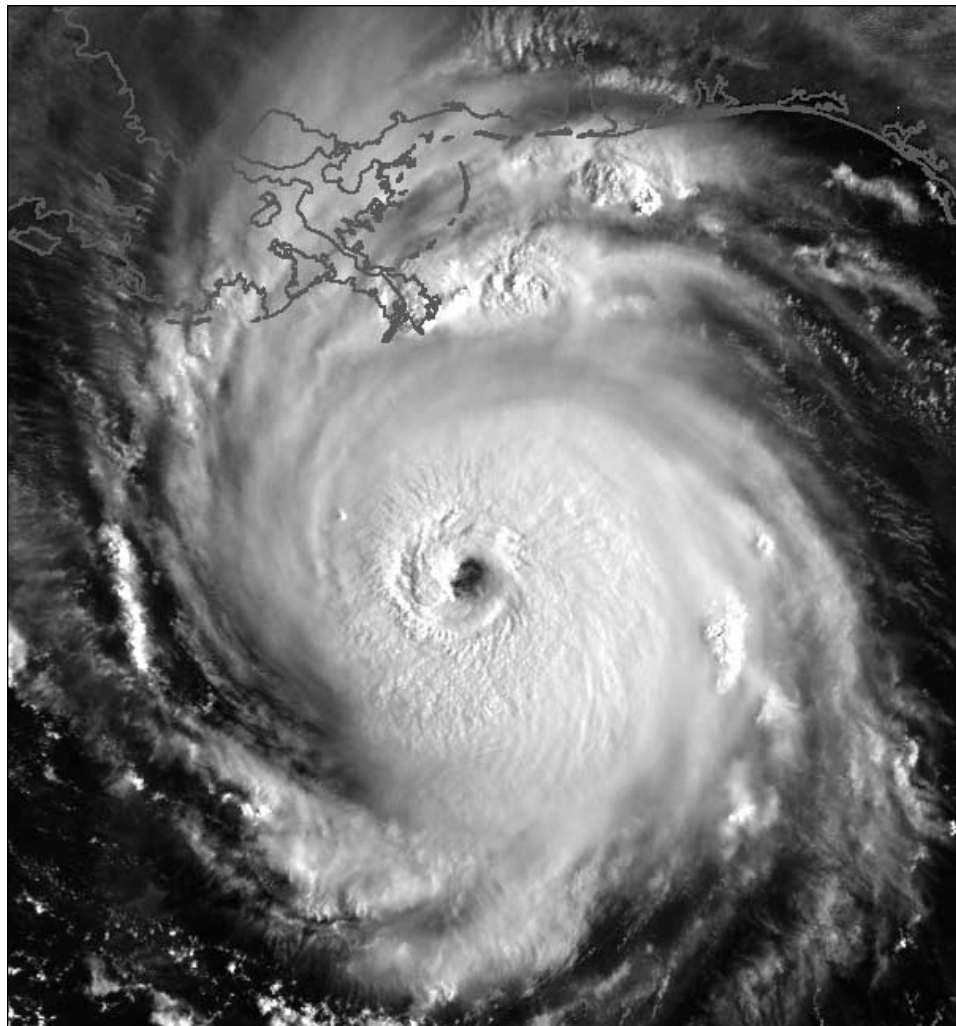
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This publication is included on GSA's annual CD-ROM, *GSA Journals on Compact Disc*, and also is available in an annual, hardbound, archival edition. Call GSA Publication Sales for details.

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Hurricane Andrew courtesy of LSU Earth Scanning Laboratory. Data from NOAA.

TABLE OF CONTENTS

Abstracts with Programs	136
Convenience Information	134
Earth Scientists on Capitol Hill	125
Education Programs K-16	126
Employment Service	125
Exhibits	129
Field Trips	123
Graduate School Information Forum	125
Guest Program	128
Hotels	131
Membership	135
Professional Horizons—GSA Continuing Education Courses, Short Courses, Forums, Workshops	118
Registration	134
Special Events	127
Technical Program	115
Travel	130

1995 ANNUAL MEETING COMMITTEE

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TECHNICAL PROGRAM

Call for Papers and Announcement of Symposia and Theme Sessions

ABSTRACT DEADLINE: JULY 12

Daily technical session schedule: September issue of GSA Today and the World Wide Web: <http://www.aescon.com/geosociety/index.html>. If you are not a GSA member, please call, fax, E-mail, or write us, and we will gladly send you the schedule after September 1.

ABSTRACT SUBMITTAL GUIDELINES

1995 ABSTRACT FORMS AVAILABLE FROM:

- Abstracts Coordinator at GSA headquarters
- Conveners of symposia
- Advocates of theme sessions
- Geoscience departments of most colleges and universities
- Main federal and state survey offices

PRESENTATION FORMATS

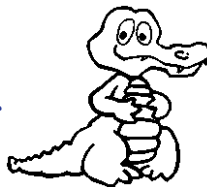
Format	Abstracts Procedure
• Symposia	Invited by the convener
• Theme Sessions	Volunteered for a topic announced <i>before</i> the abstract deadline
• Discipline Sessions	Volunteered for a specific scientific discipline, and organized by topic <i>after</i> the abstract deadline

PRESENTATION MODES

Oral Mode—The normal length of an oral presentation is 15 minutes, including time for discussion. Projection equipment consists of two 35 mm projectors, one overhead projector, and two screens.

Poster Mode—Each poster session speaker is provided with three horizontal, free-standing display boards approximately 8' wide and 4' high. Precise measurements will appear in the Speaker Guide. The speaker must be present for at least two of the four presentation hours.

Invited Papers (Symposia)



Abstracts are to be sent directly to the convener by July 12. The convener who extended the invitation to speakers is responsible for obtaining two independent reviews of each abstract, and for sending the reviews and the abstracts to GSA headquarters prior to the JTPC meeting.

The day and time shown after each symposium are tentative. The final schedule will be available after August 14 and will appear in the September issue of GSA Today.

S1. GSA Keynote Symposium: The Mississippi River—Control and Consequences.

Monday, November 6, 1:00 to 5:00 p.m. 1995 GSA Annual Meeting Committee. Shea Penland, Louisiana State University; S. Jeffress Williams, U.S. Geological Survey, Reston.

Sharon Harrington, City of New Orleans
Welcome to New Orleans

C. G. "Chip" Groat, Louisiana State University
The History of Science, Policy, and Coastal Restoration in Louisiana

H. Jess Walker, Louisiana State University
History of Flood and Diversion Control on the Mississippi River

Lawson Smith, U.S. Army Corps of Engineers, Waterways Experiment Station
Impact of Flood and Diversion Control on Mississippi River Sediment Dynamics

Shea Penland, Louisiana State University
Coastal Land Loss in Louisiana

S. Jeffress Williams, U.S. Geological Survey, Reston
Processes of Coastal Land Loss in Louisiana

Donald Boesch, University of Maryland
Scientific Assessment of Coastal Wetland Loss, Restoration, and Management in Louisiana

Ivor van Heerden, Louisiana Department of Natural Resources
Managing Natural Ecosystems and Coastal Land Loss in Louisiana

Steve Farber, University of Pittsburgh
Environmental Economics, Social Benefits, and Costs of Coastal Restoration in Louisiana

S2. Building Bridges Over Troubled Waters: Identifying, Educating, Recruiting, and Retaining the Stakeholders in Earth Science and Environmental Justice Issues.

Sunday, November 5, all day. *American Geological Institute, Association for Women Geoscientists, National Association for Black Geologists and Geophysicists, and GSA Committee on Minorities and Women in the Geosciences.* Martha N. Garcia, U.S. Geological Survey, Denver; Patricia M. Hall, Amoco Production Company, New Orleans, Louisiana; Leuren Moret, University of California, Davis; Marilyn Suiter, American Geological Institute; A. Wesley Ward, U.S. Geological Survey, Flagstaff.

S3. 25+ Years of Plate Tectonics: Where Do We Go from Here?

Wednesday, November 8, morning. 1995 GSA Annual Meeting Committee. Laura Serpa and Terry Pavlis, University of New Orleans.

S4. Geology and Tectonics of the Caribbean Region.

Tuesday, November 7, morning. *International Division.* Hans Avé Lallemant and Virginia Sisson, Rice University; Grenville Draper, Florida International University.

S5. Products and Processes of Continental Extension.

Monday, November 6, all day. *Structural Geology and Tectonics Division.* John M. Bartley, University of Utah; John W. Geissman, University of New Mexico.

NEW ORLEANS

BRIDGING THE GULF

S6. Third International Symposium on the Cenozoic Tectonics and Volcanism of Mexico.

Tuesday, November 7, afternoon. 1995 GSA Annual Meeting Committee. Jorge Nieto-Obregon, Universidad Nacional Autónoma de México.

S7. Quaternary Geologic Framework and Processes of Coastal Land Loss in Louisiana.

Wednesday, November 8, afternoon. *Quaternary Geology and Geomorphology Division and Engineering Geology Division.* S. Jeffress Williams, U.S. Geological Survey, Reston; Shea Penland, Louisiana State University.

S8. The Mississippi River as a Sedimentary System.

Tuesday, November 7, afternoon. *Sedimentary Geology Division.* Whitney J. Autin, Louisiana State University; Andres Aslan, University of Colorado.

S9. Hydrology of Wetlands.

Wednesday, November 8, morning. *Hydrogeology Division and 1995 GSA Annual Meeting Committee.* Donald Siegel, Syracuse University; Karen Prestegard, University of Maryland.

S10. Bredehoeft Symposium on Hydrogeology and Geologic Processes.

Wednesday, November 8, afternoon. *Hydrogeology Division.* Warren W. Wood and Leonard Konikow, U.S. Geological Survey, Reston; Kenneth Berlitz, Dartmouth College.

S11. Coastal Settings of Peat Formation and Their Stratigraphic Record: Ecosystems, Allogcycles, and Sequences.

Monday, November 6, morning. *Coal Geology Division.* John H. Calder, Nova Scotia Department of Natural Resources.

S12. Environmental Lessons from Planetary Exploration.

Tuesday, November 7, morning. *Planetary Geology Division.* Larry S. Crumpler, Brown University.

S13. Duration of Hydrothermal Events.

Wednesday, November 8, morning. *Society of Economic Geologists.* Holly Stein, U.S. Geological Survey, Reston; Lawrence M. Cathles, Cornell University.

S14. Frontiers in Geochemistry.

Monday, November 6, afternoon. *Geochemical Society.* Tony Lasaga, Yale University; Ted Labotka, University of Tennessee, Knoxville.

S15. Weathering Rates of Silicate Minerals.

Monday, November 6, morning. *Mineralogical Society of America.* Art F. White, U.S. Geological Survey, Menlo Park; Susan F. Brantley, Pennsylvania State University.

S16. The Dana Legacy, a Century Later.

Tuesday, November 7, all day. *History of Geology Division.* Robert N. Ginsburg, University of Miami, RSMAS; Ellis Yochelson, Smithsonian Institution.

S17. Recovery from Mass Extinctions.

Tuesday, November 7, morning. *Paleontological Society.* Steve D'Hondt, University of Rhode Island, School of Oceanography.

S18. Variability of Isotope Compositions in Modern and Fossil Organic Matter.

Sunday, November 5, all day. *Geochemical Society, Organic Geochemistry Division.* Stephen A. Macko, University of Virginia; Michael H. Engel, University of Oklahoma; Kate Freeman, Pennsylvania State University.

S19. Taphonomy of Microfossils: Paleoenvironmental Reconstruction and Environmental Assessment.

Monday, November 6, morning. *Cushman Foundation.* Ronald Martin, University of Delaware; Susan Goldstein, University of Georgia.

NEW ORLEANS

BRIDGING THE GULF

S20. Gulf and Atlantic Coast Vertebrate Paleontology, Including Multidisciplinary Approaches to Vertebrate Localities.

Thursday, November 9, afternoon. *Society of Vertebrate Paleontology*. Judith A. Schiebout, Louisiana State University.

S21. High-Resolution Geophysics in Cultural Resource Management.

Wednesday, November 8, morning. *Archaeological Geology Division*. Edwin Hajic, Illinois State Museum.

S22. Annual Environmental Forum: Politics and Economics: Geological Research Bridging the Gulf.

Sunday, November 5, 1:30 to 5:30 p.m. *Institute for Environmental Education and Hydrogeology Division*. Douglas Gouzie, Agency for Toxic Substance and Disease Registry, Atlanta, Georgia.

Gordon Streeb, Director, Sustainable Development Program, Carter Presidential Center
Globalizing Market Economics: Chaos or Opportunity

John Hess, University of Nevada, Desert Research Institute
The Changing U.S. Political Climate

John D. Bredehoeft, U.S. Geological Survey, Menlo Park
The Impact of Mathematical Modeling on Geology

Gordon Eaton, Director, U.S. Geological Survey
Changes in Federal Government Agencies, Implications for Academics and Industry

John Cherry, University of Waterloo, Ontario, Canada
From Site Investigation to Site Remediation: Implications for Hydrogeology

Keros Cartwright, Illinois Geological Survey
Change: A View from the States

Charles Kreitler, LBG Guyton Associates, Austin, Texas
The Consulting Business: Trends in Industry

Frank Schwartz, Ohio State University
Universities: Confronting the Challenge of Change

S23. Crossing the Bridge to the Future: Managing Geoscience Information in the Next Decade: Archiving, Access, and Outreach.

Tuesday, November 7, morning. *Geoscience Information Society*. Nancy Blair, U.S. Geological Survey, Menlo Park.

S24. Scholarship in the Geosciences—Beyond Academia.

Monday, November 6, afternoon. *Geoscience Education Division*. Barbara M. Manner, Duquesne University, Pittsburgh, Pennsylvania.

S25. Assessing Teaching and Learning.

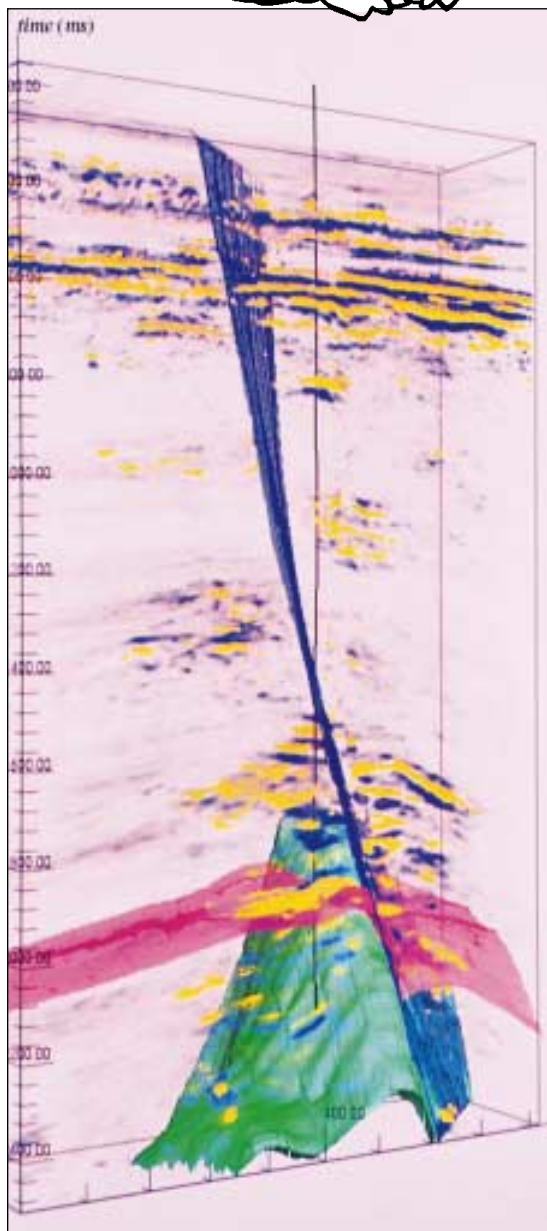
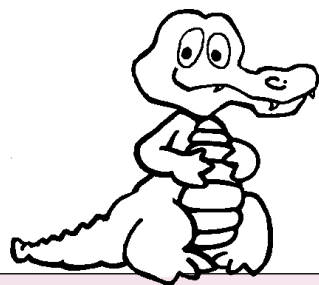
Tuesday, November 7, afternoon. *National Association of Geology Teachers*. R. Heather Macdonald, College of William and Mary.

S26. SGE Student Research.

Wednesday, November 8, afternoon. *Sigma Gamma Epsilon*. Charles J. Mankin, Oklahoma Geological Survey. POSTER

S27. Dynamics of Aqueous and Hydrocarbon Fluids in Sedimentary Basins.

Sunday, November 5, all day. Janet K. Pitman and Michael Lewan, U.S. Geological Survey, Denver.



Courtesy of Vital Images, Inc. and Mobil Oil Corporation. Offshore 3D seismic data with interpreted top of salt (green), a major fault (blue), and the top of a sand (red). The opacity adjusted so that the low amplitudes are transparent and the high amplitudes caused by bright spots (yellow) associated with gas accumulations are opaque.

Volunteered Papers

This format includes all abstracts that are not specifically invited for a symposium. Each paper will have a minimum of three reviews. Two types of sessions are available:

1. DISCIPLINE SESSIONS

Papers are submitted to ONE scientific discipline. The Joint Technical Program Committee (JTPC) representatives organize the papers in sessions focused on this discipline, for example, hydrogeology.

2. THEME SESSIONS

Papers are submitted to a specific *pre-announced* title and to ONE scientific category. Theme sessions are interdisciplinary; each theme may have as many as three categories from which authors may choose ONE. After each theme description below, the categories are identified by name and number as they appear on the 1995 Abstract Form.

LIMIT OF ONE VOLUNTEERED ABSTRACT

Please submit only one volunteered abstract as speaker or poster presenter of a discipline and/or theme session. Multiple submissions as speaker-presenter for volunteered abstracts will result in rejection of ALL abstracts. Note that this limitation does not apply to, nor does it include, invited contributions to symposia.

THEME SUBMITTALS INCLUDE:

Item	Example
• Theme number	T18
• Key words of the theme title	Methods for Quantifying Unsaturated Permeability
• One category	Environmental Geology—#6 on abstract form
• Mode for the session	Poster

Role of theme advocate

Each theme session has been proposed by an advocate. *Advocates may not invite speakers; however, advocates may encourage colleagues to submit abstracts, with the understanding that there is no guarantee of acceptance.*

All abstracts will be evaluated by three JTPC reviewers in the discipline for which they are submitted. During the August 11–12 JTPC meeting, the designated JTPC representative (in consultation with the theme advocate) will organize theme sessions from the abstracts approved for presentation.

Theme Topics

Please check the correct mode of the theme session—poster or oral. If the abstract is submitted inaccurately, the abstract will be transferred automatically to a discipline session.

T1. **Plate Tectonics, the Next Generation.**
1995 GSA Annual Meeting Committee. Terry Pavlis and Laura Serpa, University of New Orleans. Geophysics/Tectonophysics (10), Petrology, Igneous (21), Tectonics (31). ORAL

T2. **Geology and Tectonics of the Caribbean Region.**
International Division. Hans Avé Lallemand and Virginia Sisson, Rice University; Grenville Draper, Florida International University.

Marine Geology (14), Petrology, Igneous (21), Tectonics (31). POSTER

T3. Tectonic Geomorphology and Paleoseismology in Intraplate Tectonic Settings.

Dorothy Merritts, Franklin and Marshall College; Eugene Schweig, University of Memphis. Geophysics/Tectonophysics (10), Quaternary Geology/Geomorphology (25), Tectonics (31). ORAL

T4. Proterozoic Terranes of the Americas: Bridging the Gulf and Caribbean.

Geochemical Society. Paul A. Mueller and Ann Heatherington, University of Florida; Paul Fullagar, University of North Carolina; Joaquin Ruiz, University of Arizona. Geochemistry, Other (8), Petrology, Igneous (21), Tectonics (31). ORAL

- T5. Before the Gulf—Paleozoic Tectonics of the Southern Margin of Laurentia.**
George W. Viele, University of Missouri. Sediments, Clastic (28), Structural Geology (30), Tectonics (31). ORAL
- T6. Advances in the Geology of Mexico.**
José F. Longoria, Florida International University; Dante Moran-Zenteno and Jaime Urritia, Universidad Nacional Autónoma de México; Rogelio Monreal, Centro de Estudios Superiores del Estado Sonora. Paleontology/Paleobotany (18), Stratigraphy (29), Tectonics (31). ORAL
- T7. Paleooceanographic and Paleoclimatic Results from ODP Legs 151 and 152 to the North Atlantic.**
Mary Anne Holmes, University of Nebraska; Lisa Osterman, Smithsonian Institution. Marine Geology (14), Paleooceanography/Paleoclimatology (17). ORAL
- T8. Subaqueous Sediment Gravity Flow Deposition: Scaling, Processes, and Applications.**
John P. Grotzinger, Massachusetts Institute of Technology. Engineering Geology (5), Marine Geology (14), Sediments, Clastic (28). ORAL
- T9. Recognizing the Impact of Subtle Structures on the Stratigraphic Record.**
John Holbrook, Southeast Missouri State University. Sediments, Carbonates (27), Sediments, Clastic (28), Structural Geology (30). ORAL
- T10. Recent Progress in Shale Research.**
Juergen Schieber, University of Texas, Arlington. Geochemistry, Other (8), Paleooceanography/Paleoclimatology (17), Sediments, Clastic (28). ORAL
- T11. Tectonic and Paleoclimatic Records from Rift Basin Sediments of East Africa and Siberia.**
Douglas F. Williams, University of South Carolina; Thomas Johnson, University of Minnesota. Paleooceanography/Paleoclimatology (17), Stratigraphy (29), Tectonics (31). ORAL
- T12. Back to the Moon.**
Planetary Geology Division. Odette B. James, U.S. Geological Survey, Reston; Cassandra Coombs, College of Charleston. Geochemistry, Other (8), Geophysics/Tectonophysics (10), Planetary Geology (23). ORAL
- T13. Coastal Wetland Dynamics in Response to Sea-level Rise: Erosion, Accretion, and Ultimately Transgression.**
Robert S. Young, Duke University. Marine Geology (14), Quaternary Geology/Geomorphology (25), Sediments, Clastic (28). ORAL
- T14. Quaternary Geologic Framework and Processes of Coastal Land Loss.**
S. Jeffress Williams, U.S. Geological Survey, Reston; Shea Penland, Louisiana State University. Environmental Geology (6), Quaternary Geology/Geomorphology (25), Sediments, Clastic (28). ORAL
- T15. Processes Defining the Dynamics, Evolution, and Stratigraphy of Coastal Swamp and Marsh Environments.**
Harold R. Wanless, University of Miami. Environmental Geology (6), Quaternary Geology/Geomorphology (25), Stratigraphy (29). POSTER
- T16. Effects of Geologic Framework on Shoreface Evolution.**
E. Robert Thieler, Duke University. Marine Geology (14), Sediments, Clastic (28), Stratigraphy (29). ORAL
- T17. Geologic Hazards in Mexico.**
Jorge Nieto-Obregon, Facultad de Ingeniería, Universidad Nacional Autónoma de México. Environmental Geology (6), Structural Geology (30), Volcanology (32). ORAL
- T18. Environmental Geology: The Voice of Warning.**
 *Institute for Environmental Education and GSA Committee on Geology and Public Policy.* Monica E. Gowan, GeoLogic, Bellingham, Washington; Bret W. Leslie, Independent Consultant, Springfield, Virginia. Engineering Geology (5), Environmental Geology (6), Geology Education (9). ORAL
- T19. Environmental Geology: The Voice of Reason.**
 *Institute for Environmental Education and GSA Committee on Geology and Public Policy.* Monica E. Gowan, GeoLogic, Bellingham, Washington; Jeffrey R. Keaton, AGRA Earth & Environmental, Inc., Salt Lake City, Utah. Engineering Geology (5), Environmental Geology (6), Geology Education (9). ORAL
- T20. Wetlands: Past, Present, and Future.**
Richard Winston, Louisiana State University. Coal Geology (2), Environmental Geology (6), Hydrogeology (13). ORAL
- T21. Incorporating Research Results into Ground-Water Contamination Investigations and Remediation.**
Hydrogeology Division. John H. Guswa, Geo-Trans, Inc., Harvard, Massachusetts. Engineering Geology (5), Environmental Geology (6), Hydrogeology (13). ORAL
- T22. The Watershed Approach to Water Resource Management.**
Hydrogeology Division. Patrick A. Burkhart, Heidelberg College, Tiffin, Ohio. Geochemistry, Aqueous/Organic (7), Geoscience Information (11), Hydrogeology (13). ORAL
- T23. Geochemistry, Hydrology, and Environmental Impacts of Brines and Saline Waters.**
Glenn F. Huff, New Mexico State University; Jeffrey S. Hanor, Louisiana State University. Environmental Geology (6), Geochemistry, Aqueous/Organic (7), Hydrogeology (13). ORAL
- Please check the correct mode of the theme session—poster or oral. If the abstract is submitted inaccurately, the abstract will be transferred automatically to a discipline session.*
- T24. Innovative Characterization of DNAPL Impacted Aquifers.**
Mark R. Noll, Applied Research Associates, Tyndall Air Force Base, Florida. Environmental Geology (6), Geophysics/Tectonophysics (10), Hydrogeology (13). ORAL
- T25. The Role of Geosciences in Ecosystem Analysis.**
 *Institute for Environmental Education.* Donald M. Davidson, Jr., Geological Society of America; Jean D. Juilland, U.S. Department of the Interior, Sacramento, California. Environmental Geology (6), Geochemistry, Aqueous/Organic (7), Hydrogeology (13). ORAL
- T26. Environmental Justice.**
Syed Hasan, University of Missouri. Engineering Geology (5), Environmental Geology (6), Geology Education (9). ORAL
- T27. Hydrochemical Interaction Between Shallow Ground Water and Surface Water in Karst Terrane.**
Hydrogeology Division. Brian G. Katz, U.S. Geological Survey, Tallahassee; Noel Krothe, Indiana University. Engineering Geology (5), Environmental Geology (6), Hydrogeology (13). ORAL
- T28. This has been changed to S27.**
- T29. Multidisciplinary Approaches to Hydrogeologic Research on Carbonate Islands.**
Hydrogeology Division. Carol Wicks, University of Missouri; Joseph W. Troester, U.S. Geological Survey, Puerto Rico. Hydrogeology (13), Quaternary Geology/Geomorphology (25), Sediments, Carbonates (27). ORAL
-
- Courtesy of RockWare. Digital translation of USGS digital elevation data provided by Chalk Butte, Inc.*
- T30. Hybrid Carbonate-Siliciclastic Sedimentary Environments.**
Paul R. Krutak, Fort Hays State University, Hays, Kansas. Petroleum Geology (19), Sediments, Carbonates (27), Stratigraphy (29). ORAL
- T31. Research Results from the 1994–1995 Louisiana Applied Oil Spill Research and Development Program Projects.**
Donald W. Davis, Louisiana State University. Engineering Geology (5), Environmental Geology (6), Remote Sensing (26). ORAL
- T32. Halogen Hydrology.**
Stanley N. Davis, University of Arizona. Environmental Geology (6), Geochemistry, Aqueous/Organic (7), Hydrogeology (13). ORAL
- T33. Weathering Silicate Minerals.**
Mineralogical Society of America. Art White, U.S. Geological Survey, Menlo Park; Susan L. Brantley, Pennsylvania State University. Geochemistry, Aqueous/Organic (7), Geochemistry, Other (8), Mineralogy/Crystallography (16). ORAL
- T34. Biological Microinclusions of Aqueous Minerals.**
Jack D. Farmer, NASA–Ames Research Center, Moffett Field, California. Geochemistry, Aqueous/Organic (7), Micropaleontology (15), Paleontology/Paleobotany (18). ORAL
- T35. Experimental Taphonomy: Deep Sea to Terrestrial Realms.**
Paleontological Society. Anne Raymond, Texas A&M University; Sally Walker, University of Georgia. Paleontology/Paleobotany (18), Sediments, Carbonates (27), Sediments, Clastic (28). ORAL
- T36. Impact in the Gulf: Chicxulub.**
Planetary Geology Division. Maureen Steiner, University of Wyoming; Mary Sue Bell, Lunar and Planetary Science Institute, Houston, Texas. Geochemistry, Other (8), Paleontology/Paleobotany (18), Planetary Geology (23). ORAL

T37. Global Catastrophes: P-E and K-T Events Compared.

Gerta Keller, Princeton University. Micropaleontology (15), Paleoclimatology/Paleoceanography/Paleoclimatology (17), Sediments, Clastic (28). ORAL

T38. Applications of Coal Geology to Mining and Environmental Problems.

Coal Geology Division. James C. Hower, University of Kentucky; John C. Crelling, Southern Illinois University. Coal Geology (2), Engineering Geology (5), Environmental Geology (6). ORAL

Please check the correct mode of the theme session—poster or oral. If the abstract is submitted inaccurately, the abstract will be transferred automatically to a discipline session.

T39. Andes to the Amazon: Geology and Mineral Wealth of a Continent.

Richard M. Tosdal, U.S. Geological Survey, Menlo Park; Andrew MacFarlane, Florida International University. Economic Geology (4), Geochemistry, Other (8), Tectonics (31). ORAL

T40. Mineral Deposits and Geology of the Caribbean Rim.

Society of Economic Geologists. Phil Pyle, BHP Minerals, Houston, Texas; Robert B. Cook,

Auburn University. Economic Geology (4), Tectonics (31), Volcanology (32). ORAL

T41. Appalachian Mineral Deposits.

Society of Economic Geologists. Kula Misra, University of Tennessee; Robert B. Cook, Auburn University. Economic Geology (4), Geochemistry, Other (8), Structural Geology (30). ORAL

T42. Airborne and Spaceborne Radar Studies of the Geologic Environment.

Robert J. Stern, University of Texas, Dallas; Ray Arvidson, Washington University, St. Louis. Environmental Geology (6), Geophysics/Tectonophysics (10), Remote Sensing (26). ORAL

T43. Advances in Pegmatite Genesis.

William B. Simmons, University of New Orleans. Geochemistry, Other (8), Mineralogy/Crystallography (16), Petrology, Igneous (21). ORAL and POSTER

T44. Simulation, Animation, and Data Visualization in Hydrology.

Hydrogeology Division. Russell S. Harmon, U.S. Army Research Office, Research Triangle Park, North Carolina; Jeffrey Holland, U.S. Army Corps of Engineers, Waterways Experiment Station, Vicksburg, Mississippi; Edward Sudicky, University of Waterloo. Computers (3), Engineering Geology (5), Hydrogeology (13). ORAL

T45. Environmental Issues Across the Geoscience Curriculum.

National Association of Geology Teachers and Institute for Environmental Education. Steven C. Semken, Navajo Community College, Shiprock, New Mexico; R. Heather Macdonald, College of William and Mary; David W. Mogk, Montana State University. Environmental Geology (6), Geology Education (9), Geoscience Information (11). ORAL and POSTER

T46. Making Connections: Ties Between K-12 and University Education.

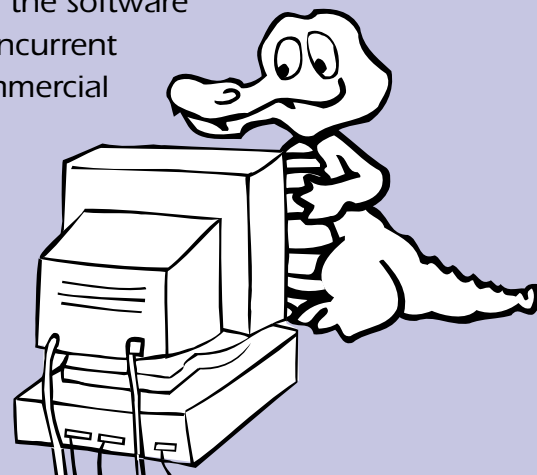
National Association of Geology Teachers, National Earth Science Teachers Association, Geoscience Education Division, and GSA's SAGE Program. Leslie Gordon, U.S. Geological Survey, Menlo Park; Cynthia Domack, Hamilton College; Frank Ireton, American Geophysical Union; Barbara Mieras, Geological Society of America. Geology Education (9). ORAL

T47. Undergraduate End-of-Program Assessment in Geoscience Departments.

Dean A. McManus and Mark L. Holmes, University of Washington. Geology Education (9). ORAL

GSA Software Fair

A Software Fair is being organized for the New Orleans meeting to promote the use of computers in all fields of geology. The Software Fair will provide authors a new forum to display their own software and give participants an opportunity to learn about numerous software applications that are available. Computers will be placed near the registration and poster session areas. If there is sufficient interest, the software demonstrations will be organized each day so that they are broadly related to concurrent poster topics. Interested authors of freeware, public domain, shareware, and commercial packages (noncorporate) are invited to contact: Skip Simmons, University of New Orleans, Dept. of Geology and Geophysics, 2000 Lakeshore Drive, New Orleans, LA 70148; (504) 286-6791; fax 504-286-7396; E-mail: wbses@geology.uno.edu for information and application form. Information and an on-line application form are available at GSA's World Wide Web site. The URL is <http://www.aescon.com/geosociety/meetings/95/softfair.html>. The deadline for receipt of completed applications is **September 1**. Applicants will receive details about the final organization of the Software Fair by September 15.



PROFESSIONAL HORIZONS

GSA-Sponsored Continuing Education Courses

Would you like to learn something new, brush up on the latest, or refresh your knowledge of the basics? GSA's continuing education courses will be held immediately before the Annual Meeting in New Orleans and are open to members and nonmembers.

A course only fee of \$35 is required if you are not attending the meeting. This fee may be applied to a full meeting registration if you decide to attend. Pre-registration is recommended; on-site is \$30 additional. You may register for GSA courses on the Annual Meeting Preregistration Form. **All GSA-sponsored Continuing Education Courses will be held at the Ernest N. Morial Convention Center.**

—NEW—

CONTINUING EDUCATION UNITS (CEUs)

All continuing education courses sponsored by GSA offer CEUs. To obtain CEUs, you must fill out a CEU form at the course and give it to the GSA representative on-site. A CEU is defined as ten contact hours of participation in an organized continuing education experience under responsible sponsorship,

capable direction, and qualified instruction. A contact hour is defined as a typical 60-minute classroom session or its equivalent.

PREREGISTRATION DEADLINE: SEPTEMBER 29

Cancellation Deadline: October 6

For Information Contact
Edna Collis, (303) 447-2020, ext. 134
GSA Continuing Education Coordinator

1 Contaminant Organic Geochemistry.
Saturday, November 4, 8:00 a.m. to 5:00 p.m.
Cosponsored by *Hydrogeology Division*.

ATTENTION STUDENTS: The Hydrogeology Division will SUBSIDIZE THE FIRST STUDENT WHO IS A VALID DIVISION MEMBER. The student MUST PAY THE FULL COURSE FEE when registering, but will be reimbursed \$50 after the GSA meeting by the Hydrogeology Division.

This course will provide an introduction to the nature and fate of organic contaminants in the subsurface and an understanding of the complex processes that determine the preservation and degrada-

tion of specific contaminants in hydrologic environments. Included in the course will be discussion on the physical properties of organic contaminants, including their bonding, solubility, and volatility; how organics are sorbed onto organic matter, how they are degraded abiotically and biotically, and rates of loss of specific compounds.

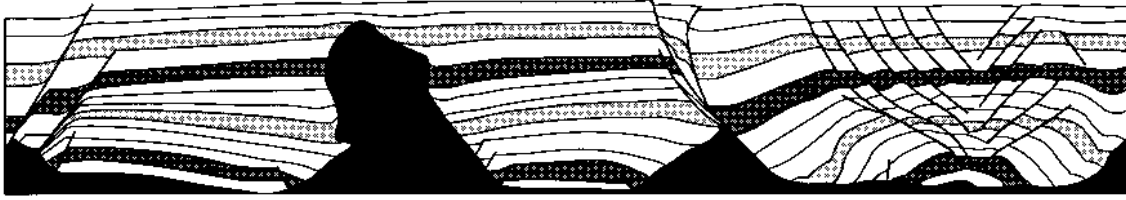
Who Should Attend—Upper division undergraduates, graduate students, and professional geologists who would have the requisite scientific background to gain from this course.

Recommended Background—Attendees are expected to have some college-level chemistry.

What You Will Learn—Attendees will receive an introduction to contaminant organic geochemistry and an understanding of the relative importance of factors that affect the fate and transport of organics in the subsurface. Participants will receive reference materials that will assist them in their own research or site evaluations.

Faculty: **Philip Bennett**, Dept. of Geological Sciences, University of Texas at Austin; Ph.D., Syracuse University. **Mary Jo Baedecker**, U.S. Geological Survey, Reston; Ph.D., George Washington University.

Limit: 100. CEUs: 0.8. Fee: \$175, students \$75; includes course manual and lunch.



Model section, course #3. Courtesy of course faculty.

2 Fundamentals of Project Management for Environmental Professionals.

Saturday, November 4 and Sunday, November 5, 8:00 a.m. to 5:00 p.m.

Successful project management is vital to the success of environmental projects. Finding and retaining good project managers has become one of the most important objectives of many environmental firms and agencies. This course provides an overview of projects and project management and the phases or life cycle of a project, with specific examples and case studies taken from environmental projects. Interactive exercises give the participants a hands-on opportunity to develop a project plan in response to a request for a proposal. The purpose of this training is to assist in the development of project management skills that individuals did not have an opportunity to develop as part of their technical training.

Who Should Attend—Anyone engaged in project-oriented activities in his/her profession, individuals who are currently employed as project managers in the environmental field, and anyone interested in making the transition to the environmental field.

Recommended Background—Attendees should have a basic knowledge of general environmental science and project experience. This course is valuable for experienced and aspiring project managers, project team members, and their managers.

What You Will Learn—This workshop will provide attendees with a sound understanding of the responsibilities of an environmental project manager and the elements common to every project on which a project manager must focus.

Faculty: **Marguerite H. Scully**, Consultant, New Orleans; B.A., Boston College.

Limit: 45. CEUs: 1.6. Fee: \$220, students \$200; includes course manual and lunches.

3 Introduction to Experimental Modeling of Tectonic Processes.

Saturday, November 4, 8:00 a.m. to 5:00 p.m. and Sunday, November 5, 8:00 a.m. to 12:00 noon. Cosponsored by *Structural Geology and Tectonics Division*.

Interest in experimental modeling of tectonic processes has grown significantly during the past decade. Published models simulate tectonic processes ranging from salt diapirism to thin-skinned folding and thrusting. Although these modeling studies provide valuable information, they have limitations and, in fact, some are scientifically flawed. This one and one-half day course will help participants to critically evaluate the results of experimental studies, apply the results to their own work, and design their own experiments. Introductory lectures will describe the mechanics of geologic systems, assumptions of experimental modeling, and basics of scaling. Hands-on exercises and experiments, coupled with short lectures and discussions, will demonstrate the pros and cons of a variety of modeling materials (sand, putty, clay), techniques (e.g., centrifuge), and experimental designs (e.g., boundary conditions).

Who Should Attend—Geologists in both academia and industry, graduate students in tectonics, tectonophysics, and structural geology, whether their research involves field work, seismic reflection data, or numerical, analytical, or geometric modeling.

Recommended Background—This course is recommended for any geologist or student with interests in structural geology.

What You Will Learn—Participants will learn how to critically evaluate the significance (or lack thereof) of published modeling results. Participants will also learn how to apply these results to real, specific geologic examples and will acquire the basic tools to understand the impact of various modeling parameters on the modeling results.

Faculty: **Bruno C. Vendeville**, Bureau of Economic Geology, University of Texas at Austin; Ph.D., Université de Rennes, France. **Martha O. Withjack**, Mobil Exploration and Producing Technical Center, Dallas; Ph.D., Brown University. **Gloria Eisenstadt**,

Mobil Exploration and Producing Technical Center, Dallas; Ph.D., Johns Hopkins University.

Limit: 30. CEUs: 1.2. Fee: \$185, students \$165; includes course manual and Saturday lunch.

4 Introduction to Soil and Ground-Water Remediation Techniques.

Saturday, November 4 and Sunday, November 5, 8:00 a.m. to 5:00 p.m.

Cosponsored by *Engineering Geology Division*.

ATTENTION STUDENTS: The Engineering Geology Division will **SUBSIDIZE THE FIRST FIVE STUDENTS WHO ARE VALID DIVISION MEMBERS**. Students **MUST PAY THE FULL COURSE FEE** when registering, but will be reimbursed \$50 after the GSA meeting by the Engineering Geology Division.

The costs associated with remediating contaminated sites can be staggering. However, technical approaches to a contamination problem can be implemented. This course will emphasize a practical approach, covering technical requirements and procedures, consultant responsibilities, the client-consultant relationship, the consultant-regulatory agency relationship, legal considerations, design criteria, and technology options designed to reduce remediation expenditures and meet regulatory goals.

Who Should Attend—This course is intended for geologists, hydrogeologists, engineering geologists, engineers, and environmental scientists who are newcomers to the field of soil and ground-water remediation. Scientists who are interested in entering the environmental field or those who wish to broaden their environmental knowledge will benefit from this course.

Recommended Background—Attendees should have a degree in geology, hydrogeology, engineering, or environmental science. The course presents basic concepts, ideas, and procedures related to site remediation. It is *not* intended for those professionals who are experienced in the environmental field and remediation design and implementation.

What You Will Learn—Attendees will learn the basic fundamentals of contaminant hydrogeology; fate and transport of contaminants in soil and ground water; soil and ground-water clean-up technologies; how to screen, select, and implement the proper clean-up technology; preparation of remediation action plans; remediation system designs and specifications; and regulatory interaction prior to and during site remediation. Case studies will be presented.

Faculty: **Jeffrey L. Peterson**, Principal Hydrogeologist, Enviros, Inc., Sonoma, California; M.S., California State University. **Diane M. Lundquist**, Senior Engineer, Enviros, Inc., Sonoma, California; B.S., Valparaiso University.

Limit: 40. CEUs: 1.6. Fee: \$300, students \$280; includes course manual and lunches.

5 Multidimensional Computer Visualization.

Saturday, November 4 and Sunday, November 5, 8:00 a.m. to 5:00 p.m.

Cosponsored by *Hydrogeology Division*.

ATTENTION STUDENTS: The Hydrogeology Division will **SUBSIDIZE THE FIRST STUDENT WHO IS A VALID DIVISION MEMBER**. The student **MUST PAY THE FULL COURSE FEE** when registering, but will be reimbursed \$50 after the GSA meeting by the Hydrogeology Division.

This course will survey the current use of computer visualization in the geosciences, focusing on three-dimensional data sets on Unix workstations using low-cost software. DOS/Windows and Macintosh software will also be well represented. A variety of software will be demonstrated, displaying data from a variety of fields, including seismology, contaminant hydrology, geomorphology, and air-quality modeling. Visualization of field, laboratory, and modeled data will be addressed. The course will cover the entire visualization process: selection of appropriate

applications and computers for visualization, planning data collection, organizing data, creating 3-D images, highlighting significant features and generating output in a useful form. This will be a lecture course.

Who Should Attend—The intended audience includes professionals and graduate students who want to use three-dimensional visualization to address geoscientific issues.

Recommended Background—Anyone interested in producing, using, analyzing, and/or critiquing scientific visualizations.

What You Will Learn—Attendees will learn the range of applicability of earth science visualization, specific strategies for applying computer visualization to their own work, appreciation of the kind and extent of data and the level of effort required to create a successful visualization, and principal sources of commercial and noncommercial visualization software.

Faculty: **Paul J. Morin**, Visualization Programmer, Gibson Computational Hydrogeology Laboratory, Dept. of Geology and Geophysics, University of Minnesota. **Mark McBride**, Senior Hydrogeologist, Dames & Moore, Bethesda; M.S., University of Minnesota. **Mark Person**, Dept. of Geology and Geophysics, University of Minnesota; Ph.D., Johns Hopkins University.

Limit: 100. CEUs: 1.6. Fee: \$325, students \$110; includes course manual and lunches.

6 Phase I Environmental Site Assessments.

Saturday, November 4 and Sunday, November 5, 8:00 a.m. to 5:00 p.m.

Cosponsored by *Engineering Geology Division*.

ATTENTION STUDENTS: The Engineering Geology Division will **SUBSIDIZE THE FIRST FIVE STUDENTS WHO ARE VALID DIVISION MEMBERS**. Students **MUST PAY THE FULL COURSE FEE** when registering, but will be reimbursed \$50 after the GSA meeting by the Engineering Geology Division.

This course will overview all aspects of performing a Phase I Environmental Site Assessment, including the purposes and objectives of the investigation, a discussion of all appropriate environmental regulations, appropriate sources of information, how to conduct the assessment, and environmental liability. We will review the regulatory basis for the assessments and cover the resources available to assist in the performance of the assessments. *Optional Exam*—This course is endorsed by the National Registry of Environmental Professionals (NREP) and will offer the NREP exam. A passing grade on this exam together with a college degree and professional experience will qualify you for the title of Registered Environmental Property Assessor (REPA). Credentials such as these are needed to perform Phase I Assessments in some states. Attendees not having the educational or professional requirements needed for the REPA designation may be certified as an Associate Environmental Property Assessor until the additional requirements are fulfilled.

Who Should Attend—Geoscientists (students to professionals) who are involved or interested in Phase I Environmental Assessments. This is a quickly growing area for professional geologists and, as such, should prove to be an important topic for students and teachers as well. This course will serve as a review prior to the certification exam for more experienced professionals, while at the same time providing detailed information for those less experienced.

Recommended Background—Attendees should have a basic knowledge of environmental regulations. Some experience in performing environmental or geologic assessments would also be helpful, but it is not required.

What You Will Learn—Attendees will learn how to perform a Phase I Environmental Assessment based on NREP and ASTM standards. They will also learn where to obtain the data needed to perform an assessment and how to interpret those data.

Faculty: **Raymond C. Kimbrough**, Environmental Geologist, Tom Joiner & Associates, Inc., Tuscaloosa; B.A., University of Alabama. **David R. Gillespie**, Staff Geologist, Desert Research Institute, Water Resources Center, Las Vegas; M.S., University of Arkansas.

Limit: 40. CEUs: 1.6. Fee: \$300, students \$280; includes course manual and lunches.

Optional Exam Fee: \$90, paid on-site. Optional NREP Study Guide will be available on-site for \$45.

7 Coastal Land Loss.

Sunday, November 5, 8:00 a.m. to 5:00 p.m.

This course will address the factors affecting land loss, how land loss is detected and predicted, and the various technical and nontechnical responses to the problem. Responses such as engineering structures, beach nourishment, and retreat are evaluated in a historical context. Current public-policy issues that require scientific participation will be described, and many examples from different regions of the world will be presented to illustrate coastal land loss in urban, industrial, and recreational settings.

Who Should Attend—Nonexperts in the field of coastal and environmental geology, including college faculty teaching undergraduate courses in environmental geology, undergraduate and graduate students, consulting geologists and engineers, land-use planners, and government officials.

Recommended Background—Participants should have an introductory course in physical sciences. Undergraduate courses in geology would be helpful, but are not required.

What You Will Learn—Attendees will learn the primary causes of coastal land loss in different regions of the United States, standard field surveying and laboratory techniques for measuring land loss, how global positioning systems (GPS) and geographic information systems (GIS) are used to acquire, manipulate, display, and store land-loss data, why government agencies and individuals employ different strategies of shoreline management, the field criteria for recognizing beach retreat, how to qualitatively assess beach stability and other coastal hazards at a site, and how to evaluate technical reports dealing with coastal land-loss issues.

Faculty: **Orrin H. Pilkey, Jr.**, Dept. of Geology, Duke University; Ph.D., Florida State University. **Robert A. Morton**, Bureau of Economic Geology, University of Texas at Austin; Ph.D., West Virginia University. **Joseph T. Kelley**, Maine Geological Survey, University of Maine; Ph.D., Lehigh University.

Limit: 30. CEUs: 0.8. Fee: \$215, students \$195; includes course manual and lunch.

8 Essentials of Subsurface Mapping.

Sunday, November 5, 8:00 a.m. to 5:00 p.m.

Cosponsored by *Structural Geology and Tectonics Division*.

This course will introduce participants to the principles and techniques of geologic mapping using data derived from wells. Included are recognition of faults and unconformities, fault cut vs. fault throw, repetition or loss of section with both normal and reverse faults, handling of deviated wells, conversion of measured thickness to true stratigraphic and true vertical thickness in deviated wells and dipping beds, and discussion of various types of faulting and the mapping thereof. The course also includes many of the fundamentals of mapping itself: contouring, the integration of fault plane structure maps with formation structure maps, and the construction of isopach maps, especially those specialized types of isopachs used in estimating reserves: net reservoir and net pay isopachs.

Who Should Attend—Practicing geologists, geophysicists, managers, reservoir engineers, geologic data processors, and technical assistants—anyone whose work involves the interpreting of subsurface geologic data.

Recommended Background—Attendees must have taken basic structural geology.

What You Will Learn—Attendees will learn fault and unconformity recognition in wells, fault patterns and associated structures, integration of fault plane structure maps with formation structure maps, plotting and handling of deviated wells, and construction of isopach maps, including the rather specialized net reservoir and net pay isopachs used in development geology and reserve estimations; a brief introduction to reservoir volume determinations is included.

Faculty: **Duncan Goldthwaite**, Geologist, Atwater Consultants, Ltd., New Orleans; M.A., Harvard University. **Robert B. Branson**, Geologist, Atwater Consultants, Ltd., New Orleans; M.A., University of Oklahoma.

Limit: 40. CEUs: 0.8. Fee: \$215, students \$195; includes course manual and lunch.

9 GIS and the Geosciences.

Sunday, November 5, 8:00 a.m. to 5:00 p.m.

Geographic Information Systems (GIS) are crucial for today's geoscience research and projects. The volume of data readily available, new methods in effective field data input, analytical techniques, and the low cost of software and hardware make GIS a cost effective—if not compelling—geoscience tool. Legislation is requiring digital data in government projects, and the volumes of data one must analyze in today's competitive industries require a thorough understanding of GIS technology. One thing is certain: no one GIS does it all. This course will address the technology from a geoscience applications viewpoint. The problem thus dictates the technology and not vice versa. The course will implement a multiplicity of systems, including Arc/Info, Genasys, IDRISI, GRASS, MapInfo, AutoCAD, and others.

Who Should Attend—Any geoscientist interested in GIS as a tool.

Recommended Background—This course accommodates entry-level people, as well as geoscientists who work with the technology, and particularly those who have learned from using one or two systems.

What You Will Learn—Attendees will learn data availability and format, field input, data models, rectification, map projections, georeferencing, analytical methods in GIS, geostatistics, and trends in GIS.

Faculty: **Richard L. Bedell, Jr.**, Senior Geologist, Computer Applications for the World Exploration Generative Team, Homestake Mining Company, Sparks, Nevada; M.Sc., GIS and Remote Sensing, University of London; M.Sc., Geology, University of Toronto.

Limit: 75. CEUs: 0.8. Fee: \$150, students \$130; includes course manual and lunch.

10 Geomorphic Applications of In Situ-Produced Cosmogenic Isotopes.

Sunday, November 5, 8:00 a.m. to 5:00 p.m.

Cosponsored by *Quaternary Geology and Geomorphology Division*.

Nuclides produced in rock by cosmic rays, such as ^3He , ^{10}Be , ^{26}Al , and ^{36}Cl , have been used to date lava flows, estimate moraine ages, better determine rates of bedrock erosion, and learn more about the variability of Earth's magnetic field. Interest in cosmogenic nuclides and their application to geologic problems have increased dramatically as analytic capabilities have expanded and cosmogenic nuclide systematics have become better constrained. This course will consider the application of cosmogenic nuclides to geologic problems. We will review the physics of nuclide production, the models used for interpreting nuclide abundance, and the determination and uncertainty of nuclide production rates. Using examples from the literature, we will illustrate the geological applications of in situ-produced cosmogenic nuclides and the attendant pitfalls. At the end of the day, we will demonstrate the equipment and techniques needed to prepare samples for analysis and discuss the facilities capable of making accelerator mass spectrometric measurements.

Who Should Attend—Geoscientists from a wide variety of disciplines who are interested in using cosmogenic nuclides to estimate rates of landscape change and/or date Quaternary landforms such as lava flows, terraces, alluvial fans, and moraines.

Recommended Background—Attendees should have a general background in the geological sciences and be comfortable with basic concepts in physics, chemistry, and mathematics.

What You Will Learn—As a participant in this course, you will learn enough to judge whether cosmogenic nuclides could be a useful tool for solving research problems in your field. We will teach you the sampling strategies that we have employed and review the options for sample preparation and analysis. You will be cognizant of the assumptions underlying interpretive models and the uncertainties inherent in cosmogenic dates and erosion rate estimates. The course will include a full set of notes, graphics, and computer files that will enable you to evaluate specific scenarios in your own work and that of others.

Faculty: **Paul R. Bierman**, Dept. of Geology, University of Vermont; Ph.D., University of Washington. **Alan R. Gillespie**, Dept. of Geological Sciences, University of Washington; Ph.D., California Institute of Technology.

Limit: 40. CEUs: 0.8. Fee: \$240, students \$220; includes course manual, computer files, and lunch.

11 Hydrogeology and Geochemistry of Wetlands.

Sunday, November 5, 8:00 a.m. to 5:00 p.m.

Cosponsored by *Hydrogeology Division*.

ATTENTION STUDENTS: The Hydrogeology Division will SUBSIDIZE THE FIRST STUDENT WHO IS A VALID DIVISION MEMBER. The student MUST PAY THE FULL COURSE FEE when registering, but will be reimbursed \$50 after the GSA meeting by the Hydrogeology Division.

Research scientists and the regulatory scientific community are keenly interested in the hydrogeology and geochemistry of wetlands. Wetland groundwater hydraulics controls the geochemistry of wetland surface and pore waters, which in turn control the types of wetland plants and the degree of soil humification. Soil humification largely controls the fate and transport of many nutrients and contaminants that reach the wetland setting. Wetland hydrogeological topics to be covered include: the hydrogeologic settings of major types of wetlands, instrumentation used in wetlands to measure hydraulic head, evaluating the long-term saturation state of wetland soils by modeling, and chemical means to determine the extent to which wetlands are discharge or recharge areas. Geochemical topics to be covered include: isotopic and other chemical tracers and techniques used to evaluate wetland chemical cycling, the fundamental geochemistry of wetland nutrient and elemental cycling, and useful field approaches to evaluate wetland geochemistry quickly. Ecological topics to be addressed include: peatland paleoecological and stratigraphic techniques, and the hydrogeologic forcing of ecological evolution of wetlands over time. Aspects of using wetlands to treat waste water will also be discussed, and we will review the current state of knowledge on wetland delineation.



Coastal Land Loss, course #7. Photo by Robert Morton.



Sample collection on the inselbergs of south-central Australia. $^{10}\text{Be} + ^{26}\text{Al}$ erosion rate ≤ 0.6 m/m.y. Photo by Paul Bierman.

Who Should Attend—This course is intended for all regulatory scientists, research scientists, and students studying or working on wetland systems. The course is highly multidisciplinary and designed to reach a large audience needing the most current information on the topics to be covered, as well as a fundamental review of wetland hydrogeology, geochemistry, and ecology.

Recommended Background—It would be useful, but is not critical, for attendees to have had basic courses in hydrogeology, aqueous chemistry or geochemistry, and ecology. However, given the multidisciplinary nature of the course material, the instructors are prepared to teach to an audience with diverse backgrounds.

What You Will Learn—Attendees will gain a clear understanding of the hydrogeology of wetlands, the geochemical processes operating within them, how hydrology and hydrogeology are coupled to wetland ecological succession, and the most current ways used to delineate wetlands.

Faculty: **Donald I. Siegel**, Dept. of Earth Sciences, Syracuse University; Ph.D., University of Minnesota. **Barry G. Warner**, Wetland Research Center, University of Waterloo; Ph.D., Simon Fraser University, British Columbia.

Limit: 100. CEUs: 0.8. Fee: \$175, students \$75; includes course manual and lunch.

Other Courses, Forums, and Workshops

Fractals and Nonlinear Dynamics: New Numerical Techniques for Sedimentary Data.

Friday, November 3 and Saturday, November 4, 8:00 a.m. to 5:00 p.m.; Crowne Plaza Hotel. Sponsored by SEPM (Society for Sedimentary Geology).

This short course is designed to teach researchers about the techniques and potential applications of fractals and nonlinear dynamics ("chaos theory"). Just to cite a single field of application, these new theories provide powerful new techniques for analyzing time series, or spatial profiles (e.g., well logs, topographic profiles), and spatial data (maps). Sedimentary geologists deal every day with actual time series (e.g., measurements of current velocity or suspended sediment concentration at a station), or spatial "time" series (e.g., stratigraphic sections) and maps—yet few sedimentary geologists know much about the new numerical techniques available to analyze such data. Much of the primary literature is published in journals or books that sedimentary geologists do not read, and often in language that they cannot understand. We will provide a set of notes that explains these concepts and techniques in language that sedimentary geologists can understand. The only math background that will be assumed is a first university course in calculus. Instructors: Gerry Middleton, Roy Plotnick, and Dave Rubin.

Limit: 40. Fee: \$375, includes short course notes. Preregistration required. For information and registration: SEPM Continuing Education Department, 1731 E. 71st Street, Tulsa, OK 74136-5108; (918) 493-3361, ext. 22; fax 918-493-2093; E-mail: myrallee@aip.org.

Exploring the Solar System in the Classroom: A Hands-On Approach.

Saturday, November 4, 8:00 a.m. to 5:00 p.m.; Ernest N. Morial Convention Center. Sponsored by NASA, Planetary Geology Division, and GSA's SAGE Program.

This workshop will be an interactive, hands-on experience for K-12 teachers. Topics related to the geologic exploration of our Solar System will be presented in a modular format, permitting maximum discussion and experimentation among the participants.

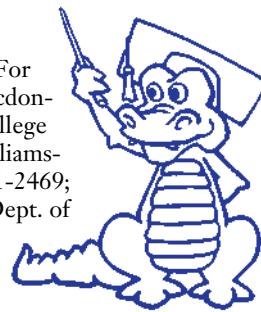
Limit: 100. Cost: \$5. Preregistration required. For information: Cassandra Coombs, Dept. of Geology, College of Charleston, 66 George St., Charleston, SC 29424; (803) 953-8279.

Effective Teaching: A Workshop for Graduate Students, Assistant Professors, and Anyone Else Interested in Becoming a Better Teacher.

Saturday, November 4, 8:00 a.m. to 5:00 p.m.; Ernest N. Morial Convention Center. Sponsored by National Association of Geology Teachers and GSA's SAGE Program.

Teaching can be a very rewarding experience, but effective teaching requires careful planning, creativity, and hard work. This workshop is designed to give participants practical advice and hands-on experience with the nuts and bolts of college teaching. Participants will learn how to design and deliver effective lectures, and will examine teaching resources (i.e., slide sets, videos, texts, CD-ROMS), nontraditional teaching and assessment methods, and the latest educational research.

Limit: 50. Cost: \$15. Preregistration required. For information: Heather Macdonald, Dept. of Geology, College of William and Mary, Williamsburg, VA 23185, (804) 221-2469; and Barbara Tewksbury, Dept. of Geology, Hamilton College, Clinton, NY 13323, (315) 859-4741.



Chemical Weathering Rates of Silicate Minerals.

Saturday, November 4 and Sunday, November 5; Bourbon Orleans Hotel. Sponsored by Mineralogical Society of America.

This course will be a broad interdisciplinary review of the silicate weathering rates from theoretical, experimental, and field perspectives and will emphasize discussions on future research directions. The course will coincide with the release of *Reviews in Mineralogy Vol. 31, Chemical Weathering Rates of Silicate Minerals*. Speakers reviewing specific weathering topics will be: Robert Berner and Antonio Lasaga, Yale University; Alex Blum, Robert Stallard, and Art White, U.S. Geological Survey; Susan Brantley, Pennsylvania State University; William Casey, University of California; Patricia Dove, Georgia Institute of Technology; James Drever, University of Wyoming; Michael Hochella, Jr., Virginia Polytechnic Institute; Kathryn Nagy, Sandia National Laboratory; Harald Sverdrup, Lund University. Conveners: Art F. White and Susan Brantley.

Discussion sessions involving all participants will focus on aspects of integration of silicate dissolution models, comparison between laboratory and

NEW ORLEANS

BRIDGING THE GULF

field rates, and the role of chemical weathering at the soil, watershed, and continental scales. Subsequent GSA symposium and theme sessions will present additional opportunities for presentation of research results. The interdisciplinary nature of the course will benefit established researchers in the field as well as workers in related studies such as soil science, watershed processes, and global change. Students are especially encouraged to attend.

Limit: 100. Fee: \$300, students \$250 (includes hotel nights of November 3 and 4, and meals both days excluding lunches). For information and registration: MSA Business Office, 1130 Seventeenth Street, N.W., Suite 330, Washington, DC 20036; (202) 775-4344; fax 202-775-0018.

Siliceous Microfossils.

Sunday, November 5, 8:00 a.m. to 5:00 p.m.; Ernest N. Morial Convention Center. Sponsored by Paleontological Society.

This short course will highlight recent advances in studies of siliceous microfossils and their role in biostratigraphy, sequence stratigraphy, and paleogeographic and paleoenvironmental reconstructions. Contributions of many of these fossil groups in developing current climate models will also be discussed. The course will cover chrysophytes, ebridians and endoskeletal dinoflagellates, silicoflagellates, freshwater diatoms, Cretaceous and Cenozoic marine diatoms, and Paleozoic through Cenozoic radiolarians and sponge spicules.

Course content is of interest to biologists, geologists, paleontologists, or anyone who needs to be better informed about current concepts in siliceous microfossil paleontology. Like other Paleontological Society short courses, this one is especially appropriate for those who teach general courses in paleontology, historical geology, and history of life. The speakers are prominent experts in their respective fields, and their presentations will include recent discoveries, controversies, and ideas about the origin, evolution, and utility of these siliceous microfossils.

Contributors: Jonathan Aitchinson, Jack Baldauf, John Barron, Charles Blome, Platt Bradbury, Benita Murchey, Kate Duff, John Ernissee, David Harwood, Donna Hull, Emile Pessagno, William Krebs, Kevin McCartney, Paula Noble, Katherine Reed, J. Keith Rigby, Annika Sanfilippo, Patricia Whalen, and Barbara Zeeb.

No fee or registration. Course notes will be on site for \$15. For information: Charles D. Blome, U.S. Geological Survey, P.O. Box 25046, MS 919, Denver Federal Center, Denver, CO 80225; (303) 236-5682; fax 303-236-5690; E-mail: cblome@greenwood.cr.usgs.gov.

Job Hunting and Career Development Strategies and Skills for Geoscientists.

Sunday, November 5, 9:00 a.m. to 5:00 p.m.; Hyatt Regency Hotel. Sponsored by Association for Women Geoscientists.

Learn the job-hunting skills necessary to survive in today's changing job market and to plan for future career development in your field, as well as related areas you may not have considered. Topics covered include the following:

- Networking gives access to the hidden job market that provides 85% of available employment but is not advertised. Learn to network through professional organizations as well as casual contacts.
- Résumé writing is a skill that provides the job seeker with the opportunity to get an interview. We are including an excellent résumé-writing workbook for geoscientists. Learn how to market and differentiate yourself from the competition.
- Attitudes for success derive from skills and strengths that job seekers may undervalue or be unaware they have. Revealing these attributes boosts job-seeking efforts and results in successful interviews.

The workshop will include sharing skills and experiences in an interactive exchange, and the opportunity to change attitudes and methods that are no longer effective. The guarantee of future employ-

ment depends on the marketing skills of the individual and strategizing and positioning within the evolving job market.

Limit: 25. Fee: \$25. Preregistration required. Résumé-writing workbook included; additional copies are \$15. For information and registration: Kata McCarville, Computing Center, Colorado School of Mines, Golden, CO 80401; (303) 273-3448; fax 303-273-3475; E-mail: kmccarvi@mines.colorado.edu.

Project Atmosphere.

Sunday, November 5, 1:30 to 4:00 p.m.; Ernest N. Morial Convention Center. Sponsored by Louisiana Earth Science Teachers Association and GSA's SAGE Program.

The sky's the limit! Join Project Atmosphere's Resource Agents in hands-on meteorology activities that will enhance your background and provide new ideas to take into the classroom. All activities and materials provided by Project Atmosphere!

Limit: 40. No costs. Preregistration preferred. For information: Mary Alice Cain, 124 Stafford Place, New Orleans, LA 70124, (504) 488-5212; and Dave Mastie, 1137 Michigan, Ann Arbor, MI 48104, (313) 994-2120.

Preparing Successful Grant Proposals to Fund Curriculum Innovation in the Geosciences.

Sunday, November 5, 1:30 to 5:00 p.m.; Ernest N. Morial Convention Center. Sponsored by National Association of Geology Teachers and National Science Foundation.

Learn about NSF programs that fund innovative instructional approaches in the sciences, discover the kinds of ideas that have worked well in the past (and those that have not), understand NSF's review procedures, and learn how to construct a successful proposal. The focus will be on undergraduate education, but information will be provided on programs for K-12 curricula and teacher preparation. Participants will examine actual funded proposals, learning to recognize positive features that characterize outstanding proposals and fatal flaws that kill others. A panel discussion featuring successful participants in NSF's educational programs will solidify understanding of qualities that can make or break a proposal. Bring concerns for necessary improvements in your curriculum, and leave with concrete ideas about how to get the funding you need.

Limit: 50. No costs. Preregistration preferred. For information: Judith Hannah, National Science Foundation, Room 785, 4201 Wilson Blvd., Arlington, VA 22230; (703) 306-1557.

Geoscience DataBase Forum.

Sunday, November 5, 2:00 to 5:00 p.m.; Hyatt Regency Hotel. Sponsored by Geoscience Information Society.

This forum will feature a variety of digital databases (including on-line, CD-ROM, and disks) useful to earth scientists, geoscience information professionals, and librarians. Representatives of several databases will review their contents and search systems and provide information on access. Producers of databases in these formats interested in participating are invited to contact the organizer.

No fee or registration. For information: Barbara J. Defelice, Kriage Physical Sciences Library, Dartmouth College, Hanover, NH 03755-3571; (603) 646-3845; fax 603-646-3681; E-mail: barbara.defelice@dartmouth.edu.

Celebrating the Founding of Modern Geology: The 200th Anniversary of James Hutton's *Theory of the Earth*.

Sunday, November 5, 2:00 to 4:45 p.m.; Ernest N. Morial Convention Center. Sponsored by History of Geology Division.

Because 1995 is the 200th anniversary of the publication of James Hutton's *Theory of the Earth*, it is fitting that we explore the influence this book and its author have had on geological thought. Who was James Hutton? Was he truly, as he is often called, the "founder of modern geology?" How did this Scottish physician revolutionize the way we look at the earth and thereby lay the foundations for the modern science of geology? In what context did he work and what were the ideas presented in his writings, especially the 1795 treatise, that have generated so much admiration over the past 200 years? Does Hutton really deserve so much acclaim and credit?

Convened by William Brice and Robert Ginsburg, this forum will feature a panel of internationally known speakers, to be followed by a round-robin open discussion. Everyone is welcome and invited to come listen and participate. We especially welcome

Position Available



Program Manager Institute for Environmental Education



The Geological Society of America is committed to addressing environmental issues, practices, and problems involving the earth sciences. Thus, GSA is soliciting applications for the position of Program Manager of the Institute for Environmental Education (IEE). Through Institute programs, GSA offers an educational interface between the public and private sectors and the geologic community on matters of the environment. The mission of the Institute involves communication of geoscience information relevant to environmental issues, training as applied to environmental practice, and research related to environmental problems.

The initial appointment of the IEE Program Manager will be for a three-year term. Desirable characteristics for the successful candidate include:

- Interest and experience in the geosciences, particularly involving applied settings.
- M.S. degree required; Ph.D. desirable in sciences or engineering.
- Organized and productive.
- Demonstrated interest in public issues.
- Fund-raising abilities.
- Demonstrated ability to communicate effectively both in writing and orally.
- Willingness to possibly relocate and work at GSA headquarters (Boulder, Colorado) with staff and geoscientists.
- Interest in working with the public and the media.

This position will report through the Education Department to the Executive Director.

Responsibilities currently include:

- Coordination of Annual and Section environmental forum(s).
- Continued development and maintenance of Geologists and Environmental Public Outreach Program (GEOPOP), including registry, database maintenance, and newsletter publication.
- Initiation of and arranging for seminars and technical programs on environmental matters related to public awareness.
- Development and implementation of a sponsored mentorship program for students of the earth sciences.
- Assistance in fund-raising activities of the Institute and general support of the GSA education enterprise.

The appointment will remain open until a suitable qualified candidate has been identified. Salary will be commensurate with experience. The position is available July 1, 1995. Candidates should submit a résumé, a letter of interest, and a list containing the names and addresses of three references as soon as possible to: Donald M. Davidson, Jr., Executive Director, Geological Society of America, 3300 Penrose Place, P.O. Box 9140, Boulder, CO 80301.

GSA is an equal-opportunity employer.

those who may be a bit uncertain as to why we celebrate this 200th birthday and pay such homage to its author. The session will be lively and informative, with refreshments and souvenirs.

No fee or registration. For information: William R. Brice, University of Pittsburgh, Dept. of Geology, Johnstown, PA 15904, (814) 269-2901, E-mail: wbrice@upj.pitt.edu; or Robert N. Ginsburg, University of Miami, RSMAS-MGG, Miami, FL 33149, (305) 361-4875, E-mail: rginsburg@rsmas.miami.edu.

Fairly Simple Exercises in Geology Designed for Teachers with Little or No Geology Background.

Monday, November 6, 8:00 a.m. to 5:00 p.m.; Ernest N. Morial Convention Center. Sponsored by GSA's SAGE Program and Skidmore College.

This workshop is based on a revised and retitled edition of *Workbook Exercises in Earth Science for 4-6 Grades and Their Teachers*, a book of exercises that has been used by teachers from fourth grade through college introductory geology courses. The course is for K-12 teachers who feel that they need assistance with teaching geology topics in the classroom and for geoscientists who want to learn effective ways of partnering with K-12 teachers and their classes. Special attention will be given to how teachers can approach a science exercise without fear and how to transmit the excitement of geology to their students.

The exercises emphasize that teachers and their students can have a significant experience in practical geological (scientific) techniques (classification), delve into geology (mineral identification), explore the latest theories (plate tectonics), or learn a life skill

(map reading). All of the experiences presented in the workbook are fun, inexpensive, and easy to do.

Limit: 60. No fee. Preregistration required. For information: John J. Thomas and Barbara R. Thomas, Dept. of Geology, Skidmore College, Saratoga Springs, NY 12866; (518) 584-5000, ext. 2621.

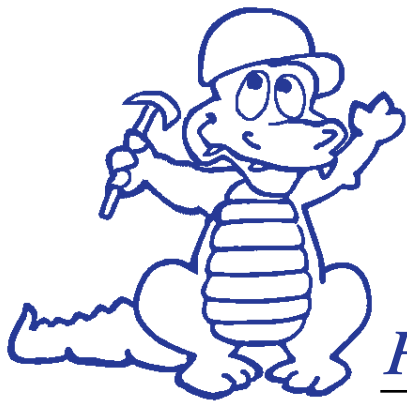
Seismic Sleuths: An Earthquake Curriculum for Grades 7-12.

Monday, November 6, 1:00 to 4:00 p.m.; Ernest N. Morial Convention Center. Sponsored by American Geophysical Union and National Earth Science Teachers Association.

When will the next large earthquake strike your area? What are the risks to you and your students? How can you prepare for this event? This workshop will address these and other questions by means of a new earthquake curriculum developed for grades 7-12. The curriculum is hands-on, inquiry based, dynamic, and fun.

Limit: 40. No fee. Preregistration required. For information: Frank Ireton, American Geophysical Union, 2000 Florida Ave., N.W., Washington, DC 20009; (202) 462-6910, ext. 243.





FIELD TRIPS

Trips start and end in New Orleans unless otherwise indicated. If you register for *only* a field trip, you must pay a \$35 nonregistrant fee in addition to the field trip fee. This fee may be applied toward meeting registration if you decide to attend the meeting. Students, spouses, and guests are cordially encouraged to attend. The trips are technical in nature and some can be physically rigorous.

Trip fees include transportation during the trip and a guidebook. Other services such as meals and lodging are noted by the following symbols: B—breakfast, L—lunch, R—refreshments, D—dinner, and ON—overnight lodging. The mode of transportation follows overnight lodging information.

Returning buses for postmeeting trips 7, 11, 12, and 13 can stop at the New Orleans Airport to discharge participants who have evening flights or would prefer to spend the night in a motel adjacent to the airport, where rates may be less than downtown. Participants are cautioned against scheduling any tight travel connections with field trip return times, because those times are estimates and delays in the field can occur. For a list of hotels near the airport and their phone numbers, contact Becky Martin, GSA Field Trip Coordinator, ext. 164.

Preregistration deadline is September 29. **Cancellation deadline is October 6.** No refunds will be given after this date. If GSA must cancel a field trip because of logistics or if minimum registration requirements are not met, a full refund will be issued to you after the meeting. Be aware of flight-change penalties imposed by the airlines. Plan alternatives in advance should the trip you are registered for be canceled.

For further information or if you have special needs, contact the individual trip leader or 1995 Field Trip Chair Whitney Autin, Louisiana State University, Institute for Environmental Studies, 42 Atkinson Hall, Baton Rouge, LA 70803-5705, (504) 388-3420, fax 504-388-4286; or Co-Chair Duncan Goldthwaite, Independent Petroleum Geologist, 4608 James Drive, Metairie, LA 70003, (504) 887-4377.

Premeeting

1 Explosive Volcanism and Pyroclastic Deposits in East-Central Mexico: Implications for Future Hazards.

Tuesday, October 31 (morning) through Sunday, November 5 (morning). Claus Seibe, Instituto de Geofísica, Universidad Nacional Autónoma de México, Ciudad Universitaria, D.F., C.P. 04510 México, phone (525) 622-41-46, E-mail: csiebe@tonatiuh.igeofcu.unam.mx; Renato Castro, Hugo Delgado, and Jose Luis Macias, same address; and Michael Abrams, Jet Propulsion Laboratory, Pasadena. Maximum: 24. Cost: \$550, plus airfare (5B, 4L, R, 0D, 5ON, van). This trip will start and end at the Mexico City airport; participants will make their own flight arrangements. The end of the trip is scheduled to connect with a Continental Airlines flight that arrives in New Orleans at 2:34 p.m. on November 5.

The first three days will be devoted to the active volcano Popocatepetl. Deposits related to major Plinian eruptions that affected pre-Hispanic settlements will be inspected. During the fourth day we will visit Pico de Orizaba, Las Cumbres complex, as well as Las Derrumbadas rhyolitic domes and associated explosion craters. Nights will be spent in hotels, and no strenuous hikes are planned. The highest point to be visited is 3950 meters in altitude. Warm clothing, as well as summer wear, is required; rain is not expected but is possible.

2 Island and Karst Hydrogeology of Andros, Bahamas.

Wednesday, November 1 (early morning) through Sunday, November 5. Yoram Eckstein, Dept. of Geology, Kent State University, Kent, OH 44242, (216) 672-2364; and Garry Maurath, Raytheon Engineers and Constructors, Sacramento, California. Maximum: 22. Cost: \$450; includes full room and board and all transportation exclusive of airfare to and from Ft. Lauderdale, Florida. This trip starts and ends at the Sunshine Airlines counter of Ft. Lauderdale Airport in Florida.

During this trip we will follow the entire recharge-discharge cycle on an intensely karstified, low-relief island. We will discuss the relations between potential endmembers for ground-water mixing systems, and various depositional environments. Karst phenomena and distribution of the freshwater lens will be examined during a visit to at least three onshore "blue holes" (deep sinkholes), and one offshore submarine blue hole and to a local well field with a unique system of subhorizontal trenches, skimming shallow ground water from the top of the freshwater lens. We will also examine the occurrence of well-developed phytokarst topography.

3 Wisconsinan to Holocene Sedimentation, Soil Formation, and Evolution of the Mississippi River Flood-Plain, Southern Lower Mississippi Valley.

Friday, November 3 through Sunday, November 5. Cosponsored by *Sedimentary Geology Division*. Andres Aslan, Dept. of Geological Sciences, University of Colorado, Boulder, CO 80309, (303) 492-6313; Whitney Autin, Louisiana State University, Institute for Environmental Studies, Baton Rouge; and Torbjorn E. Tornqvist, Dept. of Physical Geography, Universiteit Utrecht, Netherlands. Maximum: 40. Cost: \$190 (0B, 2L, R, 0D, 2ON, bus).

This trip will examine the sedimentologic and pedologic characteristics of "classic" Mississippi River flood-plain depositional environments. Comparisons between Holocene and Wisconsinan Mississippi River flood-plain deposits will also be used to discuss relative sea level and climatic influences on flood-plain evolution in the southern Lower Mississippi Valley.

4 Gulf Coast from New Orleans, Louisiana to Pensacola Beach, Northwest Florida.

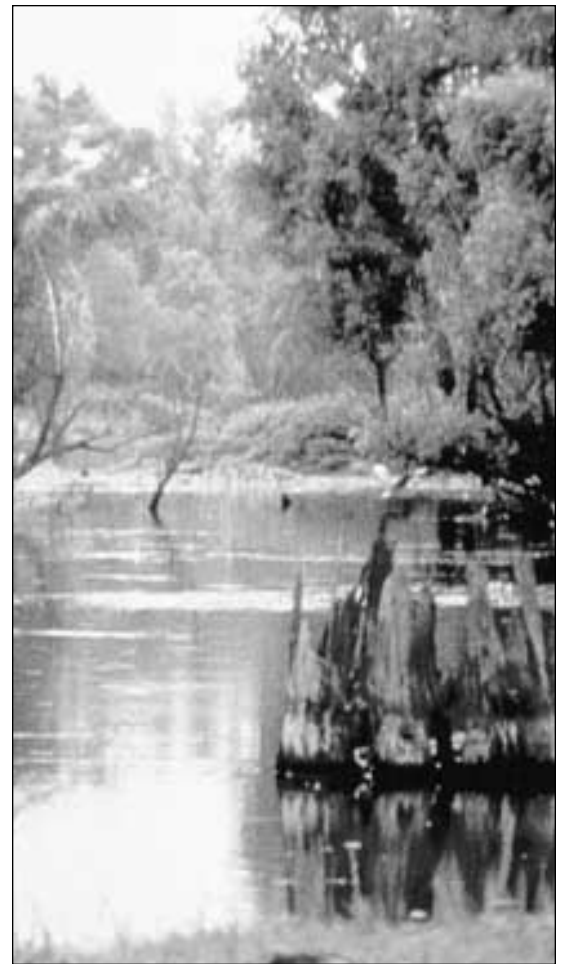
Saturday, November 4 and Sunday, November 5. Ervin G. Otvos, Gulf Coast Research Laboratory, P.O. Box 7000, Ocean Springs, MS 39564-7000, (601) 872-4235. Maximum: 40. Cost: \$160 (0B, 2L, R, 0D, 1ON, bus).

This trip will cover Neogene and Quaternary coastal plain units, landforms, their development and Late Holocene shore erosion in four states. Alluvial, eolian, strandplain, lagoonal, bay and nearshore marine deposits, as well as barrier islands will be observed and discussed. We will emphasize contrasts with northwest Gulf and Atlantic coastal evolution, including sedimentary cycles and climate indicators. We will visit historic sites and spend Saturday night at Pensacola Beach, one of the finest white sand beaches in the country.

5 Hydrogeology and Depositional Setting of Coastal Louisiana Floating Marshes.

Sunday, November 5. Cosponsored by *Hydrogeology Division* and *Coal Division*. Chris Swarzenski, U.S. Geological Survey, Water Resources Division, 3535 S. Sherwood Forest Drive, Suite 120, Baton Rouge, LA 70816, (504) 389-0281, ext. 3219; and Gail Chmura, Dept. of Geography, McGill University, Montreal, Quebec. Maximum: 15. Cost: \$95 (1L, van).

Floating marshes are peat-forming environments with a detached substrate that moves vertically in response to fluctuating water levels. Although found throughout the world, their occurrence in coastal settings is rare. The Mississippi Delta plain is an



Courtesy of Greater New Orleans Tourist Commission.

exception; floating marshes dominate large portions of the wetland landscape. Locally called "floatants," they comprise as much as 75% of low-salinity marshes of the lower Mississippi Delta plain. We will visit examples of floating marshes south of New Orleans to examine their depositional setting, stratigraphy, and ecology in context of their unique hydrology.

Half Day—Concurrent with the Meeting

6a/b Engineering Geology of the New Orleans Area: Water, Water, Everywhere.

Tuesday, November 7, 7:30 a.m. to 12:30 p.m., or Wednesday, November 8, 7:30 a.m. to 12:30 p.m. Roger T. Saucier, Consultant, 4325 Winchester Road, Vicksburg, MS 39180-8969, (601) 636-7444; and Jesse O. Snowden, College of Science and Technology, Southeast Missouri State University, Cape Girardeau. Maximum: 40 (each trip). Cost: \$65 (R, bus).

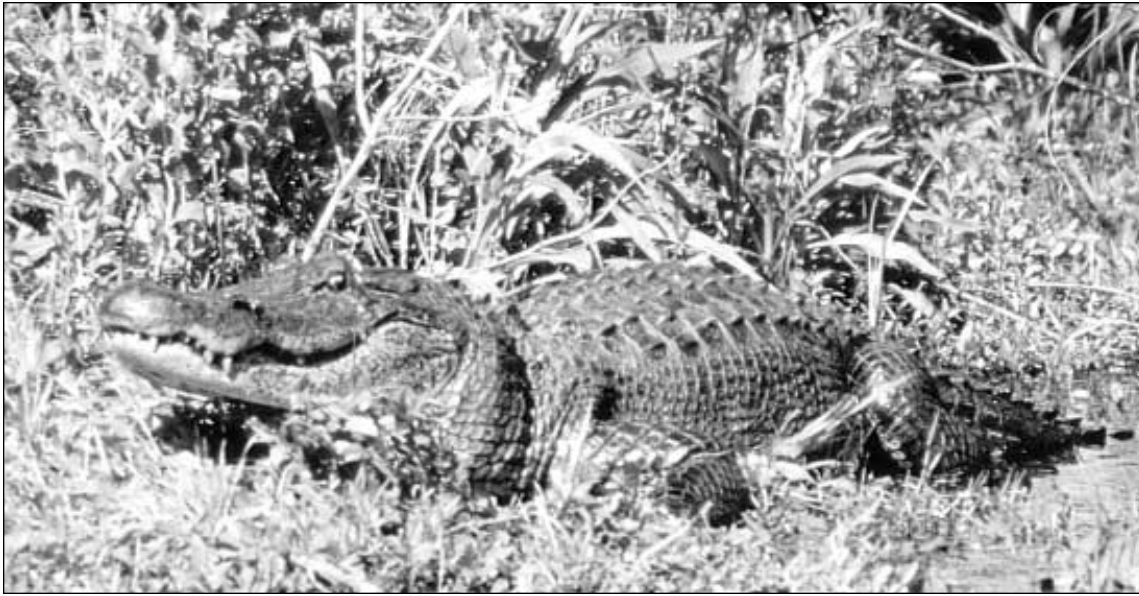
This 100 km tour of New Orleans and vicinity emphasizes the effects of drainage and subsequent dramatic subsidence of organic-rich soils on infrastructure and residential developments. Stops include Mississippi River flood control structures, Lake Pontchartrain hurricane protection measures, one of the world's largest pumping stations, and a municipal water treatment plant. Deltaic landscapes before and after urbanization will be compared in an area where too much and too little water both present problems.

Postmeeting

7 Geological and Cultural Excursion from Jackson, Mississippi to St. Francisville, Louisiana.

Thursday, November 9 through Saturday, November 11. Cosponsored by *National Association of Geology Teachers*. Maureen K. Corcoran, Earthquake Engineering & Geosciences Division, U.S. Army Corps of Engineers, Waterways Experiment Station, Attn.: CEWES-GG, 3909 Halls Ferry Road, Vicksburg, MS 39180-6199, (601) 634-3334; Drew Warne and Danny W. Harrelson, same address. Maximum: 40. Cost: \$190 (0B, 2L, R, 0D, 2ON, bus).

The positions of Jackson, Vicksburg, and Natchez, Mississippi, and St. Francisville, Louisiana, in the central Lower Mississippi Valley region have been vital to economic development and cultural diversity of the area. The role of the region, associated with its position in the river valley and the



Hi there! Welcome to New Orleans. Photo courtesy of Greater New Orleans Tourist Commission. Photo by Linda S. Reineke.

topography of the loess bluffs, was of preeminent importance to the outcome of the Civil War. The Lower Mississippi River Valley also served a diverse Native American population. This field trip will include visits to the classic (Lyell was there) fossiliferous Eocene outcrops in Jackson and the type locality of the Oligocene Vicksburg limestone as well as many important cultural sites, including one of the largest known Indian mounds and the Vicksburg Battlefield and its entrenchments.

8 Paleogene Molluscan Biostratigraphy of the Eastern Gulf Coastal Plain.

Thursday, November 9 through Sunday, November 12. Charles R. Givens, Dept. of Physical Sciences, Nicholls State University, Thibodaux, LA 70310, (504) 448-4502; and David Dockery III, Mississippi Office of Geology, Jackson. Maximum: 40. Cost: \$220 (0B, 2L, R, 0D, 3ON, bus).

This trip will examine stratigraphic sections in the eastern Gulf Coastal Plain (western Alabama and eastern Mississippi) containing molluscan faunas representative of the Midwayan, Sabinian, Claibornian, Jacksonian, and lower Vicksburgian provincial stages. On the first day we will focus on latest Cretaceous–Paleogene through early Eocene (Midwayan through Sabinian) localities, beginning with two Cretaceous–Tertiary boundary sections in south-central Alabama. The morning of the second day will be spent examining the richly fossiliferous Gosport Sand and adjacent middle Eocene (Claibornian–lower Jacksonian) units at famous Little Stave Creek in southwest Alabama. Additional middle Eocene localities in western Alabama will be visited during the afternoon on the way to the final stop, an Eocene–Oligocene (Jacksonian–Vicksburgian) boundary section on the Chickasaw River in southeast Mississippi. Discussions at field trip stops will focus on (1) possible causes of the periodic mass extinctions responsible for the punctational pattern of the Paleogene molluscan faunal succession in the Gulf Coastal Plain; (2) comparative faunal diversity within and among the provincial stages; and (3) the relative importance of immigration vs. evolution in reestablishing faunal diversity following episodes of mass extinction.

9 The Appalachian Thrust Belt in Alabama: Influences on Structural Geometry.

Thursday, November 9 through Saturday, November 11. William A. Thomas, Dept. of Geological Sciences, University of Kentucky, Lexington, KY 40506-0053, (606) 257-6222; and W. Edward Osborne, Geological Survey of Alabama, Tuscaloosa. Maximum: 40. Cost: \$195 (0B, 2L, 0D, 2ON, bus). Although the trip ends in New Orleans, the bus can make a stop in the early afternoon on Saturday at the Birmingham, Alabama, airport for anyone wishing to depart from there.

An overview of the Appalachian thrust belt in Alabama will include examples of across-strike and along-strike variations in thrust-belt structure and in pre-orogenic and synorogenic stratigraphy. The Alabama Appalachians illustrate (1) the effects of a complete Wilson Cycle, (2) along-strike diachroneity of thrusting and foreland subsidence in the context of an irregular continental margin, (3) across-strike variations in the internal structure of the thrust wedge, and (4) cross-strike alignments of along-strike structural changes in transverse zones. Field stops

are selected to focus on excellent exposures where structural and stratigraphic relations can be observed and interpreted. Highlights of the trip include the influence of pre-thrust basement faults beneath the allochthon on thrust-belt structures, contrast between ramps of the basal decollement and smaller scale folds and imbricate thrust faults associated with upper-level detachments, transverse zones and lateral ramps, oblique intersection of early synorogenic stratigraphy and late thrust-belt structure, synsedimentary structures, and two exposed thrust-fault surfaces where effects of footwall deformation may be observed.

10 Cultural Adaptation to Landforms in the Mississippi Delta Plain.

Friday, November 10, 8:00 a.m. to 6:00 p.m. Cosponsored by *Archaeology Division* and *National Association of Geology Teachers*. Charles E. Pearson, Coastal Environments, Inc., 1260 Main Street, Baton Rouge, LA 70802, (504) 383-7451; and Donald W. Davis, Louisiana State University. Maximum: 40. Cost: \$80 (1L, bus).

This trip will investigate the geology and cultural setting of the Mississippi Delta plain. We will travel across the Mississippi River and through the deltaic plain of the Lafourche region west of New Orleans. Stops will be made to examine and discuss fluvial and deltaic features and processes and their relationship to human use and settlement in the region over the past several thousand years.

11 Site Characterization and Application of Horizontal Wells for Ground-Water Remediation.

Friday, November 10, 8:00 a.m. to 5:00 p.m. Ivy Dupree and Eric Meyer, Dow Chemical Company, P.O. Box 150, Building 3302 W., Plaquemine, LA 70765, (504) 353-4334. Maximum: 40. Cost: \$70 (1L, R, bus). Required safety equipment and lunch will be provided by Dow Chemical at their plant in Plaquemine.

The Dow Chemical Company (Dow) Louisiana Division manufacturing complex is a global scale petrochemical facility. A site-wide subsurface assessment has been completed to characterize the geohydrology and area distribution and depth of chlorinated organic compounds impacting the shallow ground-water. A detailed computer generated 3-D relational model showing stratigraphy, lithology, and concentrations of compounds of concern has been prepared. Directional drilling for installation of horizontal ground-water recovery wells has been implemented as the most feasible and cost effective technology to recover and contain contaminated ground-water. This field trip will provide participants with in-plant visits to areas where existing vertical ground-water recovery wells are currently in operation. The site of active Phase I horizontal well drilling operations will be visited, and the design and construction aspects for installation of the horizontal wells will be reviewed.

12 Internal Structure of the Five Island Salt Dome, with a Visit to Côté Blanche Salt Dome.

Friday, November 10, 6:30 a.m. to 6:00 p.m. Donald H. Kupfer, 210 West Circle Drive, Canon City, CO 81212-2439, (713) 269-3620; Brian E. Lock, University of Southwestern Louisiana, Lafayette; Whitney Autin, Louisiana State Univer-

sity, Institute for Environmental Studies, Baton Rouge; and James T. Neal, Sandia National Labs, Albuquerque. Maximum: 36. Cost: \$75 (1L, R, van). NOTE: Mine tour requires hard, sturdy shoes (no tennis shoes; steel-toed preferred); hard hats and flashlights are optional.

On this trip we will cross the Pleistocene and Holocene Mississippi river flood plain and view swamp and terrace deposits and the old Lafourche and Teche courses of the Mississippi River. When we arrive at Côté Blanche the group will divide in half. One group will tour the surface of Côté Blanche "Island," examine surface morphology and soils and the uplifted, faulted, Pleistocene fluvial and coastal deposits and profiles, and visit Louisiana's only sea cliff. The other group will have a tour of the North American Salt Company mine and will walk around part of the mine workings. The salt is pure, crystalline, white, and vertically bedded. We will observe the salt, the vertical structures, anomalous salt features (textures, structures, inclusions), and mining methods. After lunch the two groups will exchange places.

13 Sand and Gravel Mining in the Amite River Flood Plain, Southeastern Louisiana.

Friday, November 10, 7:00 a.m. to 6:00 p.m. Joann Mossa, Dept. of Geography, University of Florida, 3141 Turlington Hall, Gainesville, FL 32611, (904) 392-0494. Maximum: 40. Cost: \$75 (R, bus).

This trip will provide an overview of the middle Amite River, a spatially variable river in terms of its morphology, sedimentology, stratigraphy, hydrologic processes, economic resources, and human impact. Discussions at field stops will focus on the spatial variations in this valley, the economic importance of the river for sand and gravel production, and the pronounced channel metamorphosis in areas of flood-plain mining.

Sponsored by Society of Economic Geologists

For information, contact the field trip leader. Send payment in U.S. dollars to: Jim Saunders, Dept. of Geology, 210 Petrie Hall, Auburn University, Auburn, AL 36849, (334) 844-4282. Costs reflect a differential in SEG member/nonmember rates and include transportation and lodging from the beginning to the end of the trip.

Sulfur and Sulfide Mineralization in Gulf Coast Salt Domes.

Saturday, November 4 through Sunday, November 5. J. Richard Kyle, Dept. of Geological Sciences, University of Texas, Austin, TX 78713, (512) 471-4351. Minimum: 20. Maximum: 40. Cost: \$200/\$225.

We will visit the world's best exposure of a salt dome cap rock at Winnfield salt dome in the Interior Salt Basin of Louisiana, including exposures of Mississippi Valley-type massive Fe-Zn-Pb-Ba mineralization within the calcite cap rock. Upon our return to New Orleans, we will look at core from Freeport's large new offshore sulfur deposit, Main Pass.

Gold Deposits of the Carolina Slate Belt.

Thursday, November 9 (evening) through Saturday, November 11. Doug Crowe, Dept. of Geology, University of Georgia, Athens, GA 30602, (706) 542-2382. Minimum: 20. Maximum: 40. Cost: \$275/\$300. Trip begins and ends in Columbia, South Carolina.

This trip will include tours of the Ridgeway and Haile gold deposits, along with the fascinating metamorphosed acid-sulfate Au-Cu system, the Brewer deposit. We will also see key outcrops of the metavolcanic and metasedimentary units hosting the gold deposits.

NEW ORLEANS

BRIDGING THE GULF

SPECIAL PROGRAMS

Earth Scientists on Capitol Hill

Wednesday, November 8, 12:00 noon to 1:00 p.m.; Ernest N. Morial Convention Center. Sponsored by GSA Geology and Public Policy Committee.

The GSA Congressional Science Fellow program places earth scientists on the staffs of congressional offices. Congressional Science Fellows participate in the drafting of public policy by providing scientific and technical expertise to gain first-hand experience with the federal legislative process. Several of the previous fellows have accepted positions in Washington, D.C., and continue to provide to Congress and federal agencies a much-needed perspective of earth sciences.

As GSA's ninth Congressional Science Fellow, Jill S. Schneiderman concentrated on national environmental and natural resource policies, particularly forest and mining issues, and Missouri River and water quality issues while serving on the staff of Senator Thomas Daschle (D-SD), Senate Democratic Leader.

At this open session, Schneiderman will report about her experiences on the Hill and discuss some means by which earth scientists may become more effective in the public policy sphere. Geology and Public Policy Committee members will comment on how scientists can provide expertise to the U.S. Congress, on the role of the GSA Fellow program, and on the process to apply for the fellowship. Previous Congressional Science Fellows will also participate in the session.

Funded by GSA and by a grant from the U.S. Geological Survey, the GSA fellowship demonstrates the value of science-government interaction, and relates the need for informed involvement to the earth science community.

Geology and Public Policy Forum

Geology's Future: Perspectives from the U.S. Geological Survey, State Surveys, Academic Institutions, and the Private Sector

Wednesday, November 8, 1:00 to 2:30 p.m., Ernest N. Morial Convention Center.

The annual GSA Geology and Public Policy Committee forum will take a look into the future and discuss the role of geology and geologists in light of changing public and government attitudes toward science, research, and environmental priorities. Recent issues being addressed in Congress may have serious consequences on the direction of our profession.

The U.S. Geological Survey and some state surveys have been targeted for complete elimination or severe budget cutbacks. The value of their projects for the public benefit is being questioned. Academic institutions are revisiting and revising curricula to place less emphasis on the dwindling resource recovery industry and to make those curricula more relevant to today's job market. A scan of recently advertised academic positions indicates a trend toward the fields of environmental geology and hydrogeology. In the private sector, more geologists are finding work in the environmental consulting arena than in most other areas. At the same time, environmental legislation passed to date is being closely scrutinized by Congress, and government-funded restoration programs are coming under fire for being wasteful and showing lack of progress.

While the current reinvention of government can be viewed as a threat to geologists and to scientists in general, we can also seize it as an opportunity to revitalize the role of our science in the future.

Graduate School Information Forum

Monday, November 6 through Wednesday, November 8, 9:00 a.m. to 5:00 p.m., Ernest N. Morial Convention Center, Hall A.

Attention students: This is a great opportunity for you to search for the right graduate school. Come to New Orleans and meet with representatives of top graduate schools without spending the travel time and money to go to each school for information and interviews.

University representatives will be on hand to answer questions and talk to students. Individual appointments are not necessary, although students are welcome to contact the schools in advance and schedule a meeting time. A complete list of participating schools with contact names and telephone numbers is available. The schedule will be published in the September issue of *GSA Today*. The deadline for schools to register for the forum is **August 15**. If you would like to participate or receive the list, please contact Matt Ball, GSA headquarters.

Employment Opportunities in the Geological Sciences Roundtable Discussions

Sunday, November 5, 12:00 noon to 2:00 p.m.; Ernest N. Morial Convention Center.

This annual forum on employment opportunities in the geosciences allows valuable one-on-one interaction between panel members and individuals or small groups. Experts in each of the areas listed below will conduct his or her own "mini-roundtable discussion" designed to provide a better opportunity to field both general and specific questions on a more personal, individualized basis.

These roundtable discussions will be in the Employment Service area during the interview registration time; however, **YOU DO NOT HAVE TO BE SIGNED UP FOR EITHER THE ANNUAL MEETING OR THE EMPLOYMENT SERVICE TO PARTICIPATE IN THESE DISCUSSIONS.**

Everyone—professionals and students—is encouraged to attend, to talk with as many of the experts as you like, and to pick up a free copy of the

GSA Presidential Address and Awards Ceremony

Monday, November 6, 5:30 to 7:30 p.m.; Ernest N. Morial Convention Center.

The GSA Presidential Address and Awards Ceremonies will begin with President David A. Stephenson's address, *Ask the Right Question*. The GSA Awards Ceremony will follow immediately.

PENROSE MEDAL

John C. Crowell

ARTHUR L. DAY MEDAL

Thomas J. Ahrens

YOUNG SCIENTIST AWARD (DONATH MEDAL)

Ward E. Sanford

GSA DISTINGUISHED SERVICE AWARD

John E. Costa

Henry T. Mullins

Arthur G. Sylvester

Recognition will also be given to newly elected Honorary Fellows Ferenc Horvath and P. G. Cooray.

1995 booklet "Future Employment Opportunities in the Geological Sciences."

Roundtable discussion leaders from the following areas will be featured: Academic and Educational, Mining, Federal Government, State and Local Government, Petroleum, Consulting, and Federal Legislation and Environmental Restoration.

For further information, contact T. Michael Moreland, Membership Services Manager, GSA headquarters.

Employment Service

Monday, November 6 through Wednesday, November 8, 8:00 a.m. to 5:00 p.m.; Ernest N. Morial Convention Center.

Do you need qualified scientists to fill staff needs? Or are you looking for employment in the earth sciences fields? If so, you are invited to participate in the GSA Employment Interview Service.

All interested organizations seeking qualified earth scientists to fill staff needs are urged to submit notices of their vacancies and their requests for computer listings of applicants in advance of the meeting. The minimum fee for a printout of two specialty listings is \$150.

Interview booths may be reserved at the meeting in half-day increments for a nominal fee. GSA staff will handle all interview scheduling with Employment Service applicants.

Many job seekers have found the Employment Interview Service critical to their successful search for positions. The one-year registration fee is \$30 for GSA Members and Student Associates; it is \$60 for nonmembers. This applicant fee also includes the interview service at the annual meeting.

Applicants who sign up with the Employment Service by August 30, 1995, will be included in the information that employers receive prior to the meeting, so submit your forms early to receive maximum exposure, and remember to indicate on your application form that you would like to interview in November.

For additional information or forms, contact T. Michael Moreland, Membership Services Manager, GSA headquarters, (303) 447-2020, extension 115; E-mail: tmorelan@geosociety.org. Information is also available on the World Wide Web. The Universal Resource Locator (URL) is <http://www.aescon.com/geosociety/index.html>; check under the Membership section.



GSA also offers a program for K-12 teachers. Photo by Bill Cronin.

Educational Programs for K-16 Teachers, Graduate Students, and Scientists

GSA invites K-16 earth science teachers, graduate students, and scientists to New Orleans for an exciting program designed around dynamic earth and space science topics. Workshops and technical sessions especially designed by and for K-16 teachers are offered. Workshops are hands-on and inquiry based. Teachers are also encouraged to attend other symposia and theme sessions in the technical program as well as field trips throughout the meeting and to browse in the exhibits area.

The preregistration fee for K-12 teachers is \$25. The on-site registration fee is \$35. A limited number of scholarships are available to K-12 teachers to help offset meeting expenses. Appropriate ID is necessary. Preregistration for field trips and limited-enrollment events is required. For registration materials and additional information, contact the Educational Programs Department, GSA headquarters, ext. 162; or Marilyn Saponara, Bonnabel High School, 8800 Bruin Dr., Metairie, LA 70003; or Bill Craig, Dept. of Geology and Geophysics, University of New Orleans, 2000 Lakeshore Drive, New Orleans, LA 70148.

TECHNICAL PROGRAM

Symposia and Theme Sessions are subject to scheduling by the Joint Technical Program Committee in August. Consequently, days and times may change. See September *GSA Today* for the final technical program schedule.

Building Bridges Over Troubled Waters: Identifying, Educating, Recruiting, and Retaining the Stakeholders in Earth Science and Environmental Justice Issues
See Invited Papers, Symposium S2, page 115.

Scholarship in the Geosciences—Beyond Academia
See Invited Papers, Symposium S24, page 116.

Assessing Teaching and Learning
See Invited Papers, Symposium S25, page 116.

Environmental Issues Across the Geoscience Curriculum See Volunteered Papers, Theme Topic T45, page 118.

Making Connections: Ties Between K-12 and University Education See Volunteered Papers, Theme Topic T46, page 118.

Field Cooking Techniques Open Symposium: Call For Recipes

**Deadline for Recipes:
Extended to August 1, 1995!**

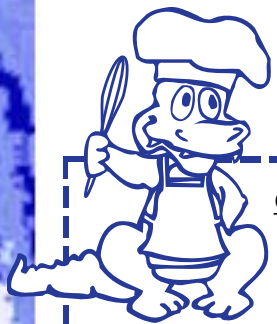
In recognition of New Orleans, a city famous for its cuisine, GSA announces its first cooking contest. Geoscientists have learned to produce meals under less than ideal conditions in a variety of field situations. We are aware of methods ranging from automotive techniques (also known as radiator cookery) to the Davy Crockett living-off-the-land approach. Deer rifles, jeeps, and campfires will not be allowed in the convention center, so we have chosen to limit the contest to one common field situation: the problem

of eating well when only nonperishable food, such as anything that will survive in a normal climate without refrigeration for one week or more, is available—for

example, canned and dried foods, plus other foods like onions, carrots, potatoes, etc.

We are soliciting recipes in two forms: poster and oral. **Poster** format is a recipe only (to be published in a cookbook). You are encouraged to make as many poster presentations as you please and need not follow the strict rules of the contest (e.g., we will allow strange cooking techniques, road kill recipes, etc.). **Oral** format (limited to one per entry) is a recipe to be considered for judging and tasting at a cookoff competition held at the convention center and will be subject to a review by a cookoff committee. A select group of 10 (minimum) entries will be chosen for a cookoff during the Annual Meeting. A prize will be awarded for the top two entries. Entry is \$7 and includes the final cookbook.

Your recipe(s) should be submitted on a Cook-Off Form by August 1, 1995. For further information, contact Terry Pavlis, University of New Orleans, Dept. of Geology and Geophysics, 2000 Lakeshore Drive, New Orleans, LA 70148; (504) 286-6797; E-mail: tpavlis@geology.uno.edu, or Kathy Lynch, GSA headquarters, E-mail: klynch@geosociety.org.



Contest Entry Form— Open Symposium on Field Cooking Techniques

Author Name (cook) _____

Institution/Affiliation _____

Address _____

Daytime Telephone (_____) _____ Fax (_____) _____

E-mail address: _____

Cost for Entry Submission/Author: \$7 (includes the cookbook).

Payment by Check or Charge: MasterCard Visa American Express

Card # _____ Expires _____

Recipe Titles Submitted (only one in oral presentation format):

- | | |
|--|--|
| 1. _____
<input type="checkbox"/> Oral <input type="checkbox"/> Poster (for cookbook) | 3. _____
<input type="checkbox"/> Poster (for cookbook) |
| 2. _____
<input type="checkbox"/> Poster (for cookbook) | 5. _____
<input type="checkbox"/> Poster (for cookbook) |
| 4. _____
<input type="checkbox"/> Poster (for cookbook) | |

Attach your camera-ready recipes on one 8½ × 11 in. sheet, single spaced. Type should be 12 point. We reserve the right to reject any recipe dealing with illegal substances or potentially health threatening ingredients (e.g., roadkill older than several days will not be acceptable as "nonperishable ingredients").
Please enclose payment at time of submission.

MAIL TO:

Kathy Lynch, GSA Cook-off, P.O. Box 9140, Boulder, CO 80301-9140

FIELD TRIPS

Geology of New Orleans: Urban Geology
Sunday, November 5, 9:00 a.m. to 12:00 noon. J. O. Snowden, Office of the Dean, College of Science and Technology, Southeast Missouri State University, Cape Girardeau, MO 63701, (314) 651-2163; and James B. Rucker, Dept. of Geology and Geophysics, University of New Orleans, New Orleans, LA 70148, (505) 286-6325. Minimum: 10. Maximum: 30. No fee. NOTE: Participants meet at the Department of Geology and Geophysics, University of New Orleans. For those coming from downtown, a van will depart from the Hyatt at 8:30 a.m.

A short, illustrated introduction on the geology of New Orleans will be followed by a van trip through New Orleans neighborhoods, illustrating the local geology and the effects of drainage-induced subsidence.

Urban Stormwater in New Orleans: Pumping Station Tour

Monday, November 6, 9:00 a.m. to 12:00 noon. Anne Rheams, Lake Ponchartrain Basin Foundation, P.O. Box 6965, Metairie, LA 70009-6965, (504) 836-2205. Minimum: 10. Maximum: 25. No fee.

The New Orleans area is situated in a bowl, surrounded by levees, and is an average of five feet below sea level. The area averages 65 inches of rain per year. With all of this water, the area would flood if the water was not pumped out. Where does this water go? Directly into Lake Pontchartrain, with no treatment. That means that every time it rains, pollutants wash into Lake Pontchartrain through an elaborate urban drainage system. The field trip to a pumping station will show the system that keeps the city dry and also the problems of cleaning up the drainage water.

Engineering Geology of the New Orleans Area: Water, Water, Everywhere

Tuesday, November 7, 7:30 a.m. to 12:30 p.m. or Wednesday, November 8, 7:30 a.m. to 12:30 p.m. See Trip 6a and 6b, page 123.

Geoscience Day Field Trip

Thursday, November 9, 7:30 a.m. to 3:00 p.m. Patricia Hall, Amoco/New Orleans, P.O. Box 50879, New Orleans, LA 70150, (504) 586-6973. Pre-selected participants only.

Cultural Adaptation to Landforms in the Mississippi Delta Plain

Friday, November 10, 8:00 a.m. to 6:00 p.m. See Trip 10, page 124.

WORKSHOPS

Exploring the Solar System in the Classroom: A Hands-On Approach

Saturday, November 4, 8:00 a.m. to 5:00 p.m. See page 121.

Effective Teaching: A Workshop for Graduate Students, Assistant Professors, and Anyone Else Interested in Becoming a Better Teacher

Saturday, November 4, 8:00 a.m. to 5:00 p.m. See page 121.

Project Atmosphere

Sunday, November 5, 1:30 to 4:00 p.m. See page 122.

Preparing Successful Grant Proposals to Fund Curriculum Innovation in the Geosciences

Sunday, November 5, 1:30 to 5:00 p.m. See page 122.

Fairly Simple Exercises in Geology Designed for Teachers with Little or No Geology Background

Monday, November 6, 8:00 a.m. to 5:00 p.m. See page 122.

Seismic Sleuths: An Earthquake Curriculum for Grades 7-12

Monday, November 6, 1:00 to 4:00 p.m. See page 122.

Earth Science Information "Share-A-Thon" for K-16 Educators

Monday, November 6, 4:00 to 6:00 p.m.; Ernest N. Morial Convention Center.

You enjoyed it so much in Boston and Seattle that we've decided to offer it again in New Orleans! The share-a-thon is designed to promote the sharing of teacher-developed earth science materials and ideas with other educators. Teachers are invited to present earth science activities that they have successfully used in the classroom. Presenters will be stationed so that participants can circulate freely. Each station will have explanatory materials available. *Registration required only for presenters.* To be a presenter, please check the appropriate box on the GSA Registration Form in this announcement.

Rock Raffle

Monday, November 6, 4:00 to 6:00 p.m.; Ernest N. Morial Convention Center.

Outstanding specimens of rocks, minerals, and fossils could be yours! Come to the Rock Raffle and bid on your favorite sample. All proceeds go to the National Earth Science Teachers Association.

SOCIAL EVENTS

Geoscience Education Division Breakfast

Monday, November 6, 7:00 to 8:30 a.m.; Hyatt Regency Hotel. See Registration Form, page 134.

NAGT Luncheon

Monday, November 6, 12:00 noon to 1:30 p.m.; Hyatt Regency Hotel. See Registration Form, page 134.

Earth Science Educators Social Hour

Monday, November 6, 4:00 to 6:00 p.m.; Ernest N. Morial Convention Center.

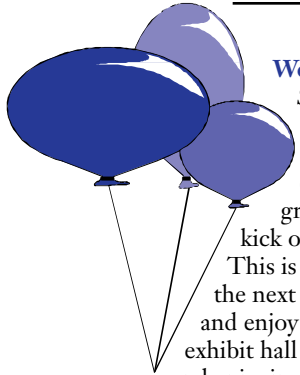
During the Rock Raffle and Share-A-Thon, mingle with your colleagues, share amusing experiences, and learn what others are doing in their classrooms.

Partners for Education Program (PEP) Reception

Tuesday, November 7, 4:30 to 6:00 p.m.; Ernest N. Morial Convention Center.

Come and enjoy a beverage from the cash bar while you meet PEP partners and see the changes in GSA's partnering program.

SPECIAL EVENTS



Welcoming Party

Sunday, November 5, 5:00 to 8:00 p.m.; Ernest N. Morial Convention Center.

Join your colleagues Sunday evening for the celebration and grand opening of the exhibit hall to kick off the 1995 GSA Annual Meeting! This is the time to meet with friends to plan the next four days of meeting activities. Relax and enjoy the musicians throughout the exhibit hall while viewing the exhibits, eating, and enjoying your favorite beverage. This is the time to experience the New Orleans tradition of "second line" entrances!

Alumni Receptions

Monday, November 6, 7:00 to 9:30 p.m.; Hyatt Regency Hotel.

Everyone knows someone at the popular Alumni Receptions. Plan to join your former classmates for an evening of memories and fun. More than 80 colleges and universities will be represented. If you would like your university to hold a reception or to

be part of the Group Alumni Party, have your department chair contact Vanessa George, Events Coordinator, GSA headquarters, ext. 133.

T.A.C. (Thursday Afternoon Club)

Thursday, November 9, 3:30 to 5:00 p.m.; Ernest N. Morial Convention Center.

T.A.C. is for the meeting survivors—for the diehards who last to the end! Come to the Poster Session area and help us say thank you and farewell to New Orleans. Beer will be available.

Awards Luncheons and Other Ticketed Meal Functions

Associated societies and GSA divisions invite their members and other interested guests to join them for their annual meal functions, special addresses, and awards ceremonies. You do not need to be registered for the meeting; everyone is welcome. Please use the Registration Form in this issue to order tickets. Location and time will appear on the ticket and in the *Annual Meeting Program*.

LOUISIANA PHILHARMONIC ORCHESTRA & DINNER

SATURDAY, NOVEMBER 4, 5:45 P.M.

Meet at the historic Fairmont Hotel two blocks from the French Quarter for a cash reception followed by a delicious dinner. We will then proceed to the Orpheum Theater, an old vaudeville hall, for an evening of classics. The program will include *Chadwick—Jubilee*, *Mozart—Symphony No. 36*, and *Mendelssohn—Symphony No. 3*, conducted by Michael Morgan. Nancy Adams of *Travel to Music* will act as hostess. You will receive further information from Nancy after you register.

Cost: \$70. Limit: 60. ♡

Dixieland GSA Jazz Jam

Saturday, November 4, 7:30 to 10:30 p.m.
Hyatt Regency Hotel, Burgundy Room



We have talent among us! If you are looking for something to do your first night in town, stop in for a relaxing, casual evening of listening or dancing to an informal Dixieland jazz jam session with colleagues. Geologist D. D. Trent will coordinate this GSA group of fine musicians. If you are interested in participating as a musician, contact D. D. Trent at (909) 621-1122. Cost: \$7 (includes music, pretzels, cash bar).

Aquarium Evening

Wednesday, November 8 • 7:00 to 10:00 p.m.

Come "face to gill" with some of the world's most exotic aquatic life at the world-class Aquarium of the Americas.

Stroll through the Amazon Rainforest exhibit lush with flora and fauna, while snakes slither and piranha prowl in their steamy jungle home. You won't want to miss the penguins, the world's only white alligator, or the collection of ominous sharks lurking beneath an oil rig replica. You can also enjoy Dixieland jazz and feast on Louisiana specialties. This impressive and distinctive glass-enclosed structure is located on the Mississippi River.

Cost: \$39 (includes transportation, admission, music, dinner, cash bar).

RIVERBOAT DINNER CRUISE

SATURDAY, NOVEMBER 4



Paddlewheeler Creole Queen.

Boarding and Buffet begin at 7:00 p.m.
Cruise 8:00 to 10:00 p.m.

Step aboard a magnificent paddlewheeler for an exciting trip down the mighty Mississippi River, back to the days when "Cotton was King." Feel the romance of the river while listening to a lively Dixieland jazz band and enjoying a delicious Creole Buffet.

Cost: \$38 (includes river cruise, buffet, Dixieland jazz band, cash bar).

GUEST PROGRAM

New Orleans is filled with many unique cultures and traditions. From the shores of Lake Pontchartrain to the banks of the Mississippi River, from crawfish étouffée to beignets and café au lait, from Bourbon Street high life to Garden District tranquility, New Orleans is like no other city. The friendly people, rich history, tantalizing food, and southern hospitality will delight you. Most everything is within walking distance, an inexpensive trolley ride, or a short taxi ride. Please join us.

Guests are invited to visit the GSA Hospitality Room, located in the Esplanade Room in the Hyatt Regency Hotel. Your hosts will be providing a resource center to help you explore *your* interests. Abundant information on New Orleans and surrounding areas will be available, as well as details on GSA tours and seminars. We will be serving light refreshments throughout the day, so please stop by. Remember to wear your GSA badge.

Sunday	1:00 p.m. to 5:30 p.m.
Monday	8:00 a.m. to 4:30 p.m.
Tuesday	8:00 a.m. to 4:30 p.m.
Wednesday	8:00 a.m. to 4:30 p.m.
Thursday	8:00 a.m. to 1:00 p.m.

GUEST WELCOMING RECEPTION

Sunday, November 5, 4:15 to 5:00 p.m.;
Hyatt Regency Hotel, Esplanade Room

Join us for a special reception to welcome you. Guest registrants, don't forget to bring the coupon enclosed in your registration materials for a complimentary glass of wine or soda. There will be a cash bar available as well. Plan to meet old and new friends in the Hospitality Room. All registrants are welcome. We will have special visitors from the Audubon Zoo! See seminars for more information on these Cajun critters.

SEMINARS

All GSA meeting attendees—guest, professional, and student registrants—are invited to attend the following seminars. There is no fee. All seminars will be at the Hyatt Regency Hotel. Stop by the Hospitality Room to find the exact room location.

Native Louisiana Animals

Sunday, November 5, 4:15 p.m. to 5:00 p.m.

Guess who's coming to the Welcoming Reception! You will see and mingle with Cajun critters native to the swamps of Louisiana handled by Debbie Pearson, an expert from the world-famous Audubon Zoo. Don't miss this!

Welcome to New Orleans

Monday, November 6, 8:15 a.m. to 8:45 a.m.

Start the week with an insightful introduction to the many unique areas to explore in New Orleans. The history of this city will amaze you, as will all there is to see and do. Join us for an overview and learn about the exciting tours and seminars GSA has planned for you. Bring your questions. Consider taking the Highlights of New Orleans tour immediately following this talk.

Mark Twain and Life Along the Mississippi

Monday, November 6, 2:00 p.m. to 3:30 p.m.

The ever-popular Phil White creates a life-size characterization of Mark Twain personally researched and scripted from original sources. Be entertained by a delightful romp through life along the Mississippi as illustrated by the anecdotes and tall tales of the famous American humorist Samuel Clemens.

What Are We Eating?

Wednesday, November 8, 1:00 p.m. to 2:00 p.m.

Want to cut the fat and not the flavor? Barbara Katzman, with Tulane Center for Cardiovascular Health, will have an analysis of some New Orleans favorites—gumbo, jambalaya, bread pudding, pralines—and then will suggest a few healthy changes that will allow us to enjoy our favorite foods without sacrificing taste. She will tell us about reading food labels, the new food pyramid chart, and how to select different oils.

FORMAL TOURS

Tours will leave the main lobby of the Hyatt Regency. Reservations for all tours will be accepted on a first-come, first-served basis, so *please* register early. Space is limited and these trips will be popular, so be sure to preregister. Our tour operator requires a guarantee several days in advance, so don't wait until you arrive in New Orleans to register for these trips. **All GSA meeting registrants are welcome to participate in any of the tours offered.**

Bayou Birding

Sunday, November 5, 6:45 a.m. to 3:00 p.m.

Bird watchers will not want to miss this opportunity to view indigenous and migratory fowl of the Louisiana Swamps. Birding enthusiast Peggy Siegert will lead you on a field excursion to Bayou Sauvage National Wildlife Refuge (over 22,000 acres, all within city limits), the Chevron Boardwalk built over a part of Honey Island Swamp, owned by the Nature Conservancy, and Ft. Pike on the edge of Lake Pontchartrain. Be prepared for sightings of herons, egrets, ducks, raptors, Eurasian collared doves, and maybe a roseate spoonbill. The excursion will be highlighted by Southern bald eagles preparing to nest.

Cost: \$23 (includes transportation, guide, and box lunch).

America's Most Interesting City

Sunday, November 5, 1:00 to 4:00 p.m.

This tour takes you through the French Quarter with a stop at Jackson Square, where the city was founded, and on through the historic French Market to Esplanade Avenue, with its elegant homes with wrought-iron lace balconies. We will stop at a unique above-ground cemetery; then continue to beautiful City Park and Lake Pontchartrain. Returning along St. Charles Avenue, we will watch historic streetcars on the oldest street railway system in the country, and pass beautiful mansions. We will circle the Superdome and learn what makes it one of the unique buildings in the world.

Cost: \$17 (includes transportation and guide).

Honey Island Swamp Tour

Monday, November 6, 8:30 a.m. to 1:00 p.m.

This boat tour, guided by wetland ecologist Paul Wagner, will venture into one of the wildest and most pristine river swamps in America, acquired by the Nature Conservancy as Louisiana's first nature preserve. There will be opportunity for nature photography and wildlife observation. Resident and migratory wildlife includes alligators, bald eagles, waterfowl, herons, egrets, ibis, owls, ospreys, deer, black bear, feral hogs, nutria, raccoons, otters, beavers, minks, turtles, and frogs.

Cost: \$37 (includes transportation, guide, and box lunch).

America's Most Interesting City, with Longue Vue Gardens and Estate

Monday, November 6, 9:30 a.m. to 1:30 p.m.

An outing that includes most of the stops of the America's Most Interesting City Tour plus a visit to the enchanting Longue Vue Gardens and Estate in the heart of New Orleans. Filled with native plants and flowers, the garden changes with the seasons. A light box lunch will be served under the tennis court pavilion. A tour of the 46-room mansion will delight the eye with magnificent antiques, collector's items, and art objects.

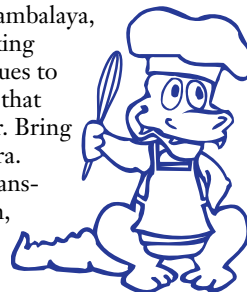
Cost: \$34 (includes transportation, guide, admission, and lunch).

Learning to Cook Creole

Tuesday, November 7, 9:30 a.m. to 1:30 p.m.

Learn first hand how to prepare the Creole cuisine that has made New Orleans famous. You will be entertained with the history and origins of Creole recipes—a combination of French, Spanish, African, and Choctaw Indian—which were adapted and borrowed from the mix of cultures that make New Orleans the "melting pot of the world." Sample such delicacies as jambalaya, and learn the secret to making pecan pralines and techniques to spice up recipes to achieve that unique New Orleans flavor. Bring your questions and a camera.

Cost: \$32 (includes transportation, guide, admission, recipes, and lunch).



Town and Country Highlights

Tuesday, November 7, 2:00 to 5:30 p.m.

Experience the New Orleans ambiance and the heritage of our ancestors with a visit to a magnificent plantation along the historic Mississippi River Road and a private Garden District mansion. You will visit San Francisco Plantation at the foot of the Mississippi River Levee—an 1854 restored structure with an exterior reminiscent of the entrance to the grand salon of a steamboat. The interior furnishings are exactly as indicated in the original owners' inventory. Returning to the city, you will stroll amidst the lush foliage of the Garden District and visit one of its grand homes. Here you will also see Lafayette Cemetery, with its above-ground burial vaults.

Cost: \$25 (includes transportation, guide, and admission).

Literary Tour of the French Quarter

Wednesday, November 8, 8:30 to 11:30 a.m.

Professor Ken Holditch from the University of New Orleans will introduce you to the literary side of the French Quarter during the tour of this historic area. We will visit the places of inspiration where William Faulkner penned his first novel, Tennessee Williams wrote *A Streetcar Named Desire*, and O'Henry began his writing career. See Madame John's Legacy and other settings of George Washington Cable's Creole stories.

Cost: \$27 (includes transportation and guide).

Mardi Gras World

Wednesday, November 8, 2:30 to 4:30 p.m.

Enjoy this exciting visit to the den of the carnival Krewes of Endymion and Bacchus, where 75 of the most elaborate and magnificent floats of Mardi Gras fame are created. You will discover what Mardi Gras is all about, where it began, what it has been, and what its future prospects are. The narration will include background on Blaine Kern, float-builder supreme, and information on how Krewes are formed, how floats are constructed, lighted, animated, and transported, and how props and figures are sculptured and painted.

Cost: \$19 (includes transportation, guide, and admission).

INFORMAL TOURS

New Orleans is an old city with a charming past that has emerged from the contributions of a rich ethnic cross section. Much of that past has been captured in the formal tours we have scheduled. For those who prefer to explore the city's charm in a less regimented atmosphere of a small group, we have identified several informal tours. These tours are either within walking distance of the Hyatt or can be reached inexpensively. The Hospitality Room will have an abundance of literature on these and other self-guided tours. We have suggested dates and times that least interfere with other Guest Program activities. To facilitate small groups of people with similar interests coming together, sign-up sheets for these tours will be in the Hospitality Room.

French Quarter Walking Tour—Sunday, 9:00 a.m. or Tuesday, 2:00 p.m. The original city constructed on the natural levee of the Mississippi River. Contains many historic residences and businesses. Allow 2–3 hours.

Antiquing Along Magazine Street—Tuesday, 9:00 a.m. Six blocks of antique shops with varied themes, art galleries, restaurants, and specialty shops. Allow half a day.

Trolley Ride Along St. Charles Avenue

Wednesday, 9:00 a.m. Ride on the world's oldest continuously running street car past the luxurious mansions of old New Orleans. Detailed guide material available. Allow 3 hours.

City Park and the New Orleans Museum of Art—Thursday, 9:30 a.m. Stroll through the greenery of City Park and its lagoons. Prime attractions are the New Orleans Museum of Art and the Botanical Gardens. Allow half a day.

EXHIBITS

Bridging the Gulf with the Latest in Products and Services

Ernest N. Morial Convention Center, Exhibit Hall A

Enjoy the excitement in the exhibits area. You will not find a wider variety of displays, all geared to the geosciences, than at this meeting. Browse the exhibits during the Welcoming Party on Sunday evening. If you can't see it all then—three more days await you.

The exhibitors will be eager to show you their vast array of

products and services. See demonstrations of state-of-the-art computer, instrumentation, microanalysis, camera, and field equipment. Shop for fossils, gemstones, and mineral specimens! Purchase books, learn about the latest projects of governmental agencies, and visit with major universities about their programs.



Photo by Bill Cronin.

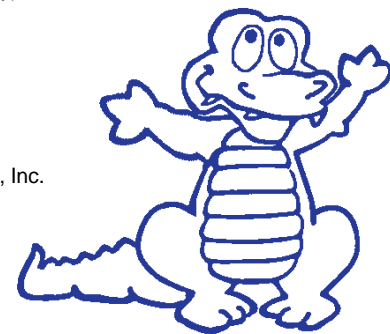
CONVENIENT EXHIBIT HOURS

Sunday	Monday	Tuesday	Wednesday	Thursday
November 5	November 6	November 7	November 8	November 9
5:00 p.m.–8:00 p.m.	9:00 a.m.–5:00 p.m.	9:00 a.m.–5:00 p.m.	9:00 a.m.–4:00 p.m.	CLOSED

MEETING EXHIBITORS

(as of 5/16/95)

Academic Press	EOSAT	Kluwer Academic Publishers	University of Idaho
Activation Labs	ESRI	Komodo Dragon	University of Memphis/USGS
American Association of Petroleum Geologists Bookstore	Finnigan MAT	Krueger Enterprises/Geochron Labs	University of New Orleans
American Geological Institute	Fisons Instruments	Magellan Systems Corporation	University of Oklahoma
American Geophysical Union	Florida Geological Survey	McGraw-Hill, Inc.	University of Wyoming
American Institute of Hydrology	Forestry Suppliers, Inc.	Mineralogical Society of America	U.S. Department of Energy—Yucca Mountain Project
American Institute of Professional Geologists	FriendShip Publications	MJP Geopacks	U.S. Department of Energy—Environmental Management Program
<i>American Journal of Science</i>	Gems and Jewelry	Mountain Press Publishing Company	U.S. Geological Survey
Arjobex America	General Supply Corporation	National Association of Geology Teachers	W.H. Freeman & Company
ASC Scientific	Geochemical Society	National Earth Science Teachers Association	Washington State University
Association of Engineering Geologists	Geographics	Nature's Own	West Publishing Company
Association for Women Geoscientists	Geological Association of Canada	Oklahoma Geological Survey	Westbay Instruments
Baylor University	Geological Society of America—Archaeological Division	Olson, Donald K. Minerals	Wildlife Supply Company
Ben Meadows Company	Geological Society of America—Bookstore	Oxford University Press	Wiley & Sons, Inc.
Blackwell Science	Geological Society of America—Combined Publishers Display	Paleontological Research Institute	Williams & Heintz Map Corporation
Cal Graeber Minerals	Geological Society of America—Foundation	Paleontological Society	Wm. C. Brown Publishers
Cambridge University Press	Geological Society of America—Geology & Public Policy Committee	Philips Electronic Instruments Company	Worth Publishers
Center for Coastal, Energy & Environmental Resources	Geological Society of America—International Division	Plenum Publishing Corporation	Wright State University
Chapman & Hall	Geological Society of America—Journals on CD-ROM	Prentice Hall	XRAL Laboratories
ChemPet Research Corporation	Geological Society of America—SAGE Program	Princeton University Press	Yale University Press
Colorado School of Mines	Geology Stuff	Rigaku/USA, Inc.	
Columbia University Press	Geoscience Information Society	RockWare, Inc.	
Crystal Mark	Hessler Technical Services	Saunders College Publishing	
Cushman Foundation for Foraminiferal Research	Howard Minerals	Scintag, Inc.	
D.C. Heath & Company	Ikon Mining	SEPM (Society for Sedimentary Geology)	
Deltech, Inc.	Indus International, Inc.	Sigma Gamma Epsilon	
Desert Research Institute	International Association of Hydrogeologists	Society of Economic Geologists	
Dorling-Kindersley Family Library	JCPDS-ICDD	Spectrex Corporation	
<i>Earth Magazine</i>	J.L. Darling Corporation	SPEX Sample Preparation	
<i>Earth Observation Magazine</i>	Joint Oceanographic Institutions	SPI Supplies Division—Structure Probe, Inc.	
Earth'nWare, Inc.	Kendall/Hunt Publishing Company	Springer-Verlag New York, Inc.	
Economic Geology Publishing Company		Tasa Graphic Arts, Inc.	
Elsevier Science Publishing Company, Inc.		THE Company	
Encyclopaedia Britannica		UIC, Inc.	
		University of Chicago Press	
		University of Georgia	



Food and Beverage Service Available During All Exhibit Hours

TRAVEL

Getting To New Orleans

By Air. New Orleans International Airport is located 13 miles from downtown. It is served by most major airlines. GSA's official travel agent, **Travel King East**, has negotiated discounted airfares with the major New Orleans carriers: United, Continental, and Delta. Travel King is committed to obtaining the best possible fare and will guarantee it. Call *today* for the best availability.

To make a reservation, call Travel King at 1-800-458-6398 and identify yourself as a GSA traveler. Tickets can be paid for by check or major credit card, or invoiced to your company. Final payment must reach Travel King no later than 10 days prior to departure to allow for mailing time. After tickets are issued, you are protected from fare *increases*; if a fare *decreases*, call Travel King for an adjustment.

As with all airline reservations, please use caution regarding change and cancellation penalties that accompany low-fare tickets. This applies especially to field trip and continuing education participants, whose trip or course may be canceled after the September 29 preregistration deadline. In general, advance bookings with Saturday night stayovers are the best route to lowest fares. Travel King is able to waive the Saturday night stayover requirement in many cases.

By Car. Interstate Highways 10, 59, and 55 lace through downtown New Orleans.

By Train or Bus. With connections to all major cities, the Amtrak Union Passenger Terminal is located in the central business district at 1001 Loyola Avenue; telephone 1-800-872-7245. The Greyhound Trailways bus line is also located in the Union Passenger Terminal at 1001 Loyola Avenue; telephone (504) 525-4206.

STUDENT TRAVEL GRANTS

The GSA Foundation has awarded matching grants up to a total of \$3500 each to the six GSA sections. The money, when combined with equal funds from the sections, is used to assist GSA Student Associates traveling to the 1995 Section Meetings and to the Annual Meeting in New Orleans. For applications, contact your Section Secretary.

Cordilleran	Bruce Blackerby, (209) 278-2955
Rocky Mountain	Ken Kolm, (303) 273-3932
North-Central	George Hallberg, (319) 335-4500
South-Central	Rena Bonem, (817) 755-2361
Northeastern	Ken Weaver, (410) 554-5532
Southeastern	Harold Stowell, (205) 348-5098

Call
TRAVEL KING
Today!

(official travel agency for the New Orleans meeting)

You could win a TRIP (AIR & HOTEL) for 2 TO LAS VEGAS!

Book your New Orleans ticket through Travel King and your name will be entered into a drawing to be held November 30th.

1-800-458-6398 toll free
(303) 776-2270
collect from outside U.S.
Fax 303-776-5170

8:30 a.m.-5:30 p.m. MST, Monday thru Friday;
10:00 a.m.-2:00 p.m. Saturday

SPECIAL AIR DISCOUNTS FOR THE GSA MEETING!

Getting to Your Hotel

Airport Shuttle. This is GSA's official transportation company, providing the most economical and convenient airport shuttle service to and from all major downtown hotels. Tickets can be purchased 24 hours a day for \$10 each way from the Airport Shuttle Desks, located near the baggage claim. Buses and minivans depart from outside the baggage claim level every 15 minutes. When booking, be sure to tell them you are with GSA to get this discounted rate. For information call (504) 592-0555.

Taxicabs. Service to and from the airport and within the city is easy. Taxicab stands are located throughout the city, or you can hail a cab on any major street. Taxicabs cost a minimum of \$1.70 and \$.20 for each 1/5 mile or forty (40) seconds. Each additional passenger is \$.50. For cabs originating at the airport, add toll fees and an additional \$1. Approximate cost from the airport to downtown is \$21 for up to two people.

Car Rental. Alamo is the official car rental agency for the meeting. Identify yourself as a GSA delegate by giving Group ID number 85204 and Plan Code GR to get guaranteed, discounted, daily/weekly rates as follows: economy \$30/\$119; compact \$33/\$129; mid size \$37/\$139; full size \$39/\$179; luxury \$55/\$299. An additional convention discount may be available by having your Alamo agent check Rate Code 9G. Rates include unlimited mileage. An Alamo rental counter is located on the baggage claim level at the airport. Look for the blue and yellow Alamo vans. Advance reservations are recommended. Call Alamo at 1-800-732-3232.

Getting Around in New Orleans

GSA Shuttle. GSA will be providing a daily shuttle beginning Sunday from 7:00 a.m. to 9:00 p.m. from hotels outside the French Quarter to the Convention Center. It is easy to get around on foot, but you should plan for a vigorous walk from downtown hotels to the Convention Center. Refer to the hotel descriptions and the map for distances and GSA shuttle stops. Safety is a major concern in New Orleans, so please check with your hotel concierge to see if your destination would be a safe walk. You are also encouraged to use the reliable and inexpensive public transportation systems. If you have special needs to accommodate a disability, please contact Becky Martin, GSA headquarters, ext. 164.

Metropolitan Transit. The RTA operates an extensive bus and streetcar transit system, connecting most areas of metropolitan New Orleans. Exact bus fare required: \$.80, transfer \$.10. In the downtown area a shuttle connects the convention center with major hotels and the French Quarter. Fare: \$.30. Most operate 24 hours a day.

Streetcar. The Riverfront Streetcar connects the convention center, riverfront attractions, and the French Quarter. Fare: \$1. Rates, routes, and further information are available by calling (504) 569-2697. Check with your hotel concierge desk for information and drop-off points.

CRUISE VACATION

New Orleans is home port for **passenger liners** that cruise the Gulf of Mexico and the Caribbean. D.M.I. Travel Agency in New Orleans offers several seven-day cruise packages that start as low as \$599 per passenger, based on double occupancy. If you are interested, contact Bobbe Petreikis at (504) 592-0511 today! Be sure to mention GSA to get a discount.

GSA 1995 Convention Hotels

Please make your reservation with the New Orleans Housing Bureau to get the GSA convention rates. *Note: All rooms are subject to an 11% tax and a \$1-3 per night occupancy tax.*

1 Hyatt Regency New Orleans (Headquarters)

Poydras Plaza
(504) 561-1234
650-room block
13 blocks from the Convention Center
Single \$138, Double \$153

GSA's social and business functions will be held here. The Hyatt captures the flavor of the Crescent City with rich mahogany, beautiful guest rooms, and wrought iron grill-work crafted by regional artisans. Rooms surround a beautiful 27-story open atrium. You can expect excellent Hyatt service, convenience, and comfort. Savor famous New Orleans cui-

sine in your choice of five restaurants and lounges. The Courtyard specializes in regional dishes with a Cajun flair. Enjoy casual fare and friendly competition in Hyttops sports bar. Take in the spectacular sweeping view from Top of the Dome, the city's only revolving rooftop restaurant, where regional cuisine is the specialty. The health club offers the latest equipment, a large heated swimming pool, and a whirlpool spa. The hotel is adjacent to the Superdome and New Orleans Centre shopping mall, which features Macy's, Lord & Taylor's, and dozens of other fine stores. There is free Hyatt shuttle service to the French Quarter and Convention Center. Self and valet parking are available for \$10 and \$12, respectively.

2 Holiday Inn Superdome

330 Loyola Avenue
(504) 581-1600
200-room block
10 blocks from the Convention Center
Single \$95, Double \$95

This 18-story modern hotel is a blend of economy and comfort, offering pleasant, spacious guest rooms, each with its own balcony. Dine in the Holiday Streetcar Restaurant, which serves classic Creole and American cuisine, or relax in the Mardi Gras Lounge. The landscaped rooftop terrace has a heated swimming pool. Start the day with complimentary morning coffee. Indoor self parking is \$10.

3 Radisson Hotel

1500 Canal Street
(504) 522-4500
450-room block
13 blocks from the Convention Center
Single \$74, Double \$84

This recently renovated 18-story landmark hotel is a classic value with a reasonable price. Listed in the National Register of Historic Places, the hotel's lobby and restaurants show off traditional Southern ambiance. Enjoy a casual breakfast, luncheon buffet, or dinner in Praline's Restaurant. LaSalle's Restaurant and Lounge features specialty items indigenous to New Orleans. Relax in the rooftop pool or hot tub next to the sun terrace, or work out in the health club with Universal exercise equipment. Complimentary Radisson shuttle to the French Quarter and Convention Center. Valet parking is \$13.44.

HOTELS



GSA has booked rooms at 11 properties that offer special convention rates. They include a cross section that should suit a variety of tastes and budgets. Activities will take place at the Ernest N. Morial Convention Center, as well as GSA's headquarters hotel, the **Hyatt Regency Hotel**, and the Doubletree Hotel. The Hyatt Regency is a first-class property for accommodations and service.

The key to getting your first choice is to make your reservation early. Because November is one of the busiest months for tourism in New Orleans, we highly recommend that GSA meeting attendees get their reservations in as early as possible. Convention hotels will fill quickly. All hotel reservations must be processed by the New Orleans Housing Bureau to get the special discounted GSA rate.

TO MAKE YOUR HOTEL RESERVATION

Fill out the Official Housing Request Form and either mail, fax, or phone it into the New Orleans Housing Bureau. See the form for the address, fax, and phone number. All reservations must be RECEIVED BY FRIDAY, OCTOBER 6. From the October 6 deadline until October 13, the Housing Bureau will continue to accept reservations, *but rooms will be on a space-available basis only*. Most properties will be full by this time; therefore, it is important that you make your reservation early. If you are interested in a suite, please call the hotel of your choice directly for information and to make your reservation.

AFTER Friday, October 13, you should contact the GSA hotel of your choice directly, or you may contact the Housing Coordinator at GSA headquarters for information on hotel availability. Note that most hotels **will be filled** by October 6, and hotels will only be able to offer the special GSA rate on an as-available basis. *Under no circumstance should they be offering a room at a higher rate.*

ASSIGNMENT

Hotel rooms will be assigned on a first-come, first-served basis. Please list your first six hotel choices in order of your preference. If the hotels you have chosen are full, the Housing Bureau will review your selection preference. Be sure to mark either (1) proximity to convention center or (2) comparable room rate. You will receive a confirmation from the Housing Bureau with your hotel assignment. Check all information carefully for accuracy, including arrival date, departure date, and deposit information. If you do not receive a confirmation within two weeks, contact the Housing Bureau to check the status of your reservation. You will not receive a confirmation from your hotel until *after* October 13.

ROOM DEPOSITS

Reservations must be guaranteed. A \$100 deposit is required to make your reservation, assuring you


that no matter what time you arrive on your scheduled arrival day, your room will be held until 6:00 a.m. the following morning.

Deposits can be made by providing credit card information or by sending payment directly to the GSA Housing Bureau. The Housing Bureau will accept only Visa, MasterCard, and American Express credit cards. Your credit card will be charged when you make your reservation.

CHANGES AND CANCELLATIONS

Changes and cancellations BEFORE Friday, October 13, should be communicated to the Housing Bureau. AFTER October 13, you should contact the hotel directly with any changes. Please note that a cancellation notice must be received by the hotel AT LEAST 72 hours in advance to receive a refund on your deposit. The hotel has the right to keep your \$100 deposit if you fail to properly cancel a confirmed reservation.

SPECIAL NEEDS

 The Americans with Disabilities Act ensures that barrier-free hotel rooms will be available to GSA registrants. Those with special needs should specify this on the Housing Form. After inspecting all GSA properties, we recommend that disabled registrants consider the Crowne Plaza Hotel or Embassy Suites, which are close to the convention center and fully accessible. The Hyatt Regency is also accessible but would require riding the shuttle. For questions, please contact Becky Martin, GSA headquarters, ext. 164.

STUDENT HOUSING

Outside of the downtown area in the Garden District on the historic St. Charles Avenue streetcar line, reasonably priced rooms have been reserved. Convenient public streetcar transportation can get you to the convention center. The streetcars are safe and will take approximately 20–25 minutes. **Make your reservation for these properties on the**

Housing Request Form, except for the Ramada Inn. You must call the Ramada directly and mention GSA to get the discounted rate listed below.

Quality Inn Maison (12) \$89 (1–4 people)
20 rooms blocked
1319 St. Charles Avenue
New Orleans, LA 70130
(504) 522-0187

Declared a historical property by the U.S. Department of Interior, with five antebellum suites and several courtyards. Restaurant, lounge, pool, jacuzzi. Parking is \$6.

The Pontchartrain (13) \$75 (1–2 people)
35 rooms blocked \$80 (3 people)
2031 St. Charles Avenue \$85 (4 people)
New Orleans, LA 70130
(504) 524-0581

Set amid beautiful old mansions, this quaint property was fully restored in 1991. The European-style hotel is home to the locally famous Caribbean Room restaurant. For casual breakfasts and lunches, Cafe Pontchartrain is a favorite, while the Bayou Bar lends atmosphere for drinks. Valet parking is \$10.

Avenue Plaza Hotel (14) \$89 (1–4 people)
60 rooms blocked
2111 St. Charles Avenue
New Orleans, LA 70130
(504) 566-1212

The Avenue Plaza Hotel features a rooftop sun-deck with hot tub, courtyard heated swimming pool, 18th century antebellum home, and European spa, health club, and beauty spa. Some rooms feature wet bar, coffee maker, and refrigerator.

Ramada Inn* (15) \$79 (1–4 people)
40 rooms blocked
2203 St. Charles Avenue
New Orleans, LA 70140
(504) 566-1200

(* Call Ramada direct; do not use housing form.)

This small hotel of 130 rooms has a full-service restaurant, lounge, and room service. The comfortable family restaurant serves lunch, breakfast, and dinner featuring fresh Louisiana seafood and Creole favorites. Valet parking is \$6.

ALTERNATIVE LODGING

Beating the high cost of lodging is a priority for GSA.

- Check your library copy of the *Hotel and Motel Redbook*, which lists metro properties. Because of the hundreds of properties in the area, GSA cannot provide a complete list.
- Call 1-800-555-1212 or check the Yellow Pages to learn the 800 number for your favorite hotel chains, such as Super 8 Motel or Comfort Inn, which have properties outside the downtown area. You will need to provide your own transportation.

4 Chateau Sonesta Hotel
800 Iberville Street
(504) 553-2339
125-room block
10 blocks from the
Convention Center
Single \$110, Double \$110

The Chateau Sonesta is a new property, which opened in April this year. This charming and distinctive French Quarter hotel is a complete restoration and reconfiguration of the historic Holmes Department Store building, constructed in 1849. This New Orleans landmark closed in 1989. The new exterior has been restored to the building's neoclassic design. Many of the rooms have balconies overlooking either Bourbon Street or the interior pool and tropical courtyard. The La Chatelaine Restaurant serves French, Creole, and traditional cuisine. The Clock Lounge is a fun place to relax for a cocktail. Indoor parking is \$14 per day.

5 Bourbon Orleans Hotel
717 Orleans Avenue
(504) 523-2222
150-room block
15 blocks from the
Convention Center
(Please note that the closest GSA shuttle stop is 5 blocks from the hotel.)
Single \$105, Double \$115

Located in the French Quarter, this English-style hotel with Southern hospitality captures the soul and grace of 19th century New Orleans. From individual balconies, experience the hustle and bustle of the street or the tranquility of the inner courtyard overlooking the swimming pool. All rooms feature Chippendale and Queen Anne furnishings, marble bath, two telephones, coffee maker, and morning newspaper. The lobby lounge serves complimentary hors d'oeuvres nightly. Full meal service is available in the hotel restaurant or through 24-hour room service. Valet parking is \$12.

6 Hotel Monteleone
214 Royal Street
(504) 523-3341
100-room block
9 blocks from the
Convention Center
Single \$112, Double \$112

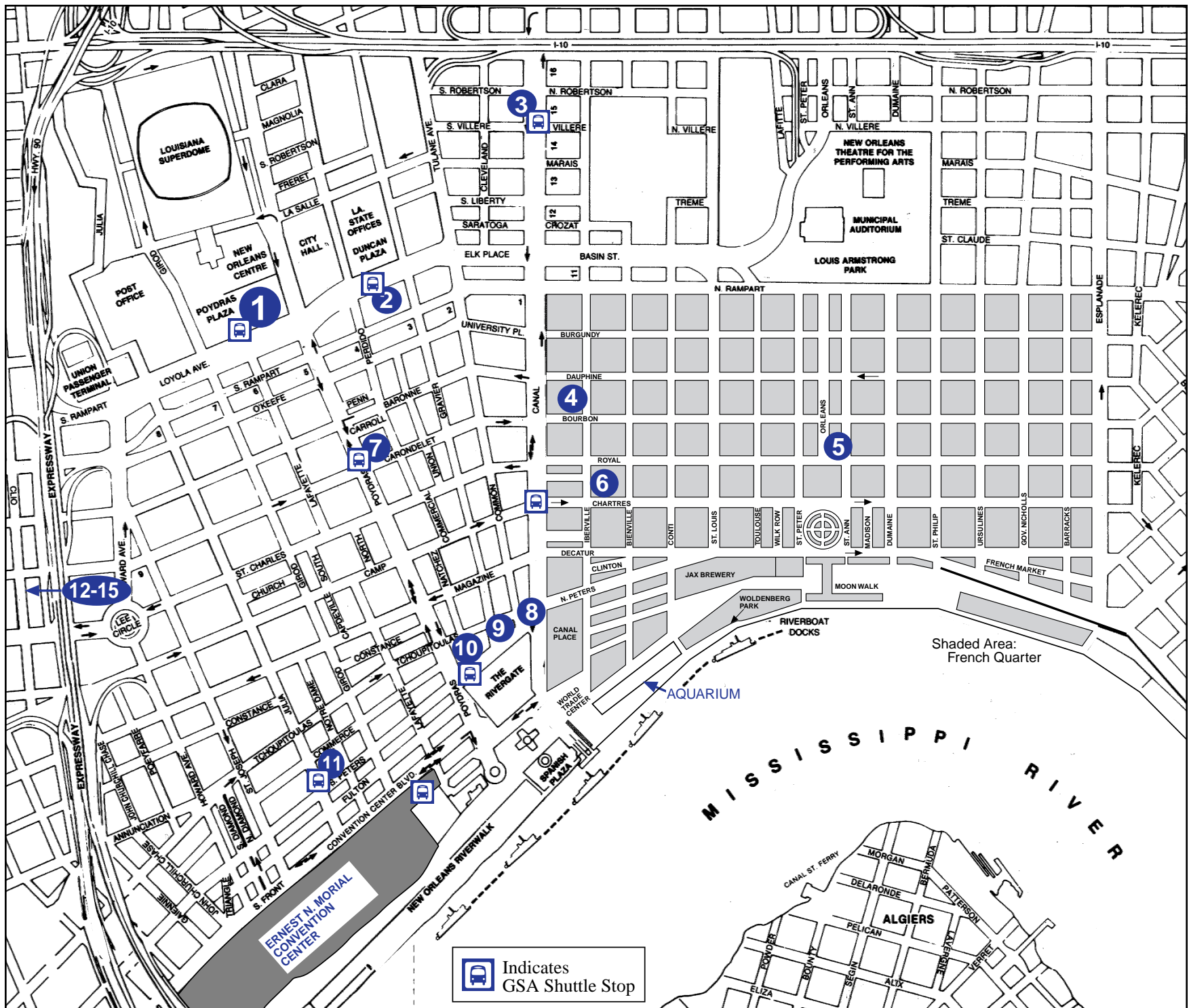
While the building's facade and main interior reflect the hotel's grand past, the newly renovated guest rooms have all the modern conveniences. Maintain a healthy life style in the health club, which includes a new exercise facility and a rooftop patio with heated pool and a bird's-eye view of the Mississippi River. For breakfast, lunch, or dinner you will want to drop by LeCafe for local fare in a casual atmosphere. The Aft-Deck Oyster Bar offers friendly service and seafood specialties. This is the largest full-service hotel in the French Quarter, complete with everything from a business center to a beauty salon. Parking is \$10 per day with in and out privileges.

7 Le Pavillon Hotel
833 Poydras Street
(504) 581-3111
150-room block
10 blocks from the
Convention Center
Single \$105, Double \$120

European grandeur in the New Orleans Business District since 1907. The historic Le Pavillon lobby is highlighted with magnificent crystal chandeliers and Italian marble floors. Beautifully appointed guest rooms, with American and European antique furnishings and original artwork complements the ornate architecture on all guest floors and in public areas. The hotel offers a full-service restaurant open for breakfast, lunch, and dinner, heated rooftop pool and patio, fitness center, and complimentary peanut butter and jelly sandwiches served in the lobby nightly. Valet parking is \$11 per day with in and out privileges.

GSA Convention Hotel Rates

	Single	Double	Triple	Quad		Single	Double	Triple	Quad
1 Hyatt Regency New Orleans (headquarters)	\$138	\$153	\$168	\$183	8 Doubletree Hotel	\$115	\$115	\$135	\$135
2 Holiday Inn Superdome	\$ 95	\$ 95	\$ 95	\$ 95	9 Windsor Court Hotel	\$195	\$195	n/a	n/a
3 Radisson Hotel	\$ 74	\$ 84	\$ 94	\$104	10 Crowne Plaza Hotel	\$117	\$117	\$127	\$137
4 Chateau Sonesta Hotel	\$110	\$110	\$110	\$110	11 Embassy Suites	\$115	\$115	\$115	\$115
5 Bourbon Orleans Hotel	\$105	\$115	\$115	\$115	12 Quality Inn Maison (students only)	\$ 89	\$ 89	\$ 89	\$ 89
6 Hotel Monte Leone	\$112	\$112	\$112	\$112	13 The Pontchartrain (students only)	\$ 75	\$ 75	\$ 80	\$ 85
7 Le Pavillon Hotel	\$105	\$120	\$120	\$120	14 Avenue Plaza Hotel (students only)	\$ 89	\$ 89	\$ 89	\$ 89
					15 Ramada Inn (students only)	\$ 79	\$ 79	\$ 79	\$ 79



8 Doubletree Hotel
300 Canal Street
(504) 581-1300
100-room block
4 blocks from the
Convention Center
Single \$115, Double \$115

This 17-story hotel offers spacious guest rooms designed for comfort and relaxation. For meals, sample the quiet charm of country French ambiance at the Chicory Rotisserie and Grille, where you can sample delicious New Orleans specialties and rotisserie fowl, seafood, and roasts. To unwind after a long day, try the Chicory Lounge, the fitness center, or the outdoor pool and deck on the fourth floor. The famous Doubletree chocolate chip cookies will be delivered to your room your first night. Valet parking is \$12 per day.

9 Windsor Court Hotel
300 Gravier Street
(504) 523-6000
25-room block
4 blocks from the
Convention Center
Single \$195, Double \$195

This is the first and only AAA Five Diamond hotel in New Orleans, offering unsurpassed service and luxury. Experience the Old World charm and ambiance of a small European-style hotel. Elegant furnishings include fine 17th, 18th, and 19th century works of art. The five-diamond restaurant, The Grill Room, has been rated highly by local and national critics. The hotel's main entrance is a courtyard glowing with lush New Orleans foliage and a sparkling fountain. The health club features the latest workout equipment, steamroom, sauna, whirlpool bath, and an oversized outdoor pool. Valet parking is \$15 daily.

10 Crowne Plaza Hotel
300 Poydras Street
(504) 525-9444
150-room block
3 blocks from the
Convention Center
Single \$117, Double \$117

This 23-story modern high-rise hotel offers friendly service and reasonable prices, and it's convenient to everything. Gleaming brass welcomes you in the lobby, and the rooms are clean and comfortable, with such added niceties as hairdryers, irons, and coffee makers. For meals, the Krewe Cafe and Lounge prepares Creole cuisine by one of the finest chefs in New Orleans. For more casual fare, try the Deli Espresso, which offers a variety of dishes, or you can call room service. Stay fit using the exercise facility and outdoor pool. Self and valet parking are available for \$8 and \$12, respectively.

11 Embassy Suites
315 Julia Street
(504) 525-1993
175-room block
2 blocks from the
Convention Center
Single \$115, Double \$115

Located in the Warehouse District, this is the only all-suite facility downtown. The nightly rate includes a full American buffet breakfast and a two-hour cocktail reception, both served daily in the six-story atrium beside a cascading fountain. Standard suites include master bedroom, balcony, separate living room, wet bar, refrigerator, and coffee maker. The Sugarhouse Restaurant serves American, Creole, and Cajun cuisine for lunch and dinner. The outdoor pool and jacuzzi might tempt you. Self parking is \$10 per day.

HOUSING FORM



GSA Annual Meeting, November 6-9, 1995

Complete this form, then mail, fax, or phone to:

Mail: GSA HOUSING BUREAU
1520 Sugar Bowl Drive
New Orleans, LA 70112

Phone: 1-800-345-1187 (U.S. and Canada)
1-504-566-5005 (International)
Fax: 1-504-522-6123

**HOUSING
DEADLINE:
OCTOBER 6**

Please do not duplicate this reservation, by phoning, faxing *and* mailing this form. Please read all hotel information prior to filling out this form. Reservations are processed on a first-come, first-served basis. If more than one form is required, this form may be photocopied. Confirmations will be sent by mail. Be sure to keep a copy for your records.

NAME OF OCCUPANT

First Name _____ M.I. _____ Last Name _____

Company Name _____

Street address or P.O. Box Number _____

City _____ State _____ U.S. ZIP code _____

Country _____ Area Code _____ Daytime Phone Number _____

Arrival Date: _____ **Time:** _____ a.m./p.m. **Departure Date:** _____ **Time:** _____ a.m./p.m.

TYPE OF ACCOMMODATION: (Please check required room type)

Single 1 person, 1 bed **Double** 2 people, 1 bed **Double/Double** 2 people, 2 beds **Triple** 3 people, 2 dbl. beds **Quad** 4 people, 2 dbl. beds

Special Needs: Non-Smoking Room
 Special Room Requirements _____

HOTEL PREFERENCE:

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

If all six requested hotels are unavailable, please process this reservation form according to:

Comparable Room Rate Proximity to Convention Center

RESERVATION DEPOSIT:

All reservations must be accompanied by a \$100 (U.S. funds) deposit. You may guarantee your reservation by providing credit card information below, or by mailing a check to the Bureau payable to GSA Housing Bureau.

Name as it appears on card _____

Card Type _____ Card No. _____ Card Type _____ Exp. Date _____

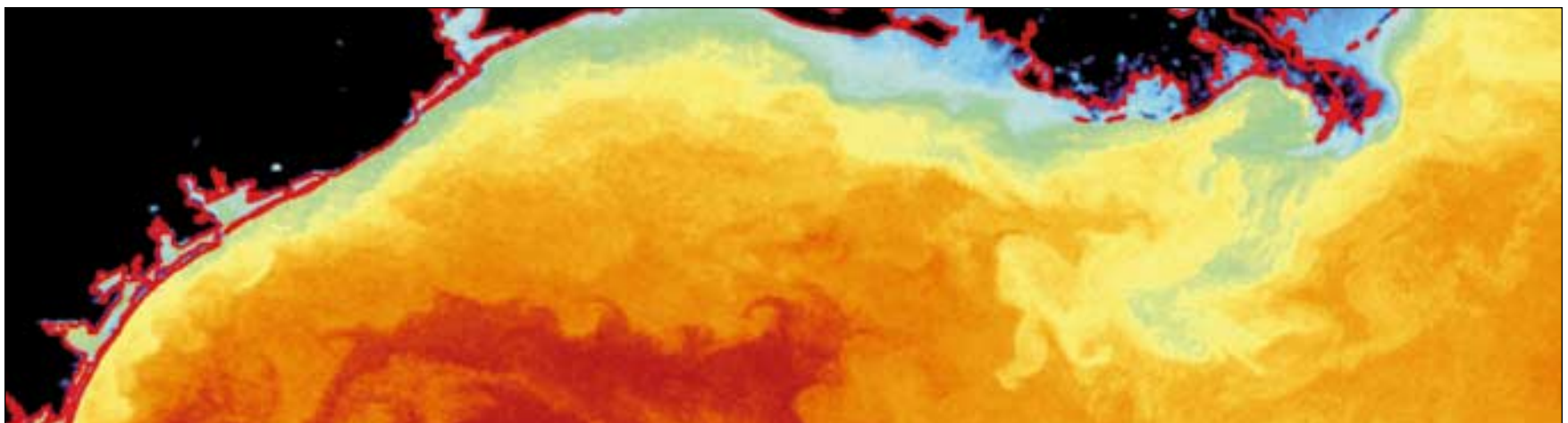
Authorized Signature _____

ROOMMATES: (Name all other occupants and give their addresses)

Name _____ Address _____

Name _____ Address _____

Name _____ Address _____



Courtesy of LSU Earth Scanning Laboratory. Data from NOAA.

FREE!

GSA Technical Sessions on the Web—and on Disk!



Look for the technical program on GSA's Web site in *August*. You can download sessions, events, exhibits and courses together with a basic search and sorting software that will create a personal daily calendar.

In addition, preregistrants can choose to receive a 3½ disk in advance with the same capabilities. This will be mailed in *October* with your badge. Formats are for IBM and Macintosh, and need 3MB of hard disk space.

To order the disk, please use the check box on the preregistration form.

REGISTRATION

Preregistration is due at GSA no later than **September 29, 1995.**

By October 20, preregistrants will be sent their badges PLUS a diskette of technical sessions, exhibits, and social events.

Save!

\$40 (professional) and \$20 (student) by preregistering.

Save!

an additional \$40 (professional) and \$20 (student) for nonmembers by joining GSA now.


- The member fees apply to members of both GSA and Associated Societies (listed on the registration form and on the front page). Those registering at the member rates must provide proof of association membership at time of registration or be charged the nonmember rate. A membership number or copy of membership dues receipt will suffice.
- Registration will not be processed unless full payment is received. Unpaid purchase orders are NOT accepted as valid registration. The confirmation card will be your only receipt.
- Badges are needed for access to ALL activities, 10:00 a.m. Sunday through 5:00 p.m. Thursday.
- **Guests:** Registration is required for those attending guest activities, technical sessions, or the exhibit hall. A guest is defined as a *nongeologist* spouse or friend of a professional or student registrant.
- **Students:** A CURRENT student ID is required to obtain student rates. You will have to pay the professional fee unless you have the ID.

REGISTRATION FEES:

	Full Meeting <i>Advance—by 9/29/95</i>	On-Site	One Day
Professional Member	\$195	\$235	\$118
Professional Nonmember	\$235	\$275	\$138
Student Member	\$ 70	\$ 90	\$ 45
Student Nonmember	\$ 90	\$110	\$ 55
Guest or Spouse	\$ 80	\$100	n/a
K-12 Teacher	\$ 25	\$ 35	n/a
Cont. Ed./Field Trip Only	\$ 35	\$ 35	n/a

CONVENIENCE INFORMATION

ACCESSIBILITY FOR REGISTRANTS WITH SPECIAL NEEDS

 GSA is committed to making the Annual Meeting accessible to all people interested in attending. If you need any auxiliary aids or services because of a disability, check the appropriate box on the registration form. If you have suggestions or need further information, contact Becky Martin, ext. 164, GSA headquarters. Please let us know your needs by October 6.

CHILD CARE

Day care service may be provided if there is sufficient interest. Please call Kathy Lynch, GSA headquarters by August 15, ext. 114.

COMPUTER AND OFFICE CENTER

Sunday through Thursday, November 5-9; Ernest N. Morial Convention Center.

GSA will provide registrants and exhibitors with PCs, laser printers, copiers, fax, and general office supplies. There is no need to lug along your heavy laptop computer! For a minimal fee, this equipment will be available for your use to produce reports, transparencies, or last-minute fliers.

INFORMATION AND MESSAGES

Saturday through Thursday, November 4-9.

Sponsored by Fisons Instruments.

FISONS
instruments

A GSA information and message desk will be available during the meeting. We are happy to take messages on your behalf. The computerized message boards will be at the Convention Center. Leave the following numbers for your home and office:

Ernest N. Morial Convention Center
(504) 544-6217

Hyatt Regency Hotel
(504) 561-1234

NEWS ROOM

Sunday through Thursday, November 5-9; Ernest N. Morial Convention Center.

The News Room provides information on many topics for release to the news media. Please let us know of material that is noteworthy for the science or general press. Members of the press may receive complimentary registration with appropriate press credentials by contacting Sandra Rush, (303) 443-8489, or June Forstrom, GSA Communications Department, ext. 137, E-mail: jforstro@geosociety.org.

TOURIST INFORMATION

Greater New Orleans Tourist Commission
1520 Sugar Bowl Drive
New Orleans, LA 70112
(504) 566-5011, fax 504-566-5046

WEATHER

The average daily temperature in New Orleans for November can be a high of 73°F and a low of 38°F. A jacket and umbrella are recommended for cool evenings or rain showers.

NEW ORLEANS

BRIDGING THE GULF



New Orleans French Quarter. Courtesy of GNOTCC.

- Please register only one professional or student per form and keep a copy for yourself.
- All registrations received after September 29 will be considered ON-SITE registrations. Registration fees increase to on-site rates after that date.

Newcomers' Session

Monday, November 6, 12:00 noon to 1:00 p.m.

Never been to an Annual Meeting before? Having trouble deciphering the program? Can't figure out how to get to all those sessions you've chosen? Join us at GSA's Newcomers' Gathering. We will try to help you out and send you in the right direction. Familiar hands at annual meetings will share expertise on GSA and fabulous old New Orleans. Bring your lunch and we'll talk.

Members Pay Less! Join Now!

If you are not yet a GSA member, **now** is the time to join. Professionals will save a substantial amount on the registration fee by paying the member rate—almost exactly the amount you would pay to join GSA. That's like joining GSA for free! Likewise, students who pay the basic membership dues of \$20 will receive a \$20 discount on their Annual Meeting Registration. These discounts apply only to **full-meeting paid** registrations; not to one-day or complimentary registrations.

The \$40 registration discount for members applies to professional members of GSA or an Asso-

ciated Society. Qualifying Associated Societies are listed on the registration form and on the front page. Save time by joining *before* the meeting by contacting the Membership Department at (303) 447-2020, ext. 115 or E-mail: tmorelan@geosociety.org. To join during the meeting, visit the Membership Booth in the registration area.

Cancellations, Changes, and Refunds


All requests for additions, changes, and cancellations must be made in writing and received by October 6, 1995. GSA will refund or credit pre-registration fees for cancellations received in writing by October 6. **NO REFUNDS WILL BE MADE ON CANCELLATION NOTICES RECEIVED**

AFTER THIS DATE. Refunds will be mailed from GSA after the meeting. Refunds for fees paid by credit card will be credited according to the card number on the preregistration form. There will be **NO** refunds for on-site registration and ticket sales.


On-Site Registration Schedule

Ernest N. Morial Convention Center, Hall A


Saturday, November 4 1:00 p.m. to 5:00 p.m.
 Sunday, November 5 9:00 a.m. to 7:30 p.m.
 Monday, November 6. 7:00 a.m. to 4:30 p.m.
 Tuesday, November 7. 7:00 a.m. to 4:30 p.m.
 Wednesday, November 8 7:00 a.m. to 4:30 p.m.
 Thursday, November 9 7:00 a.m. to 11:00 a.m.



MAIL



FAX



PHONE

GSA Annual Meeting
 P.O. Box 9140, Boulder, CO 80301-9140

(303) 447-1133 or (303) 447-0648
 Credit card use only. Our fax line is open 24 hours.
 Do not send another copy in the mail.

(303) 447-2020, ext. 184
 GSA members using credit cards only.
 Have your member number and complete information ready.
 Do not send another copy by mail.

Preregistration Form

1995 GSA ANNUAL MEETING
November 6-9

Preregistration must be received by September 29, 1995

Please print clearly. Copy for your records. Deadline for changes or cancellation is October 6.

Name (last) _____ First name/nickname (as it should appear on badge) _____

Employer/University (affiliation as it should appear on badge) _____

Mailing address for Employer/University above _____

City _____ State _____ ZIP Code _____ E-mail _____

Country (other than USA) _____ Business Phone _____ Fax _____ Home Phone _____

**Spouse/Guest Last Name _____ First name/nickname (as it should appear on badge) _____

**City/State _____ Country (other than USA) _____

For Continuing Education Course Registrant CEUs, supply Social Security # _____

FREE MEETING PROGRAM DISK (available only to those that preregister by 9/29/95)
 Yes, I would like a copy — Format: IBM or Mac

PREREGISTRATION FEES Required for participation in field trips, technical sessions, courses, and exhibits.

*MEMBER AFFILIATIONS (for registration discount supply association member # _____):
 (a) GSA (b) AASG (c) AGID (d) AWG (e) CF (f) GIS (g) GS (h) MSA
 (i) NABGG (j) NAGT (k) NESTA (l) PS (m) SEG (n) SGE (o) SVP

	Full Week	or	One Day	Qty.	Amount
Professional Member*	<input type="checkbox"/> (1) \$195		<input type="checkbox"/> (2) \$118	1	\$ _____
Professional Nonmember	<input type="checkbox"/> (3) \$235		<input type="checkbox"/> (4) \$138	1	\$ _____
Student Member*	<input type="checkbox"/> (5) \$ 70		<input type="checkbox"/> (6) \$ 45	1	\$ _____
Student Nonmember	<input type="checkbox"/> (7) \$ 90		<input type="checkbox"/> (8) \$ 55	1	\$ _____
K-12 Teacher	<input type="checkbox"/> (42) \$ 25			1	\$ _____
Field Trip/Education Course only	<input type="checkbox"/> (98) \$ 35			1	\$ _____
**Spouse/Guest (fill in name above for badge)	<input type="checkbox"/> (9) \$ 80				\$ _____

Total Column A \$ _____

GUEST ACTIVITIES

	Qty.	Amount
1 Bayou Birding, Sun. (20) \$ 23	_____	\$ _____
2 Most Interesting City, Sun. (21) \$ 17	_____	\$ _____
3 Honey Island Swamp, Mon. (22) \$ 37	_____	\$ _____
4 Most Interesting City, Lunch, Mon. (23) \$ 34	_____	\$ _____
5 Learning to Cook Creole, Tues. (24) \$ 32	_____	\$ _____
6 Town & Country Highlights, Tues. (25) \$ 25	_____	\$ _____
7 Literary French Qtr., Wed. (26) \$ 27	_____	\$ _____
8 Mardi Gras World, Wed. (27) \$ 19	_____	\$ _____

SPECIAL EVENTS

1 Riverboat Dinner Cruise, Sat. (40) \$ 38	_____	\$ _____
2 GSA Dixieland Jazz Jam, Sat. (41) \$ 7	_____	\$ _____
3 Philharmonic and Dinner, Sat. (42) \$ 70	_____	\$ _____
4 Aquarium Evening, Wed. (50) \$ 39	_____	\$ _____

Total Column B \$ _____

TICKETED MEAL FUNCTIONS Qty. Amount
(Meeting registration not required)

1 Geosci. Ed. Div. Breakfast, Mon. (60) \$ 13	_____	\$ _____
2 History Geol. Div. Lunch, Mon. (61) \$ 23	_____	\$ _____
3 NAGT Lunch, Mon. (62) \$ 23	_____	\$ _____
4 NABGG Lunch, Mon. (63) \$ 23	_____	\$ _____
5 AWG Breakfast, Tues. (64) \$ 13	_____	\$ _____
6 GIS Lunch, Tues. (65) \$ 23	_____	\$ _____
7 Hydrogeology Div. Lunch, Tues. (66) \$ 23	_____	\$ _____
8 MSA Lunch, Tues. (67) \$ 23	_____	\$ _____
9 Paleontological Soc. Lunch, Tues. (68) \$ 23	_____	\$ _____
10 SEG Lunch, Tues. (69) \$ 23	_____	\$ _____
11 Eng. Geol. Div. Lunch, Wed. (70) \$ 23	_____	\$ _____
12 Coal Geol. Div. Lunch, Wed. (71) \$ 23	_____	\$ _____

Total Column C \$ _____

Total Columns A, B, and C \$ _____

FIELD TRIPS

	Column D Amount
1 Explosive Volcanism—Mexico (101) \$550	\$ _____
2 Hydrogeology—Bahamas (102) \$450	\$ _____
3 Wisconsinan to Holocene Soils (103) \$190	\$ _____
4 Gulf Coast to Pensacola (104) \$160	\$ _____
5 Hydrogeology—Floating Marshes (105) \$ 95	\$ _____
6a Engineering Geology, Tuesday (106) \$ 65	\$ _____
6b Engineering Geology, Wednesday (107) \$ 65	\$ _____
7 Geological and Cultural Excursion (108) \$190	\$ _____
8 Molluscan Biostratigraphy (109) \$220	\$ _____
9 Appalachian Thrust Belt (110) \$195	\$ _____
10 Landforms—Mississippi Delta (111) \$ 80	\$ _____
11 Ground-Water Remediation (112) \$ 70	\$ _____
12 Five Island Salt Dome (113) \$ 75	\$ _____
13 Sand and Gravel Mining (114) \$ 75	\$ _____

K-16 PROGRAMS

1 Exploring Solar System (302) \$ 5	\$ _____
2 Effective Teaching Practices (303) \$ 15	\$ _____
3 Fairly Simple Exercises (304) \$ free	\$ _____
4 Seismic Sleuths (305) \$ free	\$ _____
5 Project Atmosphere (306) \$ free	\$ _____
6 Share-a-thon Presenter (307) \$ free	\$ _____
7 Geology New Orleans Field Trip (308) \$ free	\$ _____
8 Urban Stormwater Field Trip (309) \$ free	\$ _____
9 Successful Grant Proposals (310) \$ free	\$ _____

Total Column D \$ _____

CONTINUING EDUCATION COURSES

	Column E Amount
1 Contaminant Organic Geochemistry	
Professional (150) \$175	\$ _____
Student (151) \$ 75	\$ _____
2 Fundamental Project Management	
Professional (152) \$220	\$ _____
Student (153) \$200	\$ _____
3 Intro. to Experimental Modeling	
Professional (154) \$185	\$ _____
Student (155) \$165	\$ _____
4 Intro. to Soil and Ground-Water Remediation	
Professional (156) \$300	\$ _____
Student (157) \$280	\$ _____
5 Multidimensional Computer Visualization	
Professional (158) \$325	\$ _____
Student (159) \$110	\$ _____
6 Phase I Environmental Site Assessment	
Professional (160) \$300	\$ _____
Student (161) \$280	\$ _____
7 Coastal Land Loss	
Professional (162) \$215	\$ _____
Student (163) \$195	\$ _____
8 Essential Subsurface Mapping	
Professional (164) \$215	\$ _____
Student (165) \$195	\$ _____
9 GIS and the Geosciences	
Professional (166) \$150	\$ _____
Student (167) \$130	\$ _____
10 Geomorphic Application of In-Situ	
Professional (168) \$240	\$ _____
Student (169) \$220	\$ _____
11 Hydrogeology Geochemistry Wetlands	
Professional (170) \$175	\$ _____
Student (171) \$ 75	\$ _____

Total Column E \$ _____

Total Columns A, B, & C \$ _____

Total Column D \$ _____



GRAND TOTAL REMITTANCE \$ _____
 (All registrations must be prepaid. Purchase Orders are not accepted.)

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Payment: Check (U.S. funds payable to '95 GSA Annual Meeting)
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Card Number _____ Expires _____

Signature _____

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If this is your first time at a GSA Annual Meeting check here if you would like to participate in our Newcomer's Session
 (43) Yes No

ABSTRACTS WITH PROGRAMS

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If you reside in the United States, Canada, or Mexico you may take advantage of the advance-copy purchase option of the Annual Meeting *Abstracts with Programs*. Due to the prohibitive airmail costs and delays for overseas mailings, we regret that we cannot make this offer to everyone. Copies will be mailed about three weeks prior to the meeting. Price includes shipment by first-class mail. **No additional discounts may be applied to this offer.**

The volume will also be for sale at the meeting. Note: Your registration does not include a copy of the *Abstracts* volume. Please check to make sure that you have not already purchased a copy on your membership dues statement or through GSA Publication Sales. **No refunds will be given for duplicate orders.**

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Prepayment is required. Check, money order (in U.S. funds, payable on U.S. banks), or major credit cards are accepted. Order directly from GSA Publication Sales by mail, phone, or fax. To assure receipt prior to the meeting, **all orders must be received by Thursday, August 17.**

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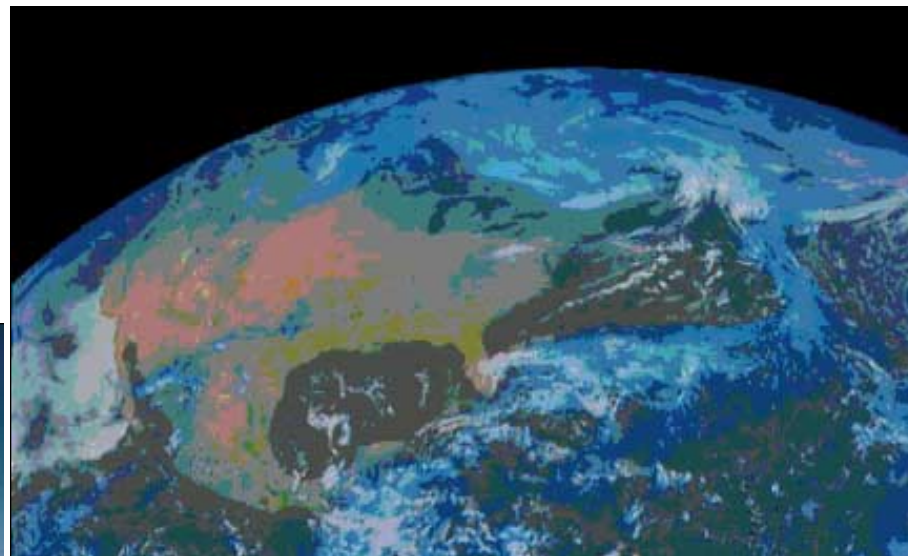
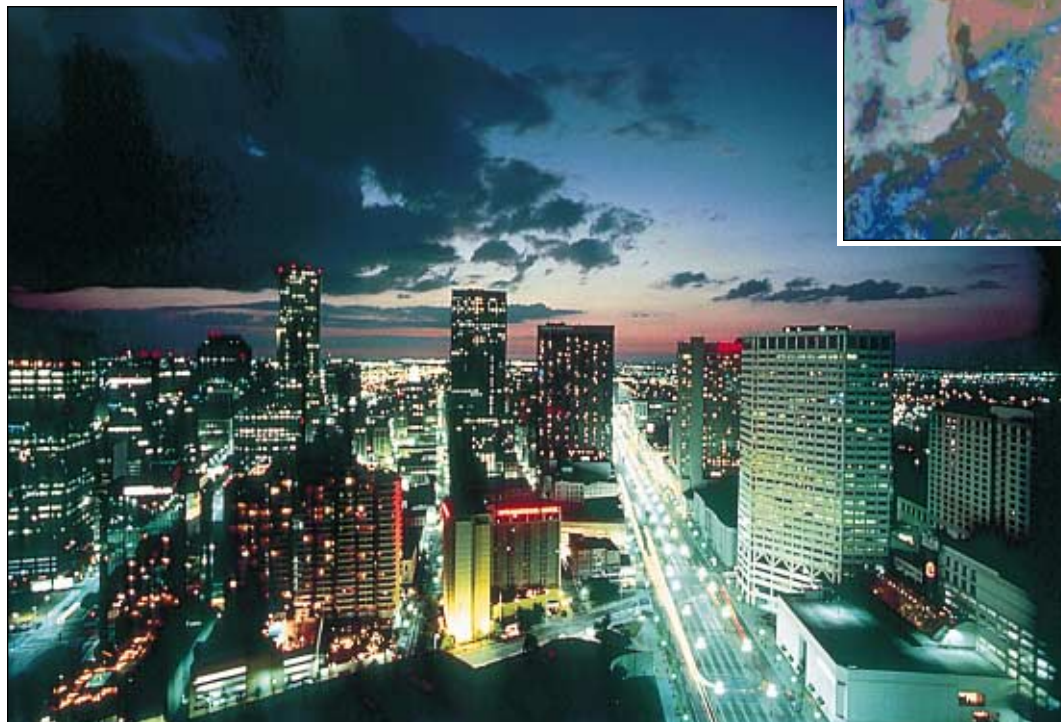
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By mail or fax, use the form provided.
By phone, call toll-free 1-800-472-1988, or use our business phone (303) 447-2020 during office hours 8:00 a.m. to 4:30 p.m. MT.

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Copies of *Abstracts with Programs* will be for sale at the Convention Center. Price: \$22 net each. **No additional discounts apply.**

Geological Society of America



NEW ORLEANS
BRIDGING THE GULF

1995 ANNUAL MEETING

New Orleans, Louisiana • November 6-9

PROGRAM, TRANSPORTATION, AND HOTEL INFORMATION

(303) 447-2020 or 1-800-472-1988; fax 303-447-0648;

E-mail: meetings@geosociety.org

ABSTRACTS DUE JULY 12

For abstract forms (303) 447-2020, ext. 161;

E-mail: ncarlson@geosociety.org

PREREGISTRATION DUE SEPTEMBER 29

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