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JOINT MEETING

North-Central & South-Central

Plan your 2010 GSA Section Meeting attendance!

44th Annual Meeting, North-Central Section, GSA
44th Annual Meeting, South-Central Section, GSA
Branson, Missouri, USA
11–13 April 2010

www.geosociety.org/sectdiv/Northc/2010mtg/



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Front Cover and above: Lower Mississippian carbonates of the St. Joe Limestone outcrop along the Goat Trail overlooking the Buffalo National River. Cover inset: Dogwood blossoms, harbingers of springtime in the Ozarks. Photos by Kevin R. Evans.

Join us for springtime in the Ozarks! In the midst of the Ozarks, Branson is surrounded by spectacular geology, including numerous caves, springs, lakes, and glades. Missouri State University and Emporia State University are pleased to host the 2010 Joint Meeting of the GSA's North-Central and South Central Sections. The meeting offers a diverse array of more than 40 symposia, theme sessions, and workshops, plus 11 field trips and a public-policy forum. Several of the technical sessions and field trips focus on the unique karst geology of the Ozarks and issues related to mining in the mid-continent region.

Theme sessions and symposia begin at 1 p.m. Sunday and end at noon Monday, allowing time for travel, a pre- or postmeeting field trip or workshop, or even a visit to Branson's natural and cultural attractions.

EXTENDED MEETING SCHEDULE

7–11 April: Premeeting Field Trips
11–13 April: Technical Sessions

10–11 & 13 April: Workshops
13–15 April: Postmeeting Field Trips

CONTACT INFORMATION

Meeting Co-Chairs: Tom Plymate, tompymate@missouristate.edu; Marcia Schulmeister, mschulme@emporia.edu.

Technical Program Chair: Kevin Mickus, kevinmickus@missouristate.edu.

Field Trip Coordinators: James S. Aber, jaber@emporia.edu; Kevin R. Evans, kevinevans@missouristate.edu.

TRAVEL

The new Branson Regional Airport is a short shuttle ride from the Convention Center and features affordable direct flights from Minneapolis, Atlanta, and other points in the south and Midwest. Springfield-Branson National Airport is less than an hour's drive away and offers multiple daily flights from major hub cities. If you are traveling by car, US-65 provides four-lane access from I-44 directly to Branson.

ACCOMMODATIONS

Hotel reservation deadline: 12 March 2010

The Hilton Branson Convention Center Hotel is a full-service hotel connected to the Branson Convention Center. This architecturally unique, modern facility is located along the new Branson Landing retail and entertainment district along Lake Taneycomo. Mid-April is before the peak tourist season in Branson, so we have been able to negotiate a very attractive contract for use of this world-class facility, including free parking and free in-room high-speed Internet. Rates: US\$119 for a single/double; US\$139 for three to four occupants; suites are an additional US\$50. Make your reservations from the GSA meeting Web site, www.geosociety.org/sectdiv/Northc/2010mtg/lodging.htm, or call 1-866-442-0959, group code "GSA."



Back cover and above: Worm burrows. Photo by Kevin R. Evans.

REGISTRATION

Early registration deadline: 8 March 2010

Cancellation deadline: 15 March 2010

Register at www.geosociety.org/sectdiv/Northc/2010mtg/

REGISTRATION FEES (ALL FEES ARE IN U.S. DOLLARS)

	Early Reg.		Standard Reg.	
	Full Mtg.	One Day	Full Mtg.	One day
Professional Member	\$130	\$90	\$160	\$100
Professional Member 70+	\$80	\$60	\$110	\$60
Professional Nonmember	\$160	\$110	\$200	\$120
Student Member	\$45	\$30	\$60	\$40
Student Nonmember	\$60	\$40	\$75	\$50
K-12 Professional	\$40	\$30	\$60	\$40
Guest or Spouse	\$30	\$30	\$40	\$40
Field Trip or Workshop Only	\$30	\$30	\$40	\$40

Complimentary Registration for Attendees from México: The South-Central section will pay the registration fee for attendees from the states of Coahuila, Nuevo León, Tabasco, Tamaulipas, and Veracruz. Before you register, please contact Mérida Gutierrez, +1-417-836-5967, mgutierrez@missouristate.edu, for more information.

On-Site Registration and Badge Pick-up Schedule

Registration during the meeting will be at the Branson Convention Center. GSA will be distributing meeting badges during these hours as well; no badges will be mailed.

Sunday, 11 April: 10:30 a.m.–7 p.m.

Monday, 12 April: 7 a.m.–4:30 p.m.

Tuesday, 13 April: 7–10:30 a.m.

CANCELLATIONS, CHANGES, AND REFUNDS

Requests for additions, changes, and cancellations must be received in writing at GSA Headquarters by 15 March 2010. 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 cards will be refunded to the card used for registration. GSA cannot provide refunds for on-site registration, *Abstracts with Programs*, or event ticket sales.

CALL FOR PAPERS

Abstract deadline: 19 January 2010

Abstract submission fee: US\$10

Submit online at www.geosociety.org/sectdiv/Northc/2010mtg/

TECHNICAL PROGRAM

Symposia

1. **They Say That “Breaking Up Is Hard To Do”:** **Geological, Geophysical, and Remote Sensing Investigations of Continental Rifts.** Mohamed Abdelsalam, Missouri University of Science and Technology (MS&T), abdelsam@mst.edu, John Hogan, MS&T, jhogan@mst.edu; Kelly H. Liu, MS&T, liukh@mst.edu.
2. **Advances in the Chronology, Correlation, and Stratigraphy of Pre-Wisconsinan Glacigenic**

Sediments. Charles Rovey, Missouri State University, charlesrovey@missouristate.edu; Greg Balco, Berkeley Geochronology Center, balcs@bgc.org.

3. **Geological Aspects of the Civil War.** Sherman Lundy, BMC Aggregates, sherml@bmcaggregates.com; George Davis, Missouri Dept. of Transportation, george.davis@modot.mo.gov; Joseph T. Hannibal, Cleveland Museum Natural History, jhanniba@cmnh.org.
4. **Sedimentary Geology of the North American Craton and its Southern Margin.** *Cosponsored by Great Lakes Section, SEPM.* John Groves, University of Northern Iowa, john.groves@uni.edu.
5. **Cultural Geology: Archaeological and Historic Building Stones, Sites, and Materials, Terrain, Terroir, and More.** Joseph T. Hannibal, Cleveland Museum of Natural History, jhanniba@cmnh.org; Andrew Bauer, University of Chicago, bauer@uchicago.edu.

Theme Sessions

Tectonics, Regional Geology, Precambrian Geology, and Planetary Geology

1. **Lithospheric Structure of the Mid-Continent Region: What We Know, What We Need to Know, and What EarthScope Can Tell Us.** *Co-sponsored by GSA Geophysics Division.* G.R. Keller, University of Oklahoma, grkeller@ou.edu; Kevin Mickus, Missouri State University, kevinmickus@missouristate.edu.
2. **Geological Evolution of the Sierra Madre Oriental, Mexico.** Jose Guadalupe Lopez Oliva, Universidad Autónoma de Nuevo León (UANL), joseglop@ccr.dsi.uanl.mx; Juan Alonso Ramírez Fernández, juanaram@prodigy.net.mx, UANL.
3. **Precambrian Geology of the Midcontinent: Celebrating the Career of W.R. Van Schmus.** Renee Rohs, Northwest Missouri State University, rroh@s@nwmissouri.edu.
4. **Geology of the Ozark Plateaus.** Mark R. Hudson, U.S. Geological Survey, mhudson@usgs.gov; Angela Chandler, Arkansas Geological Survey, angela.chandler@arkansas.gov.
5. **Earth, Moon, Mars, and Beyond: Midcontinental Perspectives on Planetary Geology Problems and Research.** Keith Milam, Ohio University, milamk@ohio.edu; John C. Weber, Grand Valley State University, weberj@gvsu.edu.

Paleontology, Stratigraphy, and Sedimentology

6. **Current Conodont Research: A Pander Society Session in Honor of Raymond Ethington, Tom Thompson, and Jim Miller.** *Cosponsored by Pander Society.* Darwin Boardman, Oklahoma State University, darwin.boardman@okstate.edu; Damon Bassett, Missouri State University, damonbassett@missouristate.edu; John Repetski, U.S. Geological Survey, jrepetski@usgs.gov.
7. **Ichnofossils: The Marriage of Sedimentology and Ecology.** *Cosponsored by the Paleontological Society.* Katherine Bulinski, Bellarmine University, kbulinski@bellarmine.edu; Karen Koy, Missouri Western State University, kkoy@missouriwestern.edu.
8. **Paleoecology: Variation in Fossil Communities through Space and Time.** *Cosponsored by the Paleontological Society.* Benjamin Dattilo, Indiana University–Purdue University–Fort Wayne, ben.dattilo@gmail.com; Katherine Bulinski, Bellarmine University, kbulinsk@bellarmine.edu.

9. **Mid-Continent Paleontology.** Michael Morales, Emporia State University, mmorales@emporia.edu.
10. **Pennsylvanian and Permian Cyclothems of Midcontinental North America.** John Pope, Northwest Missouri State University, jppope@nwmissouri.edu; Tom Marshall, Iowa Geological Survey, thomas.marshall@dnriowa.gov.
11. **Developments in Early Paleozoic Stratigraphy in the U.S. Midcontinent.** Robert L. Ripperdan, Saint Louis University, ripperdan@cas.slu.edu; James D. Loch, University of Central Missouri, loch@ucmo.edu.

Engineering and Environmental Geology

12. **Environmental Microbiology: Intersections between the Biosphere and the Geosphere.** Melissa Lenczewski, Northern Illinois University, lenczewski@niu.edu.
13. **Is Mother Nature out to Get You? Medical Geology Issues in the Mid-Continent.** Robert B. Finkelman, University of Texas–Dallas, bobf@utdallas.edu; Syed E. Hasan, University of Missouri, hasans@umkc.edu.
14. **The 2005 Taum Sauk Reservoir Breach: Failure Mechanisms, Flood Effects, Bedrock Exposures, and Current Remediation Efforts.** Cheryl Seeger, Missouri Dept. of Natural Resources, cheryl.seeger@dnr.mo.gov; David J. Wronkiewicz, Missouri University of Science and Technology, wronk@mst.edu.
15. **Carbon Sequestration: Research, Deployment, and Commercialization.** Sallie Greenberg, Illinois Geological Survey, greenberg@isgs.illinois.edu.
16. **Water-Rock-CO₂ Interactions during Carbon Sequestering Activities.** David Wronkiewicz, Missouri University of Science and Technology, wronk@mst.edu; Mérida Gutiérrez, Missouri State University, mgutierrez@missouristate.edu.
17. **The Tri-State Mining District, a Decades-Long Project: Progress, Challenges, and Revelations.** Gina Manders, Emporia State University, mgblues@sbcglobal.net; Rebecca Jim, Local Environmental Action Demanded Agency Inc., rjim@neok.com.

Energy and Economic Geology

18. **Devonian and Mississippian Strata of the Midcontinent North America: Sequence Stratigraphy, Paleontology, and Hydrocarbon Potential (Gas Shales, Carbonates, Cherts).** Darwin R. Boardman II, Oklahoma State University, darwin.boardman@okstate.edu; Salvatore J. Mazzullo, Wichita State University, salvatore.mazzullo@wichita.edu; Brian Wilhite, Woolsey Operating Co., bwilhite@woolseyco.com; Jim Puckette, Oklahoma State University, jpuckett@okstate.edu.
19. **Ore Deposits of the Central U.S.: Origin, Mining, and Environmental Remediation.** Martin Appold, University of Missouri–Columbia, appoldm@missouri.edu, Kevin Shelton, University of Missouri–Columbia, sheltonkl@missouri.edu.

Geoscience Education

20. **Issues in Geoscience Education.** *Cosponsored by Central Section, NAGT.* Kathleen Bower, Eastern Illinois University, kmbower@ciu.edu.
21. **Arts Integration in K–16 Geoscience Education.** *Cosponsored by NAGT.* P. Allen Macfarlane, Kansas Geological Survey, dowser@kgs.ku.edu; Gary Rosenberg, Indiana University–Purdue University, grosenbc@iupui.edu.

22. **Teaching Sustainability.** *Cosponsored by NAGT.* David H. Voorhees, Waubonsee Community College, dvoorhees@waubonsee.edu.
23. **Easy-to-Incorporate Inquiry-Based Activities for the K–16 Classroom.** *Cosponsored by Central Section, NAGT.* Carrie Wright, University of Southern Indiana, clwright@usi.edu.

Hydrogeology

24. **Water Resources Sustainability in the Deep Carbonate Aquifers of the Ozark and Midwest Regions: Will We Have Enough?** P. Allen Macfarlane, Kansas Geological Survey, dowser@kgs.ku.edu; John B. Czarnecki, U.S. Geological Survey, jczarneck@usgs.gov.
25. **Karst Hydrogeologic Systems of the Central United States and Northern Mexico.** *Cosponsored by GSA Hydrogeology Division.* Gary Marcus, Zara Environmental, marcus@zaraenvironmental.com; Benjamin Schwartz, Texas State University–San Marcos, bs37@txstate.edu.
26. **Aquifer Management Challenges: Unsustainable, Unbounded, Undefined, or Unregulated.** Susan Stover, Kansas Water Office, susan.stover@kwo.ks.gov; Robert Mace, Texas Water Development Board, robert.mace@twdb.state.tx.us.
27. **Tracers in the Environment: Tried and True or Something New—Identifying Issues with the Hydrogeologic System.** Margaret Townsend, Kansas Geological Survey, mtown@ku.edu; Ralph Davis, University of Arkansas, ralphd@uark.edu.
28. **Innovative Approaches to Characterization and Remediation of Contaminated, Unconsolidated Aquifers.** *Cosponsored by GSA Hydrogeology Division.* Marcia Schulmeister, Emporia State University, mschulme@emporia.edu; Joseph Dom, Kansas Department of Health & Environment, jdom@kdheks.gov; Robert Weber, U.S. Environmental Protection Agency, robert.weber@epamail.epa.gov.

Surficial Geology

29. **Reservoir Science: Sediment and Water-Quality Studies for Effective Management.** Kyle Juracek, U.S. Geological Survey, kjuracek@usgs.gov.
30. **Speleogenesis, Processes, and Records in Karst Systems.** Kevin Stafford, Stephen F. Austin State University, staffordk@sfasu.edu; Matt Covington, University of Minnesota, covin039@umn.edu.
31. **Human Impacts on Fluvial Systems.** Robert Pavlowsky, Missouri State University, bobpavlowsky@missouristate.edu, Marc Owen, Missouri State University, mowen@missouristate.edu.
32. **Urbanization Influences on Stream Geomorphology, Hydrology, and Sediment Transport.** Faith A. Fitzpatrick, U.S. Geological Survey, fafitzpa@usgs.gov; Jordan Clayton, Georgia State University, jclayton@gsu.edu.

Other Sessions

33. **Undergraduate Research (Posters).** *Cosponsored by Council on Undergraduate Research, Geosciences Division.* Jeanette Pope, DePauw University, jpope@depauw.edu.

GEOLOGY AND PUBLIC POLICY FORUM

Reclamation in the Tri-State Lead-Zinc Mining District: A Trans-Boundary Effort. *Cosponsored by GSA Geology and Public Policy Committee and GSA Geology and Society Division.* Mon., 12 April, 3:45–5 p.m. Rex Buchanan, rex@kgs.ku.edu; Marcia Schulmeister, mschulme@emporia.edu.

Panelists: David Drake, U.S. EPA Region 7; Gary Baumgarten, U.S. EPA Region 5; Rebecca Jim, Local Environmental Action Demanded; Cheryl Seeger, Missouri Division of Geology and Land Survey.

The tri-state mining district encompasses ~2,500 square miles in southeastern Kansas, southwestern Missouri, and northeastern Oklahoma. A century of lead and zinc mining has generated over 300 miles of underground tunnels, 165 million tons of chat waste, and widespread contamination of groundwater, surface water, and soil. Millions of federal and state dollars have been spent to reclaim affected property and treat contaminated water and soil, and a significant amount of the work is yet to be completed. In this forum, invited panelists from two EPA regional offices, a state agency, and a local citizen action group will discuss the status of the project and address the trans-boundary issues and intra-agency collaboration and the challenges of public communication concerning a long-term and occasionally contentious clean-up process. This forum follows two-related theme sessions: “Ore Deposits of the Central U.S.: Origin, Mining, and Environmental Remediation” and “The Tri-State Mining District, a Decades-Long Project: Progress, Challenges, and Revelations,” as well as a premeeting field trip: “Route 66: Geology and Legacy of Mining in the Tri-State District of Missouri, Kansas, and Oklahoma.”

FIELD TRIPS

Trip fees include transportation during the trip and a field guide. Other services, such as meals and lodging, are noted by the following: B—breakfast, L—lunch, R—refreshments, D—dinner, ON—overnight lodging. All trips begin and end at the Branson Convention Center/Branson Hilton Hotel at Branson Landing unless otherwise indicated. Details and itineraries will be provided with registration confirmation.

Premeeting

1. **High-Resolution Stratigraphy of Upper Devonian and Lower Mississippian Strata of the Ozark Region with Reference to Subsurface Kansas and Oklahoma.** Wed.–Fri., 7–9 April. Cost: US\$330 (2ON, 2L, 3R). Min.: 35; max.: 53. Darwin R. Boardman II, darwin.boardman@okstate.edu; S.J. Mazzullo; Brian Wilhite; Jim Puckette; Thomas L. Thompson.

This three-day trip will provide a preliminary sequence stratigraphic model for Upper Devonian through Mississippian strata from the Burlington Shelf into the starved basin in Oklahoma, using a multidisciplinary approach that integrates outcrop and subsurface lithostratigraphy and biostratigraphy. A related core workshop on Sat., 10 April, will highlight subsurface cores from Kansas and Oklahoma, including Cowley Formation spiculitic oil and gas reservoir facies in Kansas, and a basinal core from Oklahoma with Woodford-Caney shales.

2. **Route 66—Geology and Legacy of Mining in the Tri-State District of Missouri, Kansas, and Oklahoma.** *Cosponsored by NAGT.* Sat.–Sun. (a.m.), 10–11 April. Cost: US\$130 (ON, L, 2R). Min.: 12; max.: 36. James S. Aber, Emporia State

University, jaber@emporia.edu; Susan W. Aber; Gina Manders; Robert W. Nairn.

This trip follows historic Route 66 through southwestern Missouri, northeastern Oklahoma, and southeastern Kansas, with special emphasis on the history and methods of mining lead and zinc ore as well as the fossil fuel (coal) used to smelt the ore. Ongoing environmental problems and remediation efforts are prominent subjects at several localities including Big Brutus, one the world’s two largest electric-power shovels near West Mineral, Kansas; the environmental debacle and recent tornado damage at Picher, Oklahoma; and a passive treatment system for acid-mine water at Commerce, Oklahoma.

3. **Civil War and Cultural Geology of Southwestern Missouri, Part 1: The Geology of Wilson’s Creek Battlefield and the History of Stone Quarrying.**

Cosponsored by NAGT. Sat. 10, April. Cost: US\$75 (L, R). Min.: 4; max.: 19. Joe Hannibal, Cleveland Museum of Natural History, hannibal@cmnh.org; George H. Davis; Sherman Lundy; Kevin R. Evans.

This one-day trip, suitable for guests as well as professional geologists, features the geology and history of the Wilson’s Creek Battlefield, the National Cemetery in Springfield, the classic Phenix “marble” quarry, and the Springfield Underground.

4. **Innovative Storm-Water Management Practices.**

Cosponsored by James River Basin Partnership and Ozarks Environmental and Water Resources Institute. Sat. 10, April. US\$75 (L, R). Min.: 4; max.: 18. Robert Pavlowsky, Missouri State University, bobpavlowsky@missouristate.edu; Tiffany Frey.

This trip focuses on sites in the greater Springfield area that have implemented innovative storm-water management practices, such as cisterns, rain gardens, green roofs, and permeable concrete pavement. Localities will include the first LEED Platinum retail shopping center.

5. **Introduction to Karst Landscape Development—Ozark Underground Laboratory.** Sun. (a.m.), 11 April. US\$45 (R). Min.: 6; max.: 24. Tom Aley, Missouri State University; Douglas Gouzie, Missouri State University, douglasgouzie@missouristate.edu.

The Ozark Underground Laboratory is a well-known karst environmental resource near Branson that provides a controlled environment for cave research in nearly 9,000 ft of passage in Tumbling Creek Cave. This half-day trip will provide an introduction to basic karst features and processes, followed by a tour through portions of Tumbling Creek Cave. Hardhats and headlamps will be provided; participants should wear closed-toe shoes and be prepared to walk on a variety of surfaces.

6. **Civil War and Cultural Geology of Southwestern Missouri, Part 2: Geologic Influences on the Battle of Forsyth, Guerilla Activities, and Post-War Vigilantism.**

Cosponsored by NAGT. Sun. (a.m.), 11 April. Cost: US\$50 (R). Min.: 4; max.: 18. Kevin R. Evans, Missouri State University, kevinevans@missouristate.edu; George H. Davis.

This half-day trip, suitable for guests as well as professional geologists, will feature the geology of Taney County and discuss the influences of geology on bushwhacking, a minor military engagement, and post-war vigilantism activities; featured locations include the Ten O’Clock Run Fault, Branson Airport road cuts, Murder Rocks, Bear Cave, Snapp Balds, and Shadow Rock Park.

Postmeeting

- 7. Geomorphology and Paleontology of Riverbluff Cave, Springfield, Missouri.** *Cosponsored by NAGT.* Tues. (afternoon), 13 April. Cost: US\$50 (R). Min.: 10; max.: 15. Charles W. Rovey II, Missouri State University, charlesrovey@missouristate.edu; Matt Forir; Greg Balco; David Gaunt.

Riverbluff Cave preserves spectacular trackways, clawmarks, and bone beds. Sediment as old as 1.1 million years is present within the cave, based on paleomagnetic and cosmogenic-isotope techniques, and gravel beds with a concentration of mammoth and horse bones are dated at 0.74 ± 0.5 million years old, within error limits of the Matuyama-Bruhnes transition. Caving equipment will be supplied; the trip into the cave requires rigorous physical activity, including crawling.

- 8. Rift-Related Volcanism and Karst Geohydrology of the Southern Ozark Dome; Montauk to Big Spring—Geologic Framework of the Upper Current River Region.** Tues.–Thurs., 13–15 April. Cost: US\$255 (2ON, 2B, 2L, 3R). Min.: 12; max.: 36. Gary R. Lowell, The University of Texas at Arlington, lowell@uta.edu; Richard W. Harrison; David J. Weary; Randall C. Orndorff; John E. Repetski. This trip will examine and explore major karst features developed in Paleozoic carbonate strata on the Current River, including Montauk, Round Spring, Alley Spring, and Big Spring. Additional stops will examine volcanic features and the southernmost granite exposure in Missouri. The trip concludes with a discussion of the Missouri Gravity Low, the Eminence caldera, and the volcanic history of southern Missouri.
- 9. Geology of Weaubleau and Decaturville Impact Structures, Missouri.** *Cosponsored by GSA Planetary Geology Division; Pander Society.* Tues.–Wed., 13–14 April. Cost: US\$150 (1ON, B, L, 2R). Min.: 12; max.: 36. James F. Miller, Missouri State University, jimmler@missouristate.edu; Kevin R. Evans.
Weaubleau and Decaturville are impact structures along the 38th parallel. This field trip will examine the structural deformation and biostratigraphic constraints on the ages of these structures, and discuss processes in oblique impacts. Discussions will include arguments for and against the serial impact hypothesis.
- 10. Geology of the Taum Sauk Reservoir Scour, Missouri.** *Cosponsored by Missouri Department of Natural Resources.* Tues.–Wed., 13–14 April. Cost: US\$170 (1ON, B, L, 2R). Min.: 10; max.: 24. Cheryl M. Seeger, Missouri Dept. of Natural Resources, cheryl.seeger@dnr.mo.gov; David Wronkiewicz.
The Taum Sauk Reservoir failure in December 2005 scoured vegetation and surficial materials from the flank of Proffit Mountain. This trip will explore the scour from near the base of the reservoir to the valley of the East Fork of the Black River, nearly 1.5 miles away. Participants will also visit sites of petrologic and structural significance in the St. Francois Mountains terrane.
- 11. Geology and Karst Landscapes of Buffalo National River, Northern Arkansas.** Wed., 14 April. US\$70 (L, R). Min.: 12; max.: 36. Mark Hudson, U.S. Geological Survey, mhudson@usgs.gov; Kenzie J. Turner; Chuck Bitting.
Scenic Buffalo National River, administered by the National Park Service, lies in a watershed that exposes the three major Ozark Plateaus and provides some of the best bedrock exposures of the midcontinent. This trip will provide an overview of the central Buffalo National River region and will address the effects

of both a spatially variable Paleozoic stratigraphy and late Paleozoic faulting and folding on the location of major springs, caves, and recharge basins within two stacked karst aquifers.

WORKSHOPS

All workshops will be held at the Branson Convention Center. Participants must register for the meeting in order to attend a workshop.

- 1. Core Workshop: Surface to Subsurface High-Resolution Sequence Stratigraphy and Reservoir Analysis of Mississippian Strata in the Four-State Area (Missouri, Arkansas, Kansas, Oklahoma).** Sat., 10 April, 8 a.m.–5 p.m.; lunch & refreshments provided. Fee: US\$75. Max.: 50; min.: 20. Darwin R. Boardman II, Oklahoma State Univ., darwin.boardman@okstate.edu; Salvatore J. Mazzullo, Wichita State Univ.; Brian Wilhite, Woolsey Operating Co.; W. Lynn Watney, Kansas Geological Survey; Jim Puckette, Oklahoma State Univ.
This Core Workshop will focus on subsurface Mississippian limestone and chert reservoirs in Kansas and Northeastern Oklahoma. A unifying stratigraphic nomenclature will be presented based on correlation to Mississippian outcrops of the quad-state region of Missouri, Arkansas, Oklahoma, and Kansas.
- 2. Geology and Human Health: On the Cutting Edge.** Sun., 11 April, 8 a.m.–noon. Fee: US\$25; the first 10 student registrants will receive US\$15 scholarships. Max.: 24; min.: 15. Syed Hasan, University of Missouri–Kansas City, hasans@umkc.edu.
This workshop will focus on the importance of geological materials and processes in human health. Case histories linking geology to the occurrence of certain diseases and the relationship of geoscience to human well-being will be discussed. A complete set of online educational resources, developed by SERC (Science Education Resource Center), along with books and additional materials from other sources, will be made available at no additional cost to workshop participants. To maximize the benefits of this workshop, please visit the SERC Web site, <http://serc.carleton.edu/NAGTWorkshops/health10/index.html>, to complete a pre-workshop questionnaire.
- 3. From Passive to Active: Classroom Makeovers that Improve Teaching and Learning.** Sun., 11 April, 8 a.m.–noon. Fee: US\$25. Max.: 24; min.: 15. David Steer, National Association of Geoscience Teachers, Univ. of Akron, steer@uakron.edu.
This half-day workshop capitalizes on the growing trend of introducing active learning into geoscience lecture classes. The workshop will introduce faculty to a schema for developing their own materials and will provide an opportunity to develop and review such activities, to be collected for inclusion on the Cutting Edge Web site. Participants will leave the workshop with the pedagogical foundation and in-class learning resources they need to better engage their students.
- 4. Online Teaching of Introductory Geoscience Courses.** Sun., 11 April, 1–4 p.m. Fee: US\$15. Max.: 24; min.: 15. Vicki Harder, Western New Mexico Univ., harderv@wnmu.edu; Mary Dowse, Western New Mexico Univ.
Online teaching used to be mainly a small school and community college endeavor, but it now has a potential to reach other target audiences. This interactive workshop is for instructors who have been teaching online and those who are just getting started. Best practices and ideas from participants will be presented and shared.

5. **Exploring the Wonders of Geoscience through Use of GSA CD-ROM Teaching Resources.** Tues., 13 April, noon–1:30 p.m.; lunch provided. Fee: US\$35. Max.: 24; min.: 15. Mélida Gutierrez, Missouri State Univ., mgutierrez@missouristate.edu; Kenneth Thompson, Emporia State Univ.

Three GSA CD-ROMs (Silicate Minerals, Explore Volcanoes and Explore Deep Time) will be introduced, some of the examples will be worked out, and specific applications of these materials will be discussed.

6. **Geoscience Education: Introducing Students to Subsurface Characterization Using Small County.** *Cosponsored by MAGT.* Sun., 11 April, 1–4 p.m. Fee: US\$25. Max.: 24; min.: 15. Geoffrey C. Bohling, Kansas Geological Survey, geoff@kgs.ku.edu; John H. Doveton, Kansas Geological Survey; Cinzia Cervato, Iowa State Univ.

Two virtual subsurface exercises reflecting the geological characteristics of the U.S. mid-continent in the fictional setting of Small County, Kansas will be presented. In the introductory-level version, students drill a sequence of wells in an attempt to locate the peak of a single anticlinal structure, receiving immediate feedback on the elevation of the formation top of interest after each well is drilled. In the advanced version, students interpret a set of logs obtained in each well, picking the top elevations of a sequence of formations, along with interpreting lithologies and fluid saturations versus depth in the well. Small County is funded by a grant from the National Science Foundation.

SPECIAL EVENTS

Welcoming Reception. Sun., 11 April, 5:30–8:30 p.m., Taneycomo Ballroom, Branson Convention Center.

Association for Women Geoscientists Breakfast. Mon., 12 April, 7–8:30 a.m. Cost: US\$24.

Happy Hour. Mon., 12 April, 4:30–6:30 p.m., Taneycomo Ballroom, Branson Convention Center.

Paleontological Society Reception. Mon., 12 April, 6:30–8 p.m.

BUSINESS MEETINGS

All business meetings will be held at the Branson Convention Center. If you are interested in scheduling a meeting, breakfast, or luncheon for your group, contact Nancy Williams, +1-417-496-2187, nancywilliams@missouristate.edu.

North-Central Section GSA Management Board Meeting. Mon., 12 April, 7–8 a.m.

Great Lakes SEPM and the Paleontological Society Luncheon and Business Meeting. Mon., 12 April, noon–1 p.m. Cost: US\$29.

Central Section, National Association of Geoscience Teachers. Mon., 12 April, noon–1 p.m. Cost: US\$25.

North-Central and South-Central GSA Campus Representatives and Technical Program Advisory Board Meeting. Tues., 13 April, 7–8 a.m.

North-Central Section GSA Business Meeting. Mon., 12 April, 5:15–5:30 p.m.

South-Central Section GSA Business Meeting. Mon., 12 April, 6–7 p.m.

OPPORTUNITIES FOR STUDENTS

Mentor Programs

Please go to www.geosociety.org/mentors/ for more information about these programs. Every registered student will receive free tickets to attend the luncheons, but attendance is limited, and meals are on a first come, first served. *Cosponsored by the GSA Foundation.*

1. **Roy J. Shlemon Mentor Program in Applied Geoscience.** Mon.–Tues., 12–13 April, lunchtime. This program is designed to extend the mentoring reach of individual professionals from applied geology to both undergraduate and graduate students. Over FREE LUNCHEONS, mentors discuss professional opportunities and challenges after graduation.
2. **The John Mann Mentors in Applied Hydrogeology Program.** Mon., 12 April, lunchtime. This program presents mentoring opportunities for undergraduate, graduate, and recent graduate students with a declared interest in applied hydrogeology as a career to interact and network with practicing hydrogeology professionals over a FREE LUNCH.

Travel Grants

Application deadline: 8 March

Travel grants are available for students registered for the meeting to present oral or poster papers. Students must be GSA members and should apply to their respective sections; students from outside the NC or SC Section regions should apply to the Section that is geographically closer. Please go to www.geosociety.org/grants/travel.htm for application details.

Volunteering

If you would like to volunteer at the meeting in exchange for complimentary registration, please contact Damon Bassett, dbassett@missouristate.edu, *before* you register.

EXHIBITS

Deadline to reserve exhibit space and be listed in the meeting program: 8 February

Deadline to reserve on a first-come, first-served basis: 15 March

Reserve your exhibit space in the beautiful Taneycomo Ballroom, where attendees will gather Sunday evening for the Welcoming Reception and entertainment, and throughout the meeting for poster sessions and breaks. Contact Doug Gouzie, +1-417-836-5228, douglasgouzie@missouristate.edu; or Dan Suchy, +1-785-864-2160, dsuchy@kgs.ku.edu. Go to www.geosociety.org/sectdiv/Northc/2010mtg/exhibits.htm for information.

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Sponsorship opportunities to promote your organization and support meeting events are still open. Questions? Contact Doug Gouzie, +1-417-836-5228, douglasgouzie@missouristate.edu.



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44th Annual Meeting, South-Central Section, GSA
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