SOUTH-CENTRAL Section Meeting
13–14 March 2017
Omni San Antonio Hotel at the Colonnade
San Antonio, Texas, USA
Program
SOUTH-CENTRAL
51st Annual Meeting of the South-Central Section, GSA
San Antonio, Texas, USA
13–14 March 2017

Geosciences in the Heart of Texas

Local Program Committee
General Chair ................................................................. Benjamin Surpless
Technical Program Chair .................................................. David Turner
Field Trip Chair ............................................................... Daniel Lehrmann
Student Volunteer Coordinators ......................................... Gil Gomez and Sherry Wood
Exhibits Coordinator .......................................................... Benjamin Surpless
Sponsorship Coordinator ...................................................... Robert Stern

GSA South-Central Section Officers for 2017–2018
Chair ................................................................. Benjamin Surpless
Vice Chair ............................................................... Jeffrey Connelly
Past Chair ................................................................. Peter Clift
Secretary/Treasurer .......................................................... Wm. Jay Sims
Management Board ............................................................ Stephen Boss, Todd Halihan, Antony (Tony) Giles,
Jonathan Sumrall, Antonio Cardona, Matthew Kirk, Elizabeth Catlos

NOTICE
By registering for this meeting, you have acknowledged that you have read and will comply with the GSA Code of Conduct for Events (full code of conduct listed on page 12). If you need to report unacceptable behavior, please contact:
GSA Executive Director, Vicki McConnell, vmcconnell@geosociety.org
GSA President, Claudia Mora, president@geosociety.org
You may also stop by registration or the GSA Bookstore to have them directly contacted via phone.
As President of Trinity University, it is a pleasure to welcome you to San Antonio for the annual meeting of the South-Central Section of the Geological Society of America, hosted by Trinity University and the Department of Geosciences. We are proud to host the 51st annual meeting, and we hope you will take advantage of all that San Antonio and the surrounding area has to offer.

It is exciting to see the breadth of professional activities at your conference. With field trips involving everything from water and energy resources to cave systems and karst topography, I can see opportunities for those from different geoscience backgrounds to interact on the outcrop, in the kayak, or in the cave. The variety of your technical sessions is also impressive, with topics ranging from the tectonic evolution of the south-central region to fostering cultures of inclusion in the geosciences. I expect this meeting to provide a venue for excellent scientific discussions across a range of geoscience disciplines.

I am especially pleased to see the range of student-focused activities at your meeting. I admire the clear focus of your mentor lunches, career-planning sessions, and student awards program. I am also impressed with the abundant opportunities for undergraduate and graduate students to interact with geoscience professionals; these interactions can be invaluable to young scientists. I think students will gain a great deal from this year’s meeting.

Once again, welcome to San Antonio and the 51st annual meeting of the South-Central Section of the Geological Society of America. If you haven’t visited Trinity University since we hosted the 2005 South-Central meeting, I invite you to take a campus tour while you’re in town. Best wishes for an invigorating and fruitful meeting.

Sincerely,

Danny Anderson
President
LOCATION

The 51st Annual Meeting of GSA’s South-Central Section, hosted by Trinity University, will take place at the Omni Hotel at the Colonnade in northwest San Antonio, Texas. This location offers convenient access to a variety of opportunities for entertainment, shopping, food, and drink, with many businesses in walking distance from the conference. San Antonio boasts a wide range of local attractions, including the Spanish Missions National Historic Park, the Riverwalk, Six Flags Fiesta Texas, world class museums, and a thriving culinary scene ranging from street food to five-star fare.

San Antonio, originally founded as Mission San Antonio de Valero in 1718, has a rich and varied history, from pre-colonial Native American settlements near the springs along the Balcones escarpment, to the arrival of Spanish colonists in the 17th century, to the vibrant, multi-cultural city that it is today. The Spanish established five missions along the San Antonio River, including the Mission San Antonio de Valero (later known as the Alamo). These missions are now part of a National Historic Park that winds along the San Antonio River to the south of downtown San Antonio, along the world-famous Riverwalk.

The Riverwalk now extends for more than 13 miles, thanks to recent expansions both north and south of Downtown. The Riverwalk is divided into “reaches,” including the Museum Reach (with sites like the San Antonio Zoo, the Witte Museum, Brackenridge Park, and the San Antonio Museum of Art), the Downtown Reach (the Alamo, the Tower of the Americas, Hemisfair Park, and the Shops at Rivercenter), and the Mission Reach (including Mission Concepcion, Mission San Jose, Mission San Juan, and Mission Espada). The river itself, now fed primarily by recycled water, varies in its character as one walks or bikes from one reach to the next.

San Antonio owes its existence and growth to the Edwards aquifer system, which provides most of the city’s water supply. The local area provides spectacular examples of aquifer dynamics, including surface karst features, artesian springs, and spectacular cave systems within a short drive of the Omni Hotel at the Colonnade. As the urban area has expanded over the past several decades, increasing demand for water has resulted in some of the more interesting and forward-looking water management agreements in the nation. However, because demand for water is expected to increase in the coming years, water management in the San Antonio area remains controversial and will be the topic of discussion at this year’s meeting.

Visitors interested in local culture, history, and entertainment will find abundant and varied opportunities to satisfy their thirst for recreation in the San Antonio area. For more information about recreational opportunities in the area, visit: http://visitsanantonio.com/. Thanks to the B-cycle program, bikes are available to rent and can be returned at many locations along the Riverwalk and throughout San Antonio. When you have some time before or after the meeting, explore the city!

TRANSPORTATION

San Antonio is accessible by a number of different transportation methods (see map on page 5). From the west, it is readily accessible by interstates 10 and 90, from the north via interstate 281, from the northwest via interstate 35, from the east via interstate 10, and from the south via interstates 35 and 281. There are two loops around San Antonio, including an inner loop (interstate 410) and an outer loop (highway 1604). People preferring to fly will arrive at the San Antonio airport, near the intersection of highways 281 and 410 in north San Antonio. From the airport, it is just an 8-mile drive to the Omni Hotel at the Colonnade. If using Google Maps or other internet mapping software, use the address: 9821 Colonnade Blvd, San Antonio, TX 78230. Uber is available in San Antonio, if you wish to visit sites in the San Antonio area.

PARKING

The Omni Hotel at the Colonnade has valet parking available for US$15, and self-parking is also available at no charge. Those staying at the hotel have complimentary parking.

EATING AND DRINKING

There are a number of restaurants within walking distance of the Omni Hotel that should suit all tastes and finances. There are also places to enjoy local microbrews, coffee, or other lighter fare. These include the following (please refer to the map on page 5 for locations). San Antonio has a wide variety of dining options within easy driving distance, too, so be sure to explore your options online or with your smartphone.

- **Alamo Café ($$)**, Classic Tex-Mex fare
- **Asian Star Buffet ($)**, Chinese, Japanese, Asian-fusion buffet-style restaurant
- **Bolo’s ($$$)**, Classic American Cuisine (in the Omni Hotel)
Map of the San Antonio area, displaying the highway network and sites of interest.

- Omni Hotel (meeting headquarters)
- San Antonio International Airport
- 6 Flags Fiesta TX and La Cantera shopping
- SeaWorld
- San Antonio Zoo and the Witte Museum
- The McNay Art Museum
- The Doseum (children’s museum)
- Downtown, including the Alamo, the Riverwalk, the Mission Trail, and much, much more)

Map of the area near the Omni San Antonio Hotel at the Colonnade, showing location of meeting venue and nearby hotels and restaurants.

KEY

GSA Meeting: 🌟
Restaurants: (White with black text)
Hotels: (Black with white text)

Downtown, San Antonio
BreWingz Bar and Grill ($$), Wings, burgers, brews, and sandwiches
Chester’s Hamburgers ($), Burger joint
The County Line ($$), Texas BBQ
The Egg and I ($$$), Traditional breakfast fare
Ember’s Wood-fired Grill and Bar ($$), Wood-fired pizza, burgers, ribs, sandwiches
Firehouse Subs ($), sub sandwiches
Fuddruckers ($$$), Traditional American burgers and sandwiches
Goomba’s Pizzeria ($), Pizza, calzones, sandwiches
Jason’s Deli ($), Traditional American fare, sandwiches, salad
Mamma Margie’s ($), Mexican restaurant (open 24 hours)
Naara Café and Hookah ($$$), Middle-eastern and Mediterranean fare
Pappacito’s Cantina ($$$), Classic Tex-Mex fare
Pasha Mediterranean Grill ($$$), Mediterranean fare
Pizza Hut ($), American pizzeria
Sea Island Shrimp House ($$), Seafood restaurant
Starbuck’s Coffee ($) coffeehouse
Texas Land and Cattle Steakhouse ($$$), Traditional American Steak and Seafood
Wasabi ($$$), Sushi bar
Zushi Sushi ($$$), Sushi bar

VENUE
The meeting location is in northwest San Antonio at the Omni Hotel at the Colonnade. Pre-meeting field trips are departing from the lobby of the hotel, and workshops are being held in rooms inside the hotel complex.

WEATHER
In late March, south Texas experiences some of the best weather of the year, with daytime temperatures in the mid-70s, lows in the low 50s, spring breezes, and low humidity. Although March is a relatively dry month in San Antonio, rain is possible, so the well-prepared attendee will bring rain gear.

MEETING APP
A web-based app is available for this meeting. Please download the app at https://gsa.confex.com/gsa/2017SC/meetingapp.cgi.

REGISTRATION
Registration is required for anyone attending technical sessions, field trips, short courses, or exhibits. Check-in and on-site registration is in the Omni Hotel at the Colonnade, Foyer, on the following schedule:

Sunday, 12 March 3 p.m.–7:30 pm
Monday, 13 March 7 a.m.–4:30 p.m.
Tuesday, 14 March 7 a.m.–2 p.m.

Registration Fees
On-site registration fees are below and are shown in U.S. dollars. Professionals registering for the meeting are encouraged to add US$15 to their registration fee to help a student attend the meeting.

<table>
<thead>
<tr>
<th>Registration Category</th>
<th>Standard Full Mtg.</th>
<th>One day</th>
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</thead>
<tbody>
<tr>
<td>Professional Member</td>
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<tr>
<td>Field Trip/Workshop Only</td>
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<td>$70</td>
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</table>

ABSTRACTS
To view abstracts for this meeting, please go to https://gsa.confex.com/gsa/2017SC/webprogram/start.html.

ACCOMMODATIONS
Reservations for the Omni Hotel at the Colonnade, can be made by calling +1-210 691-8888. Please mention that you are attending the South-Central meeting of the Geological Society of America. There is an additional 16.75% tax rate on San Antonio hotel rooms.

SPECIAL EVENTS
Welcome Reception. Sunday 12 March, 5–7 p.m., Colonnade Ballroom, 20th floor of the Omni Hotel at the Colonnade. Enjoy light snacks and a complimentary beverage while connecting with your colleagues and enjoying a beautiful view of San Antonio. Each participant receives a coupon for one free beer, wine, or non-alcoholic beverage in their registration packet.

Keynote Address and Reception. Monday, 13 March, 5–7 p.m., Grand Ballroom CDE. Enjoy light snacks and a complimentary beverage before and during the keynote presentation at 6 p.m., Preparing Students for the Future Geoscience Workforce, by Dr. Sharon Mosher, Dean of the Jackson School of Earth Sciences at the University of Texas at Austin. Each participant receives a coupon for one free beer, wine, or non-alcoholic beverage in their registration packet.

Student Award Ceremony. Sponsored by Trinity University. Tuesday, 14 March, 5–5:30 p.m., Grand Ballroom CDE. Come find out which undergraduate and graduate students won awards for their oral or poster presentations!

BUSINESS MEETING
South-Central Section Management Board Meeting. Monday, 13 March, noon–1:30 p.m., Bolo’s PDR.
South-Central Section Open Meeting. Tuesday, 14 March, 7–8 a.m., Bolo’s PDR.
Floor plans of the Omni Hotel at the Colonnade

GRAND BALLROOM

Posters, Exhibits, and Keynote Address

Oral Presentations

Oral Presentations

REGISTRATION

SERVICE CORRIDOR (no access)

ATM

FIRST FLOOR

CONFERENCE CENTER B

CONFERENCE CENTER A

SAM HOUSTON ROOM (speaker ready room)

BOARD ROOM

ADMIN

ATRIUM

SECOND FLOOR

HOTEL SUITES

SERVICE AREA

BALLROOM FOYER

COLONNADE BALLROOM

B

A

C

TWENTIETH FLOOR
TECHNICAL PROGRAM

Speaker Ready Room

The Speaker Ready Room is located in the Sam Houston Room, second floor, and is available for use at the times listed below. Computers and assistance will be available to view presentations. All presentations will be displayed as PowerPoint presentations in technical sessions. The ready room can be used to check presentations prior to uploading files. We ask that oral presenters upload their presentations the night prior for morning sessions at least 2 hours prior to the beginning of their session for afternoon sessions.

Speaker Ready Room Hours
Sunday, 12 March 4–7 p.m.
Monday, 13 March 7–5:30 p.m.
Tuesday, 14 March 7 a.m. – noon

Theme Sessions

T1. Advances in Understanding Precambrian to Cenozoic Magmatic and Metamorphic Processes and their Bearing on Lithospheric Evolution of Southern Laurentia. Elizabeth Carlos, Univ. of Texas at Austin; ejcatorls@gmail.com; Michael DeAngelis, Univ. of Arkansas Little Rock; mtddeangelis@ualr.edu; Richard Hansen, Texas Christian Univ., rhanson@tcu.edu.

T2. Advances in the Application and Development of Terrestrial Paleoclimate Proxies. Marina Suarez, Univ. of Texas at San Antonio, Marina Suarez Trusts; Steven Driese, Baylor Univ., Steven_Driese@baylor.edu; Dan Brecker, Univ. of Texas at Austin, brecker@jsg.utexas.edu.

T3. Advances in Sedimentology, Stratigraphy, and Geochemistry of Carbonates and Mixed Carbonate Clastic Systems. Dan Lehrmann, Trinity Univ., dlehrmann@trinity.edu; Andre Droxler, Rice Univ., andre@rice.edu.

T4. The Impact of Oceanographic Conditions, Oaes, and Volcanism on an Unconventional Reservoir System: The Late Cretaceous Eagle Ford and Austin Chalk Groups of the Gulf Coast. Alexis Godet, Univ. of Texas at San Antonio, Alexis.Godet@utsa.edu; Michael Pope, Texas A&M Univ., mcpope@tamu.edu; Robert Stern, Univ. of Texas at Dallas, rjstern@utdallas.edu; Jon Snow, Univ. of Houston, jnsnow@uh.edu; Steve Bergman, Shell International Exploration and Production (Houston), scberman@sbglobal.net.

T5. Micro- to Macroscopic Evidence of Life and its Implications for the Evolution and Interpretation of the Biosphere in Earth Systems. Stephen Hasiotis, Univ. of Kansas, hasiotis@ku.edu; Thomas Adams, Witte Museum, thomas.adams@wittemuseum.org; William Foster, Univ. of Texas at Austin, wfoster@jsg.utexas.edu; Sophie Warney, Louisiana State Univ., swarney@lsu.edu.

T6. Karst: From Sinkholes to Springs and Everything in Between. Geary Schindel, Edwards Aquifer Authority, gschindel@edwardsaquifer.org; Jon Sumrall, Sam Houston State Univ., karsh@shsu.edu; Brian Hunt, Barton Springs/Edwards Aquifer Conservation District, brianhs@sbcglobal.org.

T7. Subsurface Exploration Techniques in the South-Central U.S. Evelyn Mitchell, Saint Mary's Univ., emitchell1@stmarytx.edu; Ronald Green, Southwest Research Institute, ronald.green@swri.org.

T9. Fostering Cultures of Deliberate Inclusion in Geosciences. Boss, Stephen K., Univ. of Arkansas, sboss@uark.edu.

T10. Late Paleozoic Tectonic Framework of the South-Central Region and Evolution of the Permian Basin. Robert Stern, Univ. of Texas at Dallas, rjstern@utdallas.edu; Thomas Ewing, Frontera Exploration Consultants, tewing@fronteraexploration.com; Lowell Waite, Pioneer Natural Resources, lowell.waite@pxd.com.

T11. Petroleum and Water Interactions in Mexico’s South-Central Region. Antonio Cardona, Oklahoma State Univ., antonio.cardona@okstate.edu; Todd Halihan, Oklahoma State Univ., todd.halihan@okstate.edu; Martin Carlos Vidal Garcia, Mexican Geohydrologic Association and Universidad Nacional Autónoma de México, martin.carlosv@yahoo.com.mx.

T12. Upper Crustal Deformation across Continental Interiors from the Mesozoic to the Present. Keith Gray, Wichita State Univ., k.gray@wichita.edu; M. McKay, Missouri State Univ., mcmckay@gmail.com; B. Surpless, Trinity Univ., bsurples@trinity.edu.

T13. Texas Water Research Network: A Statewide Initiative to Integrate and Advance Water Research from Inception to Application I. Suzanne A Pierce, Texas Advanced Computing Center, spierce@tacc.utexas.edu; Kevin Wagner, Texas A&M Univ., klwagner@ag.tamu.edu; Suzanne Schwartz, Univ. of Texas at Austin, S.Schwartz@law.utexas.edu; Jay Banner, Environmental Science Institute, Univ. of Texas at Austin, banner@jsg.utexas.edu.

T14. Groundwater Availability in Texas: Rule of Capture and Sustainable to Consensus Yield. Brian Hunt, Barton Springs Edwards Aquifer Conservation District, brianh@sbcglobal.org; Jack Sharp, Jackson School of Geosciences, Univ. of Texas at Austin, jmsahar@jsg.utexas.edu; Suzanne A Pierce, Texas Advanced Computing Center, sawpierce@gmail.com.

T15. Undergraduate Students (Posters). Elizabeth A. Heise, School of Earth, Environmental and Marine Sciences, Univ. of Texas at Rio Grande Valley, elizabeth.heise@utrgv.edu.

DISCIPLINE SESSIONS

• Recent Advances in Geoscience Research
• Research in Hydrogeology, Geochemistry, and Soils (Posters)
• Research in Sedimentology and Stratigraphy (Posters)
• Research in Structural Geology, Geomorphology, and Igneous Processes (Posters)

PRE-MEETING FIELD TRIPS

All trips depart from the Omni Hotel at the Colonnade unless otherwise noted. For additional information, please contact Field Trip Chair, Dan Lehrmann, dlehrmann@trinity.edu.

This field trip will provide an overview of the Edwards Aquifer and include discussions on water-quality issues related to urbanization and competing demands for groundwater from agricultural, municipal, industrial, ecological, and recreational interests along the rapidly growing San Antonio–Austin corridor. Field trip stops will include cave entrances in an urban setting; a flood control/recharge dam; urban development; aquifer monitoring and research initiatives; a highly faulted outcrop of the Edwards Limestone; Comal Springs, the largest spring in the southwest; and saline monitoring wells.


This trip visits Robber Baron Cave, a former commercial cave located near the San Antonio airport. The trip will see much of the mile-long cave and will include some crawling and climbing. You should be in moderate physical shape. We recommend wearing sturdy boots, long pants, and an old T-shirt for the trip as the cave temperature is approximately 70 degrees F and 100% humidity. We will discuss speleogenesis and management of cave and karst features in an urban environment. The cave is the only known location of the endangered Robber Baron Cave Spider. The cave also has a number of geologic features related to hypogenic speleogenesis and may be a paleospring related to the underlying Edwards Aquifer. The trip will last 3 to 4 hours.


The trip highlights recharge, flow, and discharge from the Trinity Aquifer and examines specific important hydrogeological features that have been the focus of recent studies. Stops will include faults, springs, and exposures of the lower Cretaceous stratigraphy. Topics covered include hydrology, karst, stratigraphy, and structure.

F4. The Eagle Ford and Austin Chalk Groups in and around San Antonio. Sun. 12 March, 8 a.m.–4:45 p.m. Cost: $100 includes transportation in minibuses, field guidebook, breakfast, lunch box and refreshments (water, soda). Co-sponsored by GSA Sedimentary Geology Division.

Principal Organizers: Alexis Godet, Univ. of Texas at San Antonio, alexis.godet@utsa.edu; John Cooper, Univ. of Texas at San Antonio, jcgolf.cooper@gmail.com. Co-organizers: Michael Pope, Texas A&M Univ., mcpope@mu.edu.

During the Late Cretaceous, global oceanic anoxic events and oceanographic trends shaped the sedimentation style in the northern Gulf of Mexico by favoring the deposition of organic-rich marls (Eagle Ford Group) and thick muddy carbonates (Austin Chalk Group). We invite contributions that aim to (1) refine the Late Cenomanian–Early Campanian; (2) assess the driving mechanisms of regional trends in facies changes; and (3) assess the impact of global phenomena on the sediment production along the northern margin of the Gulf of Mexico.


This trip focuses on the processes involved in erosion of the gorge during a catastrophic flood; the marine sedimentary facies, fossils, sequence stratigraphy and depositional environments of the Glen Rose Formation; and the structure of the Hidden Valley fault system. We will also investigate what can be learned from the dinosaur trackways.

F6. Precambrian Geology of the Western Llano Uplift. Sat.–Sun., 11–12 March, 7:30 a.m.–3 p.m. Cost $125 includes guidebook, transportation, Sat. lunch and dinner; Sun. breakfast, snacks, lodging on Sat. March 11th at a Texas Department of Parks and Wildlife ranch bunkhouse (bring your own bedding/sleeping bag). Sun. lunch on own. Principal Organizer: Mark Helper, Jackson School of Geosciences, University of Texas at Austin, helper@jsg.utexas.edu.

Co-organizer: Sharon Mosher, Jackson School of Geosciences, University of Texas at Austin, smosher@jsg.utexas.edu.

This two-day trip examines Grenville-age deformational, metamorphic, and magmatic relationships at well-studied sites in the western Llano uplift, near Mason, Texas. The focus is on Packsaddle Schist marbles and gneisses that display polyphase folding, fabric development, and migmatization associated with early dynamic metamorphism and magmatism, and on the post-kinematic Katemcy pluton.

F7. Cambrian Microbialites and Associated Marine Facies, Llano River, Mason County. Fri.–Sun., 10–12 March, 5:30 p.m. departure Friday. Return 5 p.m. Sun. Cost: $380 includes transportation, refreshments, guidebook, kayak rental, and lodging at the Honey Creek Ranch on the Llano River Fri and Sat nights. Meals are covered by participants at local restaurants. Co-sponsored by GSA Sedimentary Geology Division.

Principal Organizer: Andre Droxler, Rice Univ., andre@rice.edu. Co-organizer: Dan Lehrmann, Trinity Univ., dlehrmann@trinity.edu.

Microbialites are important components of marine depositional systems from Precambrian to recent. We will examine
large Cambrian microbialite buildups and oolitic-skeletal grainstones that are spectacularly exposed in cross section and plan view. Their architecture and genesis will be analyzed in the context of sequence stratigraphy and mixed carbonate-siliciclastic sedimentation.

WORKSHOPS


Join Camera Wings Aerial Photography and learn about drone integration into geoscience research. You will get a unique opportunity to see the latest equipment and cutting-edge projects and discuss the regulatory environment surrounding this new technology. You can’t afford to be left behind!

W2. Ethics Training Seminar for Texas Board of Professional Geologist Continuing Education. Sun., 12 March, 1–2 p.m., Conference Center B. Cost: $5. Principal Organizer: T. Wesley McCoy, P.G., Texas Board of Professional Geoscientists, wmccoy@tbpg.state.tx.us.

This one-hour training session is designed to meet the annual ethics-training requirement for annual renewal of Texas Geoscientist Professional Geologist licensing.

EXHIBITS

Exhibits are located in the Grand Ballroom CDE and are open from 8 a.m. to 5:30 p.m., both Monday and Tuesday, 13–14 March.

EXHIBITORS

As of January, the following exhibitors have agreed to be part of the exhibits.

- 2018 SC Section Meeting—Little Rock, Arkansas
- Beta Analytical Inc.
- Eureka Water Probes
- Geological Society of America Bookstore
- Geological Society of America Foundation
- International Chemical Analysis Inc (ICA)
- National Association State Boards of Geology
- North Central Instruments: Experts in Microscopy, Imaging and Histology (NCI/LEICA)
- Raba Kistner, Inc.
- Shimadzu Institute for Research Technologies, Univ of TX Arlington
- St. Mary's University
- Stephen F. Austin State University
- Water Monitoring Solutions, Inc.

OPPORTUNITIES FOR STUDENTS

On To the Future (OTF). Stop by the GSA Foundation booth at the Welcome Reception or in the Grand Ballroom during the meeting to ask an onsite representative about applying to OTF, which provides travel support to students underrepresented in the geosciences to attend their first GSA Annual Meeting (the next one is 22–25 Oct. 2017 in Seattle, Washington, USA).

Mentor Programs. Co-sponsored by the GSA Foundation. The Mentor Programs and the Career Workshops are located in the Colonnade Ballroom CA on the 20th floor of the Omni Hotel at the Colonnade. For more information on the mentor programs, go to www.geosociety.org/mentors/ or contact Jennifer Nocerino, jnocerino@geosociety.org.

Geoscience Career Workshop Part 1: 8–9 a.m., Monday, 13 March, Career Planning and Informational Interviewing. Your job-hunting process should begin with career planning, not when you apply for jobs. This workshop helps you begin this process and introduces you to informational interviewing. This section is highly recommended for freshman, sophomores, and juniors. The earlier you start your career planning, the better.

Geoscience Career Workshop Part 2: 9–10 a.m., Monday, 13 March, Geoscience Career Exploration. What do geologists in various sectors earn? What do they do? What are the pros and cons to working in academia, government, and industry? Workshop presenters and professionals in the field address these issues.

Geoscience Career Workshop Part 3: 9–10 a.m., Tuesday, 14 March, Cover Letters, Resumes and CVs. How do you prepare a cover letter? Does your resume need a good edit? Whether you are currently on the job market or not, learn how to prepare the best resume possible. You will review numerous resumes helping you to learn important resume do’s and don’ts.

Roy J. Schlemon Mentor Program in Applied Geoscience. Monday, 13 March, Lunchtime. Students have the opportunity to discuss career prospects and challenges with professional geoscientists from multiple disciplines over a FREE lunch. Learn more about this program at http://www.geosociety.org/mentors/.

John Mann Mentors in Applied Hydrogeology Program. Tuesday, 14 March, Lunchtime. Students interested in applied hydrogeology or hydrology as a career will have the opportunity to network with professionals in these fields over a FREE lunch. Learn more at http://www.geosociety.org/mentors/.

OTHER PROFESSIONAL OPPORTUNITIES

The Future Geosciences Job Market: A Faculty and K–12 Mentor Lunch. Colonnade Ballroom B on the 20th floor, noon–2 p.m., Monday, 13 March. $5/ticket for lunch, available in advance or at the Meeting Registration table. Attendance limited to university/college professors and high school earth science teachers.

Early Career Professional Focus Group. Colonnade Ballroom CA on the 20th floor, 10:30–11:30 a.m. a.m., Tuesday, 14 March. Have you graduated in the last five years and are either a working professional or are still looking for a job? GSA would like to support you in pursuing your professional goals. During this 45-minute session, a series of questions will be asked of participants regarding potential programming and activities GSA could offer to help you reach your professional goals.
VOLUNTEER

The South-Central Section offers free meeting registration to student volunteers in return for two shifts of ~4 to 5 hours of work during the meeting. If you are a student interested in volunteering, please contact one of the Student Volunteer Coordinators, Gil Gomez (ggomez18@stmarytx.edu) or Sherry Wood (swood@stmarytx.edu).

Student Volunteer area (Foyer D). Students will meet with the Volunteer Coordinator before the meeting begins in the Foyer D area for their assignments and training, where needed.

Student Award Ceremony. Sponsored by Trinity University. This year, South-Central Section GSA is awarding cash prizes and plaques to the best graduate and undergraduate posters and oral presentations. Judging of student oral and poster presentations take place throughout the meeting, and award winners’ names will be announced Tuesday, 14 March, 5–5:30 p.m., Grand Ballroom CDE.

SPOUSE & GUEST ACTIVITIES

The Omni Hotel at the Colonnade offers a wide variety of activities for both recreation and relaxation. These include a state-of-the-art fitness facility, indoor and outdoor pools, and the hotel concierge can arrange for a wide range of recreational activities, including billiards, boating, bowling, camping, fishing, hiking, horseback riding, racquetball, tennis, volleyball, water skiing, or almost anything you imagine in the San Antonio area. You might also take advantage of area lakes, parks, shopping, or golf. For a more complete range of San Antonio recreation options, visit: http://visitsanantonio.com/.

EMERGENCIES

For all emergencies dial 911.

Sponsors

Riverwalk Level

Mission Trail Level

Brackenridge Park Level
CODE OF CONDUCT AT GSA EVENTS

Approved by GSA Council on 25 September 2016

GSA is a premier, international scientific society whose goals and mission are to advance geoscience research and discovery, to provide service to society and to promote stewardship of Earth, within and beyond the geosciences profession. In fulfilling its goals and mission, and in keeping with its Diversity Position Statement, GSA meetings foster the exchange of scientific ideas, through open and respectful dialogues at oral and poster sessions, field trips, short courses, mentorships and other GSA-supported programs. GSA promotes, provides, expects and endorses a professional and respectful atmosphere and values a diversity of views and opinions.

All registrants, guests, volunteers, exhibitors, GSA staff, service providers, and others in attendance are expected to abide by this GSA Events Code of Conduct, which outlines specific expectations for participants at GSA-supported events and is in addition to the provisions of the GSA Code of Conduct.

Expected Behavior

All registrants, guests, volunteers, exhibitors, GSA staff, service providers, and others in attendance are to:

- Be treated with respect and consideration.
- Be considerate, collegial, and collaborative.
- Communicate openly, with civil attitudes, critiquing ideas rather than individuals.
- Avoid personal attacks directed toward other registrants, guests, volunteers, exhibitors, GSA staff, service providers, and others in attendance.
- Obey the rules and policies of the meeting venue, hotels, GSA contracted facility, or any other venue where your meeting badge and GSA affiliation is likely to be displayed.
- Alert meeting security personnel, GSA staff, or GSA leadership if you notice someone in distress, or perceive a potentially dangerous situation, or witness a dangerous situation.

Procedures to be followed in an emergency situation:

- Evaluate the situation and if appropriate call 911 or activate a local fire alarm.
- Do not endanger yourself. Follow the directions of building security, law enforcement, fire department, military personnel, or GSA staff.
- Initiate first aid if appropriate, so trained and necessary.
- Be as observant as possible in order to communicate to emergency staff.

Unacceptable Behavior includes but is not limited to:

- Physical or verbal abuse of any registrant, guest, volunteer, exhibitor, GSA staff, service provider, or other attendee.
- Disruption of presentations at oral or poster sessions, in the exhibit hall, on field trips, or at other events organized by GSA at the meeting venue, hotels, or other GSA-contracted facilities.
- Audio and video recording, or taking images of an individual’s oral presentation without the presenters’ permission, is expressly forbidden. Images of posters taken without permission are not allowed. Images of posters may be taken with the explicit consent of the presenter, and images may be acquired only in the presence of the presenter.

Examples of unacceptable behavior include but are not limited to:

- Verbal comments related to gender, sexual orientation, disability, physical appearance, body size, race, religion, national origin or any other identified characteristic outlined in the GSA Diversity Position Statement.
- Inappropriate use of nudity and/or sexual images in public spaces or in presentations.
- Intentional, uninvited physical contact of any form.
- Threats (implied or real) of, physical, professional or financial harm.
- Stalking registrants, guests, volunteers, exhibitors, GSA staff, service providers, or others in attendance.

Consequences of Unacceptable Behavior

- Anyone requested to stop unacceptable behavior is expected to immediately cease and desist.
- GSA staff, leadership, security, or law enforcement personnel shall take action(s) deemed necessary and appropriate. Actions may include immediate removal from the meeting or field trip without warning or refund.
- GSA reserves the right to prohibit attendance at any future GSA meeting or other GSA-sponsored event.

Reporting Unacceptable Behavior

If you are the subject of unacceptable behavior or have witnessed any such behavior, please immediately notify a GSA staff member on-site (see page 2 for contact information) or GSA member with a designated leadership position (i.e. GSA President, GSA Councilor, GSA Section Officer, GSA field trip leader).

Anyone experiencing or witnessing behavior that constitutes an immediate or serious threat to public safety, or a criminal act is expected to contact 911. Those witnessing a potential criminal act should also take actions necessary to maintain their own personal safety.
# Schedule of Events

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<thead>
<tr>
<th>EVENT</th>
<th>TIME</th>
<th>LOCATION</th>
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<tbody>
<tr>
<td><strong>FRIDAY, 10 MARCH</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>F7. Cambrian Microbialites and Associated Marine Facies, Llano River, Mason County (Day 1) (Field Trip)</td>
<td>5:30–11:55 p.m.</td>
<td>Omni Colonnade San Antonio</td>
</tr>
<tr>
<td><strong>SATURDAY, 11 MARCH</strong></td>
<td></td>
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<tr>
<td>F6. Precambrian Geology of the Western Llano Uplift (Day 1) (Field Trip)</td>
<td>7:30 a.m.–11:55 p.m.</td>
<td>Omni Colonnade San Antonio</td>
</tr>
<tr>
<td>F1. The Edwards Aquifer—A Groundwater System Under Stress (Field Trip)</td>
<td>8:30 a.m.–5 p.m.</td>
<td>Omni Colonnade San Antonio</td>
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<tr>
<td><strong>SUNDAY, 12 MARCH</strong></td>
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<tr>
<td>F5. Cretaceous Sedimentary Succession, Dinosaur Tracksites, and Structural Geology of the Canyon Lake Gorge and Heritage Museum of the Hill Country (Field Trip)</td>
<td>7 a.m.–5 p.m.</td>
<td>Omni Colonnade San Antonio</td>
</tr>
<tr>
<td>F4. The Eagle Ford and Austin Chalk Groups in and around San Antonio (Field Trip)</td>
<td>8 a.m.–4:45 p.m.</td>
<td>Omni Colonnade San Antonio</td>
</tr>
<tr>
<td>F3. Hydrogeology of Major Trinity Aquifer Springs in the Blanco River Basin (Field Trip)</td>
<td>8 a.m.–5 p.m.</td>
<td>Omni Colonnade San Antonio</td>
</tr>
<tr>
<td>F2. South-Central Texas Underground (Field Trip)</td>
<td>11:30 a.m.–5 p.m.</td>
<td>Omni Colonnade San Antonio</td>
</tr>
<tr>
<td>W2. Ethics Training Seminar for Texas Board of Professional Geologist Continuing Education</td>
<td>1–2 p.m.</td>
<td>Conference Center B, 2nd Floor</td>
</tr>
<tr>
<td>W1. Cutting Edge Mapping with Drones: Practical and Cost Effective!</td>
<td>2–4 p.m.</td>
<td>Conference Center A, 2nd Floor</td>
</tr>
<tr>
<td>Registration Open</td>
<td>3–7:30 p.m.</td>
<td>Foyer ABCD</td>
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<tr>
<td>Speaker Ready Room</td>
<td>4–7 p.m.</td>
<td>Sam Houston Room, 2nd Floor</td>
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<tr>
<td>Welcome Reception</td>
<td>5–7 p.m.</td>
<td>Colonnade Ballroom, 20th Floor</td>
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<tr>
<td><strong>MONDAY, 13 MARCH</strong></td>
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<tr>
<td>Registration Open</td>
<td>7 a.m.–4:30 p.m.</td>
<td>Foyer ABCD</td>
</tr>
<tr>
<td>Speaker Ready Room</td>
<td>7 a.m.–5:30 p.m.</td>
<td>Sam Houston Room, 2nd Floor</td>
</tr>
<tr>
<td>Exhibits Open</td>
<td>8 a.m.–5:30 p.m.</td>
<td>Grand Ballroom CDE</td>
</tr>
<tr>
<td>Geoscience Career Workshop Part 1</td>
<td>8–9 a.m.</td>
<td>Colonnade Ballroom CA, 20th Floor</td>
</tr>
<tr>
<td>Geoscience Career Workshop Part 2</td>
<td>9–10 a.m.</td>
<td>Colonnade Ballroom CA, 20th Floor</td>
</tr>
<tr>
<td><strong>Morning Oral Technical Sessions</strong></td>
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<tr>
<td>T1. Advances in Understanding Precambrian to Cenozoic Magmatic and Metamorphic Processes and their Bearing on Lithospheric Evolution of Southern Laurentia</td>
<td>8 a.m.–noon</td>
<td>Grand Ballroom G</td>
</tr>
<tr>
<td>EVENT</td>
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<tr>
<td>T2. Advances in the Application and Development of Terrestrial Paleoclimate Proxies</td>
<td>8 a.m.–noon</td>
<td>Grand Ballroom F</td>
</tr>
<tr>
<td>T6. Karst: From Sinkholes to Springs and Everything in Between</td>
<td>8 a.m.–12:05 p.m.</td>
<td>Grand Ballroom B</td>
</tr>
<tr>
<td>T13. Texas Water Research Network: A Statewide Initiative to Integrate and Advance Water Research from Inception to Application I</td>
<td>8 a.m.–12:05 p.m.</td>
<td>Grand Ballroom A</td>
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**Poster Technical Sessions**

<table>
<thead>
<tr>
<th>EVENT</th>
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<tbody>
<tr>
<td>T1. Advances in Understanding Precambrian to Cenozoic Magmatic and Metamorphic Processes and their Bearing on Lithospheric Evolution of Southern Laurentia (Posters)</td>
<td>9 a.m.–5:30 p.m.</td>
<td>Grand Ballroom CDE</td>
</tr>
<tr>
<td>T2. Advances in the Application and Development of Terrestrial Paleoclimate Proxies (Posters)</td>
<td>9 a.m.–5:30 p.m.</td>
<td>Grand Ballroom CDE</td>
</tr>
<tr>
<td>T6. Karst: From Sinkholes to Springs and Everything in Between (Posters)</td>
<td>9 a.m.–5:30 p.m.</td>
<td>Grand Ballroom CDE</td>
</tr>
<tr>
<td>T15. Undergraduate Students (Posters)</td>
<td>9 a.m.–5:30 p.m.</td>
<td>Grand Ballroom CDE</td>
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**Roy J. Schlemon Mentor Program in Applied Geoscience**

<table>
<thead>
<tr>
<th>EVENT</th>
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<tbody>
<tr>
<td>noon–1:30 p.m.</td>
<td>Colonnade Ballroom, 20th Floor</td>
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**South-Central Section Management Board Meeting**

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<thead>
<tr>
<th>EVENT</th>
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<tbody>
<tr>
<td>noon–1:30 p.m.</td>
<td>Bolo's PDR</td>
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**The Future Geosciences Job Market: A Faculty and K–12 Mentor Lunch**

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<tr>
<th>EVENT</th>
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<tbody>
<tr>
<td>noon–2 p.m.</td>
<td>Colonnade Ballroom B, 20th Floor</td>
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**Afternoon Oral Technical Sessions**

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<thead>
<tr>
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<tbody>
<tr>
<td>Recent Advances in Geoscience Research</td>
<td>1:30–5:30 p.m.</td>
<td>Grand Ballroom G</td>
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<tr>
<td>T5. Micro- to Macroscopic Evidence of Life and its Implications for the Evolution and Interpretation of the Biosphere in Earth Systems</td>
<td>1:30–5:30 p.m.</td>
<td>Grand Ballroom F</td>
</tr>
<tr>
<td>T13. Texas Water Research Network: A Statewide Initiative to Integrate and Advance Water Research from Inception to Application II</td>
<td>1:30–5:30 p.m.</td>
<td>Grand Ballroom A</td>
</tr>
<tr>
<td>T14. Groundwater Availability in Texas: Rule of Capture and Sustainable to Consensus Yield</td>
<td>1:30–5:35 p.m.</td>
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**Keynote Address and Reception**

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<tr>
<td>5–7 p.m.</td>
<td>Grand Ballroom CDE</td>
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**TUESDAY, 14 MARCH**

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<tbody>
<tr>
<td>South-Central Section Open Meeting</td>
<td>7–8 a.m.</td>
<td>Bolo's PDR</td>
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<tr>
<td>Speaker Ready Room</td>
<td>7 a.m.–noon</td>
<td>Sam Houston Room, 2nd Floor</td>
</tr>
<tr>
<td>Registration Open</td>
<td>7 a.m.–2 p.m.</td>
<td>Foyer ABCD</td>
</tr>
<tr>
<td>Exhibits Open</td>
<td>8 a.m.–5:30 p.m.</td>
<td>Grand Ballroom CDE</td>
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<tbody>
<tr>
<td>Geoscience Career Workshop Part 3</td>
<td>9–10 a.m.</td>
<td>Colonnade Ballroom CA, 20th Floor</td>
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<tr>
<td>Early Career Professional Focus Group</td>
<td>10:30–11:30 a.m.</td>
<td>Colonnade Ballroom CA, 20th Floor</td>
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**Morning Oral Technical Sessions**

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<tr>
<th>EVENT</th>
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<tr>
<td>T10. Late Paleozoic Tectonic Framework of the South-Central Region and Evolution of the Permian Basin</td>
<td>8–10:20 a.m.</td>
<td>Grand Ballroom A</td>
</tr>
<tr>
<td>T3. Advances in Sedimentology, Stratigraphy, and Geochemistry of Carbonates and Mixed Carbonate Clastic Systems</td>
<td>8 a.m.–noon</td>
<td>Grand Ballroom B</td>
</tr>
<tr>
<td>EVENT</td>
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<tr>
<td>T8. Subsurface Exploration Techniques in the South-Central U.S.</td>
<td>8 a.m.–noon</td>
<td>Grand Ballroom F</td>
</tr>
<tr>
<td>T12. Upper Crustal Deformation across Continental Interiors from the</td>
<td>10:35 a.m.–12:15 p.m.</td>
<td>Grand Ballroom A</td>
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<tr>
<td>Mesozoic to the Present</td>
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</table>

**Poster Technical Sessions**

| Research in Hydrogeology, Geochemistry, and Soils (Posters)      | 9 a.m.–5:30 p.m.   | Grand Ballroom CDE       |
| Research in Sedimentology and Stratigraphy (Posters)             | 9 a.m.–5:30 p.m.   | Grand Ballroom CDE       |
| Research in Structural Geology, Geomorphology, and Igneous Processes (Posters) | 9 a.m.–5:30 p.m.   | Grand Ballroom CDE       |
| T3. Advances in Sedimentology, Stratigraphy, and Geochemistry of Carbonates and Mixed Carbonate Clastic Systems (Posters) | 9 a.m.–5:30 p.m.   | Grand Ballroom CDE       |
| T4. The Impact of Oceanographic Conditions, Oaes, and Volcanism on an Unconventional Reservoir System: The Late Cretaceous Eagle Ford and Austin Chalk Groups of the Gulf Coast (Posters) | 9 a.m.–5:30 p.m.   | Grand Ballroom CDE       |
| T5. Micro- to Macroscopic Evidence of Life and its Implications for the Evolution and Interpretation of the Biosphere in Earth Systems (Posters) | 9 a.m.–5:30 p.m.   | Grand Ballroom CDE       |
| T8. Subsurface Exploration Techniques in the South-Central U.S. (Posters) | 9 a.m.–5:30 p.m.   | Grand Ballroom CDE       |
| T9. Fostering Cultures of Deliberate Inclusion in Geosciences (Posters) | 9 a.m.–5:30 p.m.   | Grand Ballroom CDE       |
| T11. Petroleum and Water Interactions in Mexico's South-Central Region (Posters) | 9 a.m.–5:30 p.m.   | Grand Ballroom CDE       |
| T12. Upper Crustal Deformation across Continental Interiors from the Mesozoic to the Present (Posters) | 9 a.m.–5:30 p.m.   | Grand Ballroom CDE       |

John Mann Mentors in Applied Hydrogeology Program

| John Mann Mentors in Applied Hydrogeology Program | noon–1:30 p.m. | Colonnade Ballroom CA, 20th Floor |

**Afternoon Oral Technical Sessions**

| T4. The Impact of Oceanographic Conditions, Oaes, and Volcanism on an Unconventional Reservoir System: The Late Cretaceous Eagle Ford and Austin Chalk Groups of the Gulf Coast | 1:30–5:30 p.m. | Grand Ballroom A |
| T9. Fostering Cultures of Deliberate Inclusion in Geosciences | 1:30–5:30 p.m. | Grand Ballroom F |
| T11. Petroleum and Water Interactions in Mexico's South-Central Region | 1:30–5:30 p.m. | Grand Ballroom B |

Student Award Ceremony

| Student Award Ceremony | 5–5:30 p.m. | Grand Ballroom CDE |
### Technical Sessions

Meeting policy prohibits the use of cameras or sound-recording equipment at technical sessions and poster sessions.

A no-smoking policy has been established by the Program Committee and will be followed in all meeting rooms for technical sessions.

#### NOTICE

In the interest of public information, the Geological Society of America provides a forum for the presentation of diverse opinions and positions. The opinions (views) expressed by speakers and exhibitors at these sessions are their own and do not necessarily represent the views or policies of the Geological Society of America.

#### NOTE INDEX SYSTEM

Numbers (3-4, 15-4) indicate session and order of presentation within that session.

*denotes speaker

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### MORNING ORAL TECHNICAL SESSIONS

**SESSION NO. 1**

**T1. Advances in Understanding Precambrian to Cenozoic Magmatic and Metamorphic Processes and their Bearing on Lithospheric Evolution of Southern Laurentia**

8:00 AM, Omni Colonnade San Antonio Grand Ballroom G

Elizabeth J. Catsos, Michael T. DeAngelis and Richard Hanson, Presiding

#### 1-1 8:05 AM

Stockli, Daniel F.*: **TEXAS THREE STEP – THE EXHUMATION AND EXPOSURE HISTORY OF THE LLANO UPLIFT ALONG THE LAURENTIA AND GULF OF MEXICO RIFT MARGINS**

#### 1-2 8:25 AM

Rodriguez, Edna*; Stockli, Daniel F.; Dickerson, Patricia W.: **NEW ZIRCON U-PB GEOCHRONOLOGY FROM THE DEVIL’S RIVER UPLIFT - INSIGHTS INTO THE NEOPROTEROZOIC AND EARLY PALEOZOIC EVOLUTION OF THE SOUTHERN MARGIN OF NORTH AMERICA**

#### 1-3 8:45 AM

Alemán Gallardo, Eduardo Alejandro*; Ramirez Fernandez, Juan Alonso; Rodriguez Díaz, Augusto Antonio; Jenchen, Uwe; Paz Moreno, Francisco A.: **EVIDENCES OF AN ORDOVICIAN MAGMATIC ARC IN THE BASEMENT OF THE SIERRA MADRE ORIENTAL: A NEW PIECE OF THE GEOLOGICAL PUZZLE IN NE MEXICO**

#### 1-4 9:05 AM

Ramírez Fernandez, Juan Alonso*; Loera Garcia, Eusebio Federico; Velasco Tapia, Fernando; Jenchen, Uwe; Cruz Gámez, Esther María: **EVIDENCES OF SYNSEDIMENTARY ACID VOLCANISM IN THE EVAPORITIC SEQUENCE OF THE JURASSIC MINAS VIEJAS FM. IN GALEANA, NE MEXICO**

#### 1-5 9:25 AM

Friesenhahn, Brody P.*; Economos, Rita C.; Ianno, Adam J.; Powell, Robert E.: **GEOLOGIC CONSTRAINTS ON MID-CRUSTAL MAGMATIC PROCESSES IN THE MOJAVE SEGMENT OF THE CRETACEOUS CORDILLERAN ARC**

#### 1-6 9:45 AM

Anthony, Elizabeth Y.*; Raye, Urmidola; Stern, Robert; Kimura, Jun Ichi; Chang, Qing; Hirahara, Yuka; Tani, Kenichiro; Hanyu, Takeshi; Miyazaki, Takashi; Lee, Cin-Ty A.; Griffin, W.L.: **MANTLE XENOLITH SAMPLES FROM THE BALCONEYS IGNEOUS PROVINCE, CENTRAL TEXAS: MESOPROTEROZOIC STABILIZATION OF LITHOSPHERIC MANTLE AND SUBSEQUENT SUBDUCTION- FLUID MODIFICATION DURING THE OUACHITA OROGENY**

10:05 AM **BREAK**

#### 1-7 10:20 AM

Li, Shimin*; Zhu, Di-Cheng; Stern, Robert; Wang, Qing; Zhao, Zhidan: **MAGMATIC RECORDS OF SOUTHWARD SUBDUCTION OF THE BANGONG–NUJIANG OCEAN LITHOSPHERE DURING THE EARLY CRETACEOUS IN CENTRAL TIBET**

#### 1-8 10:40 AM

Parker, Don F.*: **GEOCHEMICAL EVOLUTION OF THE PARADISE MOUNTAIN CALDERA COMPLEX, DAVIS MOUNTAINS, TRANS-PECOS TEXAS**

#### 1-9 11:00 AM


#### 1-10 11:20 AM

Hanson, Richard E.*; Boro, Joseph R.; Eschberger, Amy M.; Toews, Chelsea E.: **CAMBRIAN A-TYPE RHYOLITE LAVAS, BASALTIC PHREATOMAGMATIC VENT CONDUITS AND BIMODAL HYPABYSSAL INTRUSIONS EMPLOYED ALONG A RIFT-BOUNDING FAULT IN THE SOUTHERN OKLAHOMA AULACOCEN**

#### 1-11 11:40 AM

Puckett, Robert E.*; Hanson, Richard E.; Brueseke, Matthew E.; Eschberger, Amy M.; Toews, Chelsea E.; Boro, Joseph R.: **PHYSICAL VOLCANOLOGY OF CAMBRIAN BASALTIS AND RHYOLITIS IN THE SOUTHERN OKLAHOMA AULACOCEN FROM SURFACE EXPOSURES AND DEEP DRILLING PENETRATIONS**

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**MONDAY, 13 MARCH 2017**
SESSION NO. 2
T2. Advances in the Application and Development of TerrestrialPaleoclimatet Proxies (GSA Soils and Soil Processes Interdisciplinary Interest Group; GSA Geobiology and Geomicrobiology Division; GSA Karst Division)
8:00 AM, Omni Colonnade San Antonio Grand Ballroom F
Marina B. Suarez, Steven G. Driese and Dan O. Breecker, Presiding
8:00 AM INTRODUCTORY REMARKS
2-1 8:05 AM Suarez, Marina B.; Ludvigson, G.; Gonzalez, Luis A.; You, Haif: PETROGRAPHIC, XRD, AND CLUPLLED ISOTOPE STUDY OF A CRETACEOUS DOLOMITIC LAKE IN NORTHWEST CHINA
2-2 8:25 AM West, Matthew A.; Suarez, Marina B.; Hou, Juzhi; Gao, Yongli: HOLOCENE PALEOClimATE INTERPRETED BY STABLE CARBON AND OXYGEN ISOTOPES OF OSTRACODS FROM XIADA CO LAKE ON THE TIBETAN PLATEAU
2-3 8:45 AM Jonell, Tara N.; Clift, Peter D.; Hoang, Long V.; Hoang, Tina; Carter, Andrew; Wittmann, Heila; Böning, Philipp; Pahmke, Katharina; Rittenour, Tammy: INVESTIGATION OF EROSION IN A TECTONICALLY-QUIESCENT MONSOONAL RIVER BASIN, SONG GIANH, CENTRAL VIETNAM
2-4 9:05 AM Zhou, Peng*; Clift, Peter D.; Bluszcz, Jerzy S.; Pandey, Dhananjai K.; Stockli, Daniel F.: CLIMATE-TECTONIC INTERACTIONS RECORDED IN THE ARABIAN SEA: RESULTS FROM IODP EXPEDITION 355
2-5 9:25 AM Obelcz, Jeff*; Xu, Kehui; Gonzalez Rodriguez, Suyapa; Bentley, Samuel J.; Caporaso, Alicia; Delong, Kristine L.; Harley, Grant; Reese, Carl Andy; Tuong, Jonathan T.: A 40,000 YEAR OLD BALTIC FOREST IN THE MIDDLE OF THE GULF OF MEXICO: HOW IT EXISTS, HOW WE FOUND IT, AND WHAT IT CAN TELL US
2-6 9:45 AM Sekhon, Natasha*; Banner, Jay; Breecker, Dan O.; Carlson, Peter E.: NEAR ENTRANCE SPELEothEMS: ARCHIVES OF SEASONALITY?
10:05 AM BREAK
2-7 10:20 AM Stepchinski, Leanne*; Bertetti, F. Paul; Green, Ronald T.; Toll, Nathaniel J.; Nunu, Rebecca R.; Gulliver, Kirk D.H.: INVESTIGATION OF DROUGHT INTENSITY AND PERIODICITY IN SOUTH TEXAS USING CHEMICAL AND BIOLOGICAL RECORDS IN BAT GUANO CORES
2-8 10:40 AM Moore, Collin Scott*; Schubert, Brian A.: SEASONAL TEMPERATURES IN THE ARCTIC DURING THE LATE PLEISTOCENE DETERMINED USING HIGH-RESOLUTION OXYGEN ISOTOPE MEASUREMENTS ACROSS FOSSIL WOOD
2-9 11:00 AM Driese, Steven G.*; Medaris, L. Gordon; Stinchcomb, Gary: APPLICATIONS OF TP, O2, AND TFE, AS INDICATORS OF MICROBIOLUMINING AND REDOX PROCESSES IN PRECAMBRIAN PALEOSOLS AND PALEOSAPROLITES
2-10 11:20 AM West, Logan A.*; Lukens, William E.; Driese, Steven G.; Tubbs, Jack D.; Letourmy, Yohan; Leslie, Caitlin E.: AN ICHNOLOGICAL PROXY FOR THE RESPONSE AND RECOVERY OF SOIL FAUNA ACROSS THE K-PG EXTINCTION INTERVAL: BIG BEND NATIONAL PARK
2-11 11:40 AM Lukens, William E.; Driese, Steven G.: THE LATE MIocene CRITICAL ZONE AT COFFEE RANCH, TX: PALEOClimATE, PALEOVEGETATION AND PALEOSOLS

SESSION NO. 3
T6. Karst: From Sinkholes to Springs and Everything in Between (GSA Karst Division)
8:00 AM, Omni Colonnade San Antonio Grand Ballroom B
Geary M. Schindel, Jonathan B. Sumrall and Brian B. Hunt, Presiding
8:00 AM INTRODUCTORY REMARKS
3-1 8:05 AM Bobeck, Patricia*: THE 21ST CENTURY ART OF FINDING GROUNDWATER IN KARST

SESSION NO. 4
T13. Texas Water Research Network: A Statewide Initiative to Integrate and Advance Water Research from Inception to Application (GSA Hydrogeology Division; GSA Karst Division)
8:00 AM, Omni Colonnade San Antonio Grand Ballroom A
Suzanne A. Pierce, Kevin Wagner, Suzanne Schwartz and Jay Banner, Presiding
8:00 AM INTRODUCTORY REMARKS
4-1 8:05 AM Banner, Jay L.*; James, Eric; Pierce, Suzanne A.; Shearer, Alan; Schwartz, Suzanne; Uddameri, Venkatesh; Wagner, Kevin; Nielsen-Gammon, John W.; Potter, Lloyd; Yang, Zong-Liang; Young, Michael H.; Lieberknecht, Katherine; Noronha, Alexandra: THE TEXAS WATER RESEARCH NETWORK: ADDRESSING CHALLENGES FOR 21ST CENTURY TEXAS
4-2 8:25 AM Yang, Zong-Liang*; Zhao, Long; Wei, Jiangfeng; Lin, Peirong; Li, Lingcheng; Caldwell, Todd G.; Das, Narendra; Hopper, Larry, Zeitler, Jon: TOWARDS AN ADVANCED ANALYSIS, SIMULATION, AND FORECASTING CAPABILITY FOR THE WATER CYCLE IN TEXAS
4-3 8:45 AM Nielsen-Gammon, John W.*: NONPARAMETRIC ANALYSIS OF CHANGES OF HEAVY PRECIPITATION IN TEXAS
SESSION NO. 4

Abolt, Charles J.*; Young, Michael H.; Udvardy, Venkatesh: WATER SCIENCE NOCT – FORECASTING WATER RESILIENCE ALONG THE NEW 100TH MERIDIAN

Singaraju, Sreearam Gopal*; Nwankpa, Ifeanyichukwu; Udvardy, Venkatesh; Assif, Tom; Hernandez, Elma Annette; Banner, Jay: CLIMATE CHANGE IMPACTS ON HYDROLOGIC RESPONSES IN A SPRING FED WATERSHED NEAR THE 100TH MERIDIAN – LLANO RIVER WATERSHED

Zarezadeh, Vahid*; Giacomoni, Marico: EFFECTS OF URBANIZATION AND LAND USE CHANGE ON HYDROLOGIC FLOW REGIME

Ray, Ram L.*; Fares, Ali; Awal, Ripendra; Risch, Eric: ASSESSING THE EFFECTS OF CHANGE IN IMPERVIOUS AREAS ON FLOODING IN TEXAS

Chen, Jingyi (Ann)*: THE USE OF SPACEBORNE INSAR FOR STATEWIDE MONITORING OF GROUNDWATER LEVELS IN CONFINED AQUIFERS

Standen, Allan R.*: MANAGING GROUNDWATER RESOURCES USING INTERACTIVE 3-D HYDRO-STRATIGRAPHIC MODELS IN TEXAS

Khan, Tabish H.*: DESIGNING AND TESTING A RELATIVE RESILIENCE FRAMEWORK FOR GROUNDWATER MANAGEMENT

Holland, Derrick*; Calisson, Coy: HASHTAGS AND LIKES: AN ANALYSIS OF THE SOCIAL MEDIA CONVERSATION SURROUNDING WATER SCARCITY

Rosen, Rudolph*: BUILDING A ROADMAP FOR TEXAS WATER SECURITY, RESEARCH, OUTREACH, AND EDUCATION: THE TEXAS WATER ROADMAP FORUM

SESSION NO. 5

T1. Advances in Understanding Precambrian to Cenozoic Magmatic and Metamorphic Processes and their Bearing on Lithospheric Evolution of Southern Laurentia (Posters) 9:00 AM, Omni Colonnade San Antonio Grand Ballroom CDE

Cains, Julie M.*; Chick, Jonathan T.; Kincade, Sean C.; McFarlin, Forrest D.; M oKim, Sydney; Potra, Adriana: SIGNIFICANCE OF TERMINATED AND DOUBLY TERMINATED QUARTZ CRYSTALS, LOWER MISSISSIPPIAN BOONE FORMATION, SOUTHERN OZARK REGION, ARKANSAS, OKLAHOMA AND MISSOURI

Bailey, William*; Urbanycz, Kevin M.: MODAL MINERALOGICAL ANALYSIS OF ROCKS IN THIN SECTION USING STATISTICAL ANALYSIS OF X-RAY MAPS IN ARCGIS

Ford, Mark T.*: GEOCHEMICAL MODELING OF TRACE ELEMENTS AT THE BADU HILL PEGMATITE, CENTRAL TEXAS

DeAngelis, Michael T.*; Harper, David R.: EXAMINATION OF BIOTITE GARNET IOLITE FROM THE MAGNET COVE ALKALINE INTRUSIVE COMPLEX, ARKANSAS

Roark, Trevor*; DeAngelis, Michael T.: GEOCHEMICAL EXAMINATION OF GARNETS FROM THE PRAIRIE CREEK LAMPROITE, MURFREESBORO, ARKANSAS

SESSION NO. 6

T2. Advances in the Application and Development of Terrestrial Paleoclimate Proxies (Posters) (GSA Soils and Soil Processes Interdisciplinary Interest Group; GSA Geobiology and Geomicrobiology Division; GSA Karst Division) 9:00 AM, Omni Colonnade San Antonio Grand Ballroom CDE

Li, Dong*: HIGH-RESOLUTION SUMMER MONSOON INTENSITY VARIATIONS IN CENTRAL CHINA DURING 27-11 KA B.P. AS REVEALED BY STALAGMITE δ18O

Paige, Mark R.*; Suarez, Marina B.: ISOTOPE GEOCHEMISTRY OF LACUSTRINE DEPOSITS IN THE CRETACEOUS CEDAR MOUNTAIN FORMATION, EASTERN UTAH

Westgate, James W.*: A MECO RAIN FOREST/MANGROVE COMMUNITY FROM LAREDO, TEXAS

Ray, Christopher J.*; Gao, Yongli; Suarez, Marina; Schwartz, Benjamin; Rowe, Harry; Li, Yunxia; Cheng, Hai; Edwards, Lawrence: LATE QUATERNARY STALAGMITE PALEOClimatic RECORDS OF HElIClTITE CAVE, VA

Haralison, Marlee D.*; Lukens, William E.; Martin, Robert A.; Fox, David L.: PALEOClimATIC AND PALEENVIRONMENTAL RECONSTRUCTION AT THE EARLY PLEISTOCENE SHORT HAUL FOSSIL SITE, MEADE BASIN, SOUTHWEST KANSAS

James, Christina*; Breecker, Dan O.; Charlton, Timothy C.; Banner, Jay; Koleszar, Alison M.; James, Eric; Edwards, Lawrence; Zhang, Pu: USING CENTRAL TEXAS SPELEOTHEMS TO IDENTIFY REGIONAL MOISTURE DISTRIBUTION DURING THE LAST DEGLACIATION

Bisaro, Marcos Cesar*; Hsiou, Annie Schmaltz; Ghilardi, Renato Pirani; Souza Filho, Jonas Pereira; Guilherme, Edson; Maciente, Andrea Aparecida da Rocha; Pollock, Erik D.; Suarez, Celina: STABLE ISOTOPES, RARE EARTH ELEMENTS AND PETROGRAPHIC ANALYSIS OF VERTEBRATE FOSSILS FROM SOLIMÕES FORMATION (UPPER MIOCENE, ACRE BASIN, BRAZIL): EXPECTED INSIGHTS ON PALEOClimatology, PALEENVIRONMENT AND TAPHONOMY

SESSION NO. 7

T6. Karst: From Sinkholes to Springs and Everything in Between (Posters) (GSA Karst Division) 9:00 AM, Omni Colonnade San Antonio Grand Ballroom CDE

Shaw Faulkner, Melinda*: REMOTE SENSING CHARACTERIZATION OF STRUCTURAL CONTROL AND ORIGINS OF SINKHOLE DEVELOPMENT, FORT HOOD MILITARY INSTALLATION, TEXAS

Rodriguez, Josue*; Covington, Matthew D.; Gibson, Kristen E.; Almeida, Giselle; Jackson, Jay M.: COMPARATIVE MICROBIAL COMMUNITY DYNAMICS IN A KARST AQUIFER SYSTEM AND PROXIMAL SURFACE STREAM IN NORTHWEST KANSAS

Nunu, Rebecca R.*; Bertetti, F. Paul; Green, Ronald T.: CHARACTERIZATION OF HYDROCHEMISTRY OF THE EDWARDS-TRINITY (PLATEAU) AQUIFER IN SUTTON COUNTY, TEXAS

Meinerts, Jacob A.*; Shaw Faulkner, Melinda: DEPOSITIONAL ENVIRONMENT AND FACIES ANALYSIS OF THE OWL MOUNTAIN PROVINCE, FORT HOOD MILITARY INSTALLATION, TEXAS

Hiler, Mark Daniel*; Schwartz, Benjamin; Schindel, Geary: DELINEATING THE SPRINGSHED OF CAVE WITHOUT A NAME: DYE TRACING IN THE LOWER GLEN ROSE LIMESTONE

Tian, Lijun*; Sok, Soeuth; Gao, Yongli: WATER QUALITY OF SPRINGS IN THE UPPER CIBOLO CREEK WATERSHED, KENDALL COUNTY, TEXAS
SESSION NO. 8
T15. Undergraduate Students (Posters) (Council on Undergraduate Research Geosciences Division; GSA Geoscience Education Division)

Authors will be present from 9:30 to 11:30 AM

Booth #

8-1 23 Fearn, Mary K.*; Blackstock, Joshua M.; Hays, Phillip D.: PRELIMINARY RESULTS OF BACK-TRAJECTORY ANALYSIS USING HYSPLIT AND ISOTOPIC VARIABILITY OF PRECIPITATION, NORTHWEST, ARKANSAS, USA

8-2 24 Gu, Jesse T.*; Dygert, Nick: HEF/NE VARIATIONS AMONG OCEAN ISLAND, MID-OCEAN RIDGE, AND BACKARC BASALTS

8-3 25 Kemen, Rachelle*: Anthony, Elizabeth; Ricketts, Jason; Biddle, Julian; Garcia, Jose A.: THERMAL ALTERATION HISTORY OF NEOPROTEROZOIC BASALT XENOLITHS IN THE PATAWARTA AND WITCHELINA DIAPIRS, FLINDERS AND WILLOURAN RANGES, SOUTH AUSTRALIA

8-4 26 Quevy, Amber L.*; Price, Jonathan D.: STREAKING ACROSS THE GABBRO: THE WICHITA MOUNTAINS' QUANAH GRANITE DIKES EXPOSED


8-6 28 Lambert, Kenneth James*: Smith, Tyson Michael; Saylor, Joel E.; Lapen, Thomas J.; Copeland, Peter: HETEROGENEITY IN THE UNCOMPAGHRE UPLIFT REFLECTED IN PROXIMAL-DISTAL SEDIMENT MIXING IN THE PARADOX BASIN

8-7 29 DeBone, Kristin*: Howard, J. Michael; Harris, J. Patrick; Cooper, Brian: REE DISTRIBUTION IN THE V-INTRUSIVE OF CENTRAL ARKANSAS

8-8 30 Francisco, Reagan N.*; Lao-Davila, Daniel; Atekwana, Estella A.; Abdelsalam, Mohamed G.; Pritt, Amy R.; Prater, Wesley T.; Salima, Jaf; Chindandali, Patrick R.N.; Chikalamo, Elias; Santiago-Torres, Alejandra; Velez-Rosado, Kevin Ian: ORIENTATION OF PREAMBRIAN STRUCTURES AND THE FORMATION OF BORDER FAULTS IN THE LAKE MALOMBE AREA, SOUTH ARKANSAS

8-9 31 Vetter, Scott K.*; Greber, Austin; Kirk, Kaleb; Harrison, Zachary; Scales, Allison; Nelson, Spencer R.; Whan, Ryan; Bieler, David: MITCHELL DAM AMPHIBOLITES: GEOCHEMISTRY AND PETROLOGY OF CORE HOLE SAMPLES, SENIOR CLASS PROJECT

8-10 32 Alarcon-Canto, Felipe*: Quisenberry, James; Sanchez, Veronica: STRUCTURAL ANALYSES OF LINEAMENTS IN THE CHRISTMAS MOUNTAIN RANGE AND THE EXTENT OF THE TASCOTAL MESA FAULT, TEXAS

8-11 33 Jacobus, Andrew Mark*: THE CRUSTAL ORIGIN OF THE SABINE BLOCK IN SOUTH CENTRAL UNITED STATES

8-12 34 Stevenson, Alexandra M.*; Price, Jonathan D.: DISTRIBUTION OF MARGINAL TEXTURES IN THE QUANAH GRANITE PLUTON, WICHITA MOUNTAINS, OKLAHOMA

8-13 35 Alagbe, Tomisin*: Sanchez, Veronica: ANALYSIS OF FOLD-THRUST BELT GEOMETRY IN THE ZAGROS MOUNTAINS

8-14 36 Martinez, Sabrina*: ACTIVE TECTONICS WITHIN PUERTO RICO: IDENTIFYING AREAS OF ACTIVE UPLIFT USING REGIONAL GEOMORPHIC INDICES

8-15 37 Quisenberry, James*: Alarcon-Canto, Felipe; Sanchez, Veronica: PREDICTING PALEOSTRESS ORIENTATIONS FROM FRACTURE PATTERNS IN THE CHRISTMAS MOUNTAINS

8-16 38 Ryan, Allison Aileen*: DETERMINING THE CHEMOSERIGRAPHIC RECORD OF THE CEDAR MOUNTAIN FORMATION USING A 10C/13C ISOTOPES

8-17 39 Jordan, Miranda M.*; Sumrall, Jonathan B.: PETROGRAPHIC ANALYSIS OF VEGETMORPHS FROM ELEUTHERA, THE BAHAMAS

8-18 40 Skipwith, Jordan J.K.*; Reece, Bobby; Christeson, Gail L.; Carlson, Richard L.; Estep, Justin; Bonnette, Grant J.; Fedotova, Anastasia: GEOPHYSICAL ANALYSIS OF ANOMALOUS EXTRUSIVE VOLCANISM IN SOUTH ATLANTIC OCEANIC CRUST

8-19 41 Graves, William*: Ramon, Isaac; Lehto, Heather L.: USING MAGNETICS TO APPROXIMATE THE RELATIVE AGE OF MAFIC SILLS WITHIN DAGGER MOUNTAIN IN BIG BEND NATIONAL PARK, TX

8-20 42 Enciso, Adolfo*: Sanchez, Veronica: TECTONIC GEOMORPHOLOGY ANALYSIS OF SOUTH-CENTRAL TIBET RIFTS USING REMOTE SENSING AND GEOGRAPHIC INFORMATION SYSTEMS

8-21 43 Pease, Emily Camille*: Dygert, Nick; Catlos, E.J.: Brookfield, Michael: NEW GEOCHEMICAL AND THERMOCHRONOLOGIC CONSTRAINTS ON THE TECTONIC AFFINITY, COOLING HISTORY, AND TIMING OF OBSTRUCTION OF THE SPONGTANG OPHOLITE, NORTHWEST INDIA


8-23 45 Crockett, Macey*: Khan, Shubah D.; Alonso de Linaje, Virginia; Sun, Lei: A COMPARATIVE HYPERSPECTRAL STUDY OF HYDROCARBON SEEPAGES NEAR UVALDE, TEXAS: AN ANALYSIS OF CLASSIFICATION METHOD ACCURACY

8-24 46 Guimbi Nzoumba, Ghervy N.*; Yancey, Thomas: DOCUMENTING DIATOM OCCURRENCE IN LATE EOCENE MARINE COASTAL SEDIMENTS IN CENTRAL TEXAS

8-25 47 Dunlap, Maigan*: Last, Fawn; Lehrmann, Daniel J.: CARBONATE FACIES CHANGES FROM THE LATE PERMIAN TO THE EARLY TRIASSIC FOR THREE NEW LOCALITIES IN THE NANPANJANG BASIN, SOUTH CHINA

8-26 48 Passamano, Kylie*: Last, Fawn: COLD WATER CARBONATE DEPOSITS OF QUATERNARY LAKE RUSSELL, EASTERN CALIFORNIA

8-27 49 Riggs, Ryan Matthew*: Ellwood, Brooks B.: CACO% AND MAGNETIC SUSCEPTIBILITY VARIABILITY THROUGHOUT THE PALEOCENE-EOCENE BOUNDARY INTERVAL

8-28 50 Lofton, Connor James*: Reece, Robert S.; Gulick, Sean; LeVoir, Maureen; Haussler, Peter J.; McClai, Naoma; O'Brien, Nicholas; Saustrop, Steffen: THE EFFECT OF GLACIAL RETREAT ON FJORD EPITHELIAL REGIMES, TAAN FIORD, ICY BAY, ALASKA

8-29 51 Robinson, S.E.*; Rossco, Steven J.; Dose, Michelle M.: PRELIMINARY ANALYSIS OF TOTAL GAMMA RADIATION, CONODONT ELEMENT ABUNDANCE, AND FINER THAN SAND FRACTION RELATIONSHIPS IN THE LOWER BARNETT SHALE, SAN SABA, TEXAS, UNITED STATES

8-30 52 Wilson, Dustin*: Last, Fawn: CONCRETIONS IN TERTIARY SANDS ALONG ECLEO CREEK IN SOUTHERN TEXAS

8-31 53 O'Brien, Nicholas S.*: NEW INSIGHT INTO GLACIAL VARIABILITY BASED ON SEISMIC IMAGING OF SEDIMENTARY PACKAGES IN ICY BAY, ALASKA
SESSION NO. 8

8-32  54  Zafar, Maham*; Mitchell, Evelynn J.; Turner, David R.; Montes-Arredondo, Salma: EVALUATING PRE-EXISTING SOIL CONDITIONS AT A REHABILITATED COMMUNITY GARDEN LOCATION ON THE WEST SIDE OF SAN ANTONIO, TEXAS

8-33  55  Olaniyi-Shiolakwe, OluwaseyiFunmiltan M.*; Marcantonio, Franco; Reim, Maya: BARIUM CONCENTRATIONS AS A PROXY FOR EQUATORIAL PACIFIC PRODUCTIVITY DURING THE PAST 140,000 YEARS

8-34  56  Dillon, Sarah Marie*; Ford, Mark T.; Liu, Jingbo Louise: TESTING THE GEOCHEMICAL ACCURACY OF ANALYTICAL OPTICAL MINERALOGY

8-35  57  Moore, Kimberly D.*; Sumrall, Jonathan B.: PETROGRAPHIC ANALYSIS OF CHERT WITHIN THE MANISTIQUE GROUP OF THE MICHIGAN BASIN


8-37  59  Kapayi, Kuzifa*; Suarez, Marina B.: CARBON ISOTOPIC CHEMOSTRATIGRAPHY FROM MID-CRETACEOUS LACUSTRINE IN NW CHINA

8-38  60  Onyango, Evans*; Khan, Shuhab; Talbot, Robert; Sun, Lei: APPLICATION OF AIRBORNE AND GROUND-BASED HYERSPECTRAL IMAGING IN DETECTING METHANE

8-39  61  Juenger, Jessica*: ELECTRICAL RESISTIVITY SIGNATURES OF THE PAWNEE MANSION CREEP, BLUE HAWK PEAK, OKLAHOMA

8-40  62  Giles, Sarah*; Kernen, Rachelle; Lehmann, Asmara; Giles, Katherine: EVOLUTION OF A SUPRASALT MINIBASIN: NEOPROTEROZOIC (EDIACARAN) PATAWARTA SALT SHEET, FLINDERS RANGES, SOUTH AUSTRALIA

8-41  63  Lehmann, Asmara*; Kernen, Rachelle; Giles, Sarah; Giles, Katherine: TIMING OF ALLOCHTHONOUS SALT EREPLACEMENT OF THE NEOPROTEROZOIC (EDIACARAN) PATAWARTA SALT SHEET, FLINDERS RANGES, SOUTH AUSTRALIA: EVIDENCE FROM THE SUBSALT MINIBASIN

8-42  64  Siigl, Kristen E. ; Al Atwah, Ibrahim; Puckette, James O.; Quan, Tracy M.: USING BIOMARKERS TO DETERMINE UNKNOWN ORIGINS OF OIL IN A MISSISSIPPIAN CARBONATE RESERVOIR, CENTRAL OKLAHOMA, USA

8-43  65  Fattouh, Tara N.*: CLIMATE CHANGE AND THE MAYAN COLLAPSE: HIGH RESOLUTION PALEOCLIMATE RECONSTRUCTION FROM SPELEOTHEM RECORDS IN BELIZE

8-44  66  Morris, René Eren*; Sumrall, Jonathan B.: COMPARISON OF THE PETROGRAPHIC CHARACTERISTICS OF NEOGENE AND PLEISTOCENE VOLCANICLASTIC-RICH CARBONATES FROM CURACAO, NETHERLANDS ANTILLES

8-45  67  Humphreys, Jennifer*; Stern, Robert: GEOSCIENCE SKETCHING IN THE CLASSROOM

8-46  68  Tuttle, Larry*; Wernette, Philippe A.; Houser, Chris: MAPPING THE GEOLOGIC FRAMEWORK OF PADRE ISLAND NATIONAL SEASHORE USING GEOPHYSICAL SURVEYS

8-47  69  Ricketts, Tyler Edward*; Gifford, Jennifer: USING PHOTOGRAMMETRY AND 3D MODELING TO REPLICATE AND ENHANCE GEOSCIENCE FIELD EXPERIENCES


8-49  71  Teintert, Midri M.*; Faught, John E.; Giles, Antony N.: AN INITIAL UPDATE ON RESEARCH INTO LOCALIZED FAUNAL POPULATION DECLINES FROM MICROFOSSIL AND MACROFOSSIL EVIDENCE IN THE CRETACEOUS EDWARDS GROUP AND THE ANTTLERS SANDS, FLUVALIANA, TX

8-50  72  Manlove, Hunter Michelle*: RARE EARTH ELEMENT GEOCHEMISTRY OF VERTEBRATE FOSSILS FROM THE CRETACEOUS MORENO FORMATION, CALIFORNIA

8-51  73  Shackleton, Travis*: MICROFOSSILS IN MARINE SEDIMENTS: THE INFLUENCE ON MACRO-SCALE MECHANICAL BEHAVIOR

8-52  74  Martin, Camryn L.*; Georgiou, Ioannis: PHYSICAL MODELING OF TIDAL CREEK MIGRATION DYNAMICS: IMPLICATIONS FOR DETACHED BAR DEVELOPMENT

8-53  75  Wynn, Joshua C.*; Walsh, Tim R.: COMPARISON OF CHERT GEOCHEMISTRY AND FLINT KNOTTING WORKABILITY

8-54  76  Whaley, Carol Ann*; Ali, Hendratta; Christiano, Andrew W.; Karim, Muhammad; Tedesco, Steven A.: USING GEOCHEMICAL DATA TO DETERMINE THE INFLUENCE OF ELEMENTAL CONTENT AND MINERALOGICAL COMPOSITION WITHIN THE CHEROKEE BASIN IN SOUTHEAST KANSAS

8-55  77  Cantu, Ana*; Pierce, Suzanne A.; Rivera, Omar; Ramirez, Andrea; Lewis, Daniel Hardesty; Gentile, John; Fuentes-Pineda, Gibran: BIG DATA ANALYSIS FOR CALCULATING SUSTAINABLE YIELD AND DEFINING THE FEASIBLE NEGOTIATION SPACE FOR AN AQUIFER SYSTEM

8-56  78  Pippin, James*; Pierce, Suzanne A.; Gentle, John: USING 3-DIMENSIONAL POINT CLOUD DATA TO MAP CAVE AND KARST FEATURES

SESSION NO. 9

9-1  01  Sprinkle, James*: Zachos, Louis G.: NEW PARACRINOID (BLASTOZOAN ECHINODERM) FROM THE MCLISH FORMATION (DARRIWILIAN; LATE MIDDLE ORDOVICIAN), IN SOUTHERN OKLAHOMA

9-2  02  Foster, William J.; Danise, Silvia; Price, Gregory D.; Twitchett, Richard J.: PALEOECONOMY OF THE LOWER TRIASSIC SERVINO FORMATION, ITALY

9-3  03  Yancey, Thomas E.*; Winter, Diane M.: LATE EOCENE DIATOMITES IN TEXAS REVEAL GULF OF MEXICO BISOLICILIESE SEDIMENTATION

9-4  04  Adams, Thomas*: Noto, Christopher; Drumheller, Stephanie K.: NEW DATA ON MID- CRETACEOUS ECOSYSTEMS AND FAUNAL DIVERSITY IN APPALACHIA: INSIGHTS FROM THE WOODBINE FORMATION (CENOMANIAN) OF NORTH TEXAS

9-5  05  Van Vranken, Nathan*: TEXAS CRETACEOUS ICHTHYOPODS: A GLIMPSE OF THEIR LAST DAYS IN THE EARLY-LATE CRETACEOUS

9-6  06  Reistroffer, Maria Therese*; Foster, William J.; Martindale, Rowan C.; Twitchett, Richard J.: TIMING OF OCEAN ACIDIFICATION AT THE LATEST PERMIAN MASS EXTINCTION: EVIDENCE FROM FOSSILS

9-7  07  Eisker, Don*; Forman, Steven L.; Butler, Dava K.: THE CLIMATE IMPLICATIONS OF GIANT TORTOISES IN PLEISTOCENE NORTH AMERICA

9-8  08  Macrini, Thomas E.*; Turner, David; Ramirez, Briana; Khan, Hauz; Marrone, Tatiana; Perez, Samantha: TAXONOMIC AND PROVENANCE ANALYSIS OF A LEGACY COLLECTION OF FOSSIL FISH BONES FROM LIVE OAK COUNTY, TEXAS

SESSION ORAL TECHNICAL SESSIONS

AFTERNOON
### SESSION NO. 10

**T13. Texas Water Research Network: A Statewide Initiative to Integrate and Advance Water Research from Inception to Application II (GSA Hydrogeology Division; GSA Karst Division)**

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<td>Brian B. Hunt, John M. Sharp and Suzanne A. Pierce, Presiding</td>
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**SESSION NO. 11**

**T14. Groundwater Availability in Texas: Rule of Capture and Sustainable to Consensus Yield (GSA Hydrogeology Division; GSA Karst Division)**

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2017 GSA South-Central Section Meeting 21
SESSION NO. 13

T3. Advances in Sedimentology, Stratigraphy, and Geochemistry of Carbonates and Mixed Carbonate Clastic Systems (GSA Karst Division; GSA Sedimentary Geology Division)

8:00 AM, Omni Colonnade San Antonio Grand Ballroom B

Daniel J. Lehrmann and André W. Droxler, Presiding

8:00 AM INTRODUCTORY REMARKS

13-1  8:05 AM Harrison, Jemma*; Last, Fawn; Last, William: DEVELOPMENT OF MODERN AND HOLOCENE LACUSTRINE MICROBIALITIES FROM A CANADIAN GREAT PLAINS LAKE

13-2  8:25 AM Li, Zijian*; Griffith, Elizabeth M.; Gaines, Emma; Wronkiewicz, David J.; Paul, Varun; Fan, Maggie: GEOCHEMISTRY OF MICROBIALITIES AND WATER IN STORR’S LAKE, SAN SALVADOR, BAHAMAS

13-3  8:45 AM Hopson, Heath Hilton*; Droxler, Andre W.; Khanna, Pankaj; Lehmann, Dan; Harris, Paul M.; Dravis, Jeffrey; Droxler, Dylan A.: MICROBIAL GROWTH PROCESSES AND FABRIC DEVELOPMENT IN UPPER CAMBRIAN MICROBIAL BUILDUPS; MASON COUNTY, CENTRAL TEXAS

13-4  9:05 AM Kelleher, Caroline*; Liu, Jingxuan; Lehmann, Adrien; Yazbek, Lindsey D.; Mercado, Lauren; Droxler, Andre W.; Khanna, Pankaj; Hopson, Heath Hilton; Lehmann, Daniel J.: ENVIRONMENTAL AND SEQUENCE STRATIGRAPHIC CONTROL ON MICROBIALITE MORPHOLOGY AND MICROFACIES IN A MARINE MIXED CARBONATE SILICICLASTIC SYSTEM, UPPER CAMBRIAN POINT PEAK FM., LLANO RIVER AND MILL CREEK, MASON COUNTY, CENTRAL TEXAS

13-5  9:25 AM Khanna, Pankaj*; Droxler, Andre W.; Harris, Paul M.; Lehmann, Daniel J.: QUALITATIVE AND QUANTITATIVE ANALYSIS OF UPPER CAMBRIAN MICROBIAL REEFS, MASON, TEXAS

13-6  9:45 AM Proctor, Jacob Michael*; Hopson, Heath Hilton; Droxler, Andre W.; Derzhi, Naum; Khanna, Pankaj; Lehmann, Daniel J.: GENETIC PORE TYPES AND A DIAGENESIS LOG FOR CARBONATES AND MICROBIALITE RESERVOIRS (UPPER CAMBRIAN MICROBIAL REEFS, MASON COUNTY, CENTRAL TEXAS)

10:05 AM BREAK

13-7  10:20 AM Li, Xiaowei*; Kelley, Brian M.; Minzoni, Marcello; Yu, Meiyi; Payne, Jonathan L.; Lehmann, Daniel J.: HIGH-RELIEF OOLITE PLATFORM MARGINS IN THE NANPANJIANG BASIN OF SOUTH CHINA RESULTED FROM EXTREME SEAWATER CARBONATE SATURATION IN THE EARLY TRIASSIC AFTERMATH OF THE END-PERMIAN MASS EXTINCTION

SESSION NO. 14

T8. Subsurface Exploration Techniques in the South-Central U.S. (GSA Archaeological Geology Division; GSA Geophysics Division)

8:00 AM, Omni Colonnade San Antonio Grand Ballroom F

Evelynn J. Mitchell and Ronald Green, Presiding

8:00 AM INTRODUCTORY REMARKS

14-1  8:05 AM Mitchell, Evelynn J.*: DETECTION OF SHALLOW KARST FEATURES WITH GEOPHYSICAL TECHNIQUES: GROUND TRUTHING THE RESULTS

14-2  8:25 AM Klar, Richard V.*; McCoy, Zaneta L.; Prikryl, James D.: REDUCING THE UNCERTAINTY OF SITE CHARACTERIZATION STUDIES IN KARST SETTINGS THROUGH THE USE OF NEAR-SURFACE GEOPHYSICS

14-3  8:45 AM Aboba, Olarewuaju*: Liner, Christopher L.: 3D SEISMIC EXPRESSION OF PALEOKARST: AN EXAMPLE FROM OSAGE COUNTY, OKLAHOMA

14-4  9:05 AM Wernette, Philippe A.*; Houser, Chris; Weymer, Bradley A.; Everett, Mark E.; Bishop, Michael P.; Reece, Robert S.: ASSESSING THE ROLE OF FRAMEWORK GEOLOGY ON BARRIER ISLAND GEOMORPHOLOGY


9:45 AM BREAK

14-6  10:00 AM Nichols, Kristi Miller*: INVESTIGATING SPANISH COLONIAL FEATURES USING GPR IN URBAN SETTINGS

14-7  10:20 AM Terry, Marcus D.*: THE INFLUENCE OF SEISMIC ANISOTROPY ON THE LOCATION OF MICROSEISMIC EVENTS

14-8  10:40 AM Olson, Elizabeth D.*; Clift, Peter D.; Lorenzo, Juan M.; Lichnowskyi, Alexandra N.; Barbato, Allison K.; Buhyoff, Erinn; Babin, Daniel Paul: COMBINING DOWNHOLE AND SEDIMENT LOGGING TO UNDERSTAND THE RESERVOIR CHARACTERISTICS OF A LARGE-SCALE MISSISSIPPI RIVER POINT BAR, FALSE RIVER, LOUISIANA

14-9  11:00 AM Barbato, Allison K.*; Clift, Peter D.; Olson, Elizabeth D.; Jones, Claire R.: USING GRAINSIZE ANALYSIS TO REFINE INTERNAL CHARACTERISTICS OF THE FALSE RIVER POINT BAR; LOWER MISSISSIPPI RIVER, LOUISIANA

14-10 11:20 AM Wang, Guoquan*: TWO DECADES GPS OBSERVATIONS IN THE GREATER HOUSTON AREA: A TESTIMONY TO THE COMPLEXITY OF LAND SUBSIDENCE AND UPLIFT

11:40 AM CLOSING REMARKS
SESSION NO. 15
T10. Late Paleozoic Tectonic Framework of the South-Central Region and Evolution of the Permain Basin (GSA Structural Geology and Tectonics Division)
8:00 AM, Omni Colonnade San Antonio Grand Ballroom A
Robert J. Stern, Thomas E. Ewing and Lowell Waite, Presiding
15-1 8:00 AM Keller, G. Randy*: REGIONAL CRUSTAL STRUCTURE OF THE SOUTH-CENTRAL US AND ITS TECTONIC EVOLUTION: A REVIEW
15-2 8:20 AM Gao, Zhihu*; Perez, Nicholas: LATE PALEOZOIC TECTONIC FRAMEWORK OF THE SOUTH-CENTRAL REGION AND EVOLUTION OF THE PERMAIN BASIN
15-3 8:40 AM Stern, Robert J.; Waite, Lowell; Moecher, David; Fan, Majie; Greb, Stephen F.: THE GREAT PENNSYLVIANIAN RIVER: A LINK BETWEEN PERMAIN BASIN HYROCARBONS AND LATE PALEOZOIC COLLISION?
15-4 9:00 AM Ewing, Thomas E.*: LATE PALEOZOIC STRUCTURES IN THE ANCESTRAL ROCKY MOUNTAINS OF THE WEST TEXAS AREA - PRODUCT OF NORTHEAST-DIRECTED COMPRESSION
15-6 9:40 AM Mickus, Kevin L.*; Stern, Robert; George, Mark; Woller, Kevin: GRAVITY AND MAGNETIC MODELING OF THE SOUTHERN PERMAIN BASIN, W. TEXAS
15-7 10:00 AM Ewing, Thomas E.*: THE PERMAIN BASIN - INTRACRATONIC SUBSIDENCE IN WESTERN PANGEA TRIGGERED BY COMPRESSION

SESSION NO. 16
T12. Upper Crustal Deformation across Continental Interiors from the Mesozoic to the Present (GSA Structural Geology and Tectonics Division)
10:35 AM, Omni Colonnade San Antonio Grand Ballroom A
Keith Gray, Matthew P. McKay and Benjamin Surpless, Presiding
16-1 10:35 AM Sharman, Glenn R.*; Covault, Jacob A.; Flaga, Peter P.; Stockli, Daniel F.; Miranda Berrocales, Viridis M.: TECTONIC STRATIGRAPHY OF THE LARAMIDE DENVER BASIN FORELAND: INSIGHTS FROM DETRITAL ZIRCON U-PB GEOCHRONOLOGY
16-2 10:55 AM Ewing, Thomas E.*: SAN MARCOS ARCH AND SABINE ARCH - FLEXURES RELATED TO MEXICAN LARAMIDE (HIDALGOAN) COMPRESSION
16-3 11:15 AM McKay, Matthew P.*; Jackson, William T.: TECTONIC STRESS REGIMES RECORDED IN ZIRCON GEOCHEMISTRY
16-4 11:35 AM Helesic, Jacob*; Petronis, Michael; Kelsch, Jesse M.; Dickerson, Patricia W.; Urbanczyk, Kevin M.; Rohr, David: A PALEOMAGNETIC ANALYSIS OF VERTICAL AXIS ROTATION ALONG THE TASCOTAL MESA FAULT IN FAR WEST TEXAS
16-5 11:55 AM Thorne, Sarah*: Surpless, Benjamin: TESTING A PREDICTIVE MODEL OF FAULT SEGMENTATION USING STREAM PROFILE ANALYSIS: A CASE STUDY FROM THE WASSUK NORMAL FAULT SYSTEM, NEVADA

SESSION NO. 17
T3. Advances in Sedimentology, Stratigraphy, and Geochemistry of Carbonates and Mixed Carbonate Clastic Systems (Posters) (GSA Karst Division; GSA Sedimentary Geology Division)
9:00 AM, Omni Colonnade San Antonio Grand Ballroom CDE
Authors will be present from 2:30 to 4:30 PM
Booth #
17-1 1 Liu, Jingxuan*: Singh, Pulkit; Zhou, Yuanquan; Hopson, Heath Hilton; Proctor, Jacob Michael; Khanna, Pankaj; Droxler, Andre W.; Lehmann, Dan; Harris, Paul M.; Dravis, Jeffrey: "BREAD LOAF" MOUNDS: MICROBIAL REEFS ON A MIXED CARBONATE SILICICLASTIC INBOARD SHELF, UPPER CAMBRIAN WILBERNS FORMATION (MASON COUNTY, CENTRAL TEXAS)
17-2 2 Zhou, Yuanquan*: Trottot, Roberto P.; Hopson, Heath Hilton; Khanna, Pankaj; Droxler, Andre W.; Lehmann, Daniel J.; Harris, Paul M.: NATURE OF THE OVERLYING STRATA, OR "COVER" OF AN UPPER CAMBRIAN MICROBIAL REEF COMPLEX (MASON COUNTY, CENTRAL TEXAS): POTENTIAL CLUES TO THE MICROBIAL DEMISE
17-3 3 Singh, Pulkit*: Droxler, Andre W.; Hopson, Heath H.; Khanna, Pankaj; Lehmann, Dan; Droxler, Dylan A.; Jovane, Luigi; Harris, Paul M.; Dravis, Jeffrey; Rodelli, Daniel: AN INVESTIGATIVE STUDY INTO THE DEMISE OF THE UPPER CAMBRIAN MICROBIAL REEFS (MASON COUNTY, TEXAS)
17-4 4 Vaughan, George C.*: PRELIMINARY CHARACTERIZATION OF PERMAIN WORD FORMATION CLASTICS AND CARBONATES FROM THE NORTHWEST GLASS MOUNTAINS OF WEST TEXAS
17-5 5 Thorne, Sarah*: Kelleher, Caroline; Foster, William J.; Payne, Jonathan L.; Yu, Meiyi; Lehmann, Daniel J.: UPPER PERMAIN REEF AND SHELF FACES OF THE SOUTHERN MARGIN OF THE YANGTZE PLATFORM, SOUTH CHINA: EFFECTS OF DOLOMITIZATION PROCESSES ON PORE TYPES
17-6 6 Stepchinski, Leanne*: Li, Xiaowei; Minzoni, Marcello; Payne, Jonathan L.; Lehmann, Daniel J.: CONTROLS ON CARBONATE FACTORIES IN THE TRANSITION FROM RAMP TO REEF-RIMMED PLATFORM IN THE HONGYAN SECTION OF THE TRIASSIC YANGTZE PLATFORM
17-7 7 Li, Xiaowei*: Lehmann, Daniel J.; Minzoni, Marcello; Yu, Meiyi; Payne, Jonathan L.: DOLOMITE HOSTED IN THE MIDDLE TRIASSIC CARBONATE PLATFORM OF THE NANPAJANG BASIN, SOUTH CHINA: EFFECTS OF DOLOMITIZATION PROCESSES ON PORE TYPES
17-8 8 Kelleher, Caroline*: Thorne, Sarah; Minzoni, Marcello; Yu, Meiyi; Lehmann, Dan: MECHANISMS CONTROLLING GIANT SECTOR COLLAPSE (SCALLOPED MARGIN) OF THE YANGTZE PLATFORM MARGIN, NANPAJANG BASIN, SOUTH CHINA
17-10 10 Bruce, David*: Parcell, William C.: ELEMENTAL AND MINERAL STRATIGRAPHY OF MIXED CARBONATE-CLASTIC SYSTEM: MIDDLE JURASSIC GYPSUM SPRING FORMATION, BIGHORN BASIN, WYOMING
17-11 11 Diehl, Brian C.*: SEQUENCE STRATIGRAPHIC RELATIONS OF THE FREDERICKSBURG AND WASHTIA GROUPS, LOWER CRETACEOUS CARBONATE SHELF, TEXAS
17-12 12 Wehner, Matthew*: Grosskopf, Jacob: ANTONIO CREEK SECTION MILANKOVITCH CYCLE DETECTION AND OAE 2 CORRELATION TO OTHER LOCATIONS IN THE WESTERN INTERIOR SEAWAY DESPITE HIATUSES
17-13 13 Green, Hunter*: Walsh, Tim R.: A STATISTICAL APPROACH TO ASSESSING HANDHELD GAMMA RAY SPECTROMETERS ON OUTCROP DATA

2017 GSA South-Central Section Meeting 23
SESSION NO. 18

T4. The Impact of Oceanographic Conditions, Oaes, and Volcanism on an Unconventional Reservoir System: The Late Cretaceous Eagle Ford and Austin Chalk Groups of the Gulf Coast (Posters) (GSA Sedimentary Geology Division)

9:00 AM, Omni Colonnade San Antonio Grand Ballroom CDE

Authors will be present from 9:30 to 11:30 AM

Booth #

18-1 15 Lohr, Celeste D.*; Valentine, Brett J.; Hackley, Paul C.: THERMAL MATURITY IN THE TUSCALOOSA MARINE SHALE PLAY AREA: PRELIMINARY OBSERVATIONS FROM STUDIES TO SUPPORT OIL AND NATURAL GAS RESOURCES

18-2 16 Deluca, Michael J.*; Wehner, Matthew P.; Miller, Brent V.; Pope, Michael C.: U-PB ZIRCON DATING OF VOLCANIC ASH BEDS IN THE EAGLE FORD SHALE: IMPLICATIONS FOR REGIONAL CORRELATION AND CAE2 IN THE SOUTHERN CRETACEOUS WESTERN INTERIOR SEAWAY

18-3 17 Slabic, Ane*; Lapen, Thomas J.: U-TH-PB CHRONOLOGY OF FISH BONE IN PETROLEUM SOURCE ROCKS: AN EXAMPLE FROM THE EAGLE FORD GROUP, TEXAS

18-4 18 Quante, Nicolas*; Weissling, Blake; Godet, Alexis; Xie, Hongjie: INVESTIGATION OF A CRETACEOUS VOLCANIC CENTER IN MEDINA COUNTY, TEXAS VIA MAGNETIC & GRAVITY SURVEYING

SESSION NO. 19

T5. Micro- to Macroscopic Evidence of Life and its Implications for the Evolution and Interpretation of the Biosphere in Earth Systems (Posters) (GSA Geobiology & Geomicrobiology Division; GSA Karst Division)

9:00 AM, Omni Colonnade San Antonio Grand Ballroom CDE

Authors will be present from 9:30 to 11:30 AM

Booth #

19-1 19 De La Garza, Randolph Glenn*; Gonzalez, Juan L.: REFINING THE CHRONOLOGY OF A UNIQUE MASS GRAVE OF GIANT TORTOISES WITHIN THE LATE PLEISTOCENE RAYMONDVILLE FLUVIAL SYSTEM, WILLACY COUNTY, TEXAS

19-2 20 Brame, Hannah-Maria R.; Ettinger, Nicholas P.; Martindale, Rowan C.; Bodin, Stéphane: ABERRANT BIVALVES AND TENACIOUS CORALS OF THE EARLY JURASSIC, MOROCCO: SURVIVORS OF EXTINCTION AND OCEANIC ANOXIA

19-3 21 Wiest, Logan A.; Esker, Don; Driese, Steven G.: WACO MAMMOTH NATIONAL MONUMENT (WACO MAMMOTH SITE) WAS NOT BURIED RAPIDLY

19-4 22 Weiss, Anna M.*; Martindale, Rowan; Kolir, Adrijan: A HIGH RESOLUTION ANALYSIS OF FAUNAL AND ENVIRONMENTAL CHANGE IN A SHALLOW–WATER BENTHIC COMMUNITY DURING THE PALEOCENE–EOCENE THERMAL MAXIMUM (SLOVENIA)

SESSION NO. 20

T8. Subsurface Exploration Techniques in the South-Central U.S. (Posters) (GSA Archaeological Geology Division; GSA Geophysics Division)

9:00 AM, Omni Colonnade San Antonio Grand Ballroom CDE

Authors will be present from 2:30 to 4:30 PM

Booth #

20-1 23 Valentine, Leslie*; Costigan, Katie H.: USING AERIAL IMAGERY TO DETERMINE VARIOUS EFFECTS OF ANTHROPOGENIC STRUCTURES AND RESTORATION EFFORTS ON THE HYDROLOGIC REGIME IN THE UPPER REGION OF THE ATCHAFALAYA RIVER BASIN

20-2 24 Willis, Jennifer Ann*: MODELING FLUVIAL CHANGES USING LIDAR, 2006-2011, CAMERON COUNTY, TEXAS

20-3 25 Burch, Samuel*: Urbanczyk, Kevin M.: AN ASSESSMENT OF AERIAL LIDAR FOR GEOMORPHIC CHANGE DETECTION WITHIN BOQUILLAS CANYON, BIG BEND NATIONAL PARK, TEXAS

SESSION NO. 21

T9. Fostering Cultures of Deliberate Inclusion in Geosciences (Posters) (GSA Geoscience Education Division; International Association for Geoscience Diversity)

9:00 AM, Omni Colonnade San Antonio Grand Ballroom CDE

Authors will be present from 9:30 to 11:30 AM

Booth #

21-1 33 Carsrud, Corbin T.; Urbanczyk, Kevin M.; Roberson, Jake: 3D MODELING OF OUTCROP SCALE FEATURES IN THE BIG BEND RANCH STATE PARK USING STRUCTURE FROM MOTION PHOTOGRAMMETRY TECHNIQUES

21-2 34 Wernette, Phillippe A.*; Houser, Chris; Nunez, Judy; Quick, Chris: PROMOTING DIVERSITY AND INCLUSION IN THE GEOSCIENCES IS VITAL TO STUDENT SUCCESS BY DEVELOPING A SAFE AND EFFECTIVE LEARNING COMMUNITY

21-3 35 Hooper, Donald*: Ximenes, Samuel; Webb, Joules: SPACE-STEM EDUCATION THROUGH THE LUNAR CAVES ANALOG TEST SITES (LCATS) PROGRAM

SESSION NO. 22

T11. Petroleum and Water Interactions in Mexico’s South-Central Region (Posters) (GSA International/International Interdisciplinary Interest Group)

9:00 AM, Omni Colonnade San Antonio Grand Ballroom CDE

Authors will be present from 9:30 to 11:30 AM

Booth #

22-1 36 Huizer Alvarez, Rafael*: THE GROUNDWATER MANAGEMENT UNIT IN MEXICO

22-2 37 Ventura, René*: GROUNDWATER VULNERABILITY IN SHALE GAS EXTRACTION AREAS FROM A BASIN IN THE NORTHEAST OF MEXICO, BASED ON A GIS DRASIC MODEL

22-3 38 Cauch-Kau, Dario del Angel*: Cardona, Antonio; Giacomoni-Vallejos, German; Rocha-Escalante, Hermann; Ruede, Thomas: INTEGRATING GEOPHYSICAL AND GEOCHEMICAL MEASUREMENTS TO CHARACTERIZE FRESH/BRACKISH/SALINE GROUNDWATER: A CASE STUDY IN A CARBONATE AQUIFER
SESSION NO. 23
T12. Upper Crustal Deformation across Continental Interiors from the Mesozoic to the Present (Posters) (GSA Structural Geology and Tectonics Division)
9:00 AM, Omni Colonnade San Antonio Grand Ballroom CDE
Authors will be present from 2:30 to 4:30 PM

23-1  41 Mathy, Hannah*; Surpless, Benjamin; Simoneoue, Samuel O.: USING 3D COMPUTER MODELS TO TEST EN ECHELON NORMAL FAULT EVOLUTION

23-3  43 Simouene, Samuel O.*; Surpless, Benjamin; Mathy, Hannah: THE IMPACT OF NORMAL FAULT TRANSFER ZONES ON THE EVOLUTION OF SUBSIDARY FRACTURE NETWORKS: A CASE STUDY FROM THE SEVIER FAULT ZONE, SOUTHERN UTAH

23-4  44 Gray, K.*: TEMPORALLY OVERLAPPING INTRACONTINENTAL CONTRACTION AND TERRANE ACCRETION IN THE CENTRAL NORTH AMERICAN CORDILLERA

23-5  45 Sanchez, Veronica*: RIFTING MECHANISMS AND GEOMETRIES FROM THE PERSPECTIVE OF SOUTH-CENTRAL TIBET AND WEST TEXAS

23-6  46 Kolawole, Folarin*; Atekwana, Estella A.; Abdelsalaam, Mohamed G.; Laó-Dávila, Daniel A.; Ivey, Toni A.; Chindandali, Patrick R.N.; Salima, Jall: THE 2009 KARONGA, MALAWI EARTHQUAKE ASSOCIATED WITH PARTIAL RUPTURE OF A BLIND CENOZOIC FAULT: EVIDENCE FROM AEROMAGNETIC AND ELECTRICAL RESISTIVITY DATA

SESSION NO. 24
Research in Hydrogeology, Geochemistry, and Soils (Posters)
9:00 AM, Omni Colonnade San Antonio Grand Ballroom CDE
Authors will be present from 9:30 to 11:30 AM

24-1  47 Peiris, Inoka*; Brikowski, Tom H.: INVESTIGATION OF TEMPORAL VARIATION OF NPHROTOXINS IN GROUNDWATER, NORTH CENTRAL PROVINCE, SRI LANKA

24-4  50 Watkins, Joseph D.*; Shaw Faulkner, Melinda: DELINEATING POTENTIAL WATERSHED CONTRIBUTION TO MERCURY CONCENTRATION IN CADDIO LAKE, HARRISON AND MARION COUNTIES, TEXAS

24-5  51 Phung, Linda*: Cheng, Chu-Lin; Hinthorne, James: INVESTIGATION OF URANIUM OCCURRENCE IN SURFACE WATER AND GROUNDWATER IN SOUTH TEXAS

24-6  52 Schott, Allison N.*: WATER QUALITY ANALYSIS OF FINGER LAKES STATE PARK, MISSOURI: POTENTIAL IMPACTS OF A RECLAIMED COAL MINE

SESSION NO. 25
Research in Sedimentology and Stratigraphy (Posters)
9:00 AM, Omni Colonnade San Antonio Grand Ballroom CDE
Authors will be present from 2:30 to 4:30 PM

25-1  58 Li, Yuting*; Clift, Peter D.; Bönig, Philipp; Bluszczaj, Jerzy S.; Murray, Richard W.; Ireland, Thomas; Pahlke, Katharina; Giosan, Liviu: CONTROLS ON SEDIMENT FLUX THROUGH THE INDUS SUBMARINE CANYON SINCE THE LAST DEGLACIAL

25-5  62 Wolf, Emery Charles*: WATER PLANNING AT A GLANCE: SYSTEMS AND TOPICAL ANALYSIS OF REGIONAL PATTERNS FOR THE STATE OF TEXAS

25-6  63 Langford, Richard*: Collins, Joe D.; Gil, Thomas E.; Guijarro, Carolina: TEST OF STATISTICAL UNMIXING OF SEDIMENT POPULATIONS

25-7  64 Pope, Michael*: Ligun, Walker: DETERMINING LITHOLOGIC VARIATIONS, PROVENANCE, AND DEPOSITIONAL ENVIRONMENTS OF THE DEL RIO FORMATION IN WEST TEXAS

25-8  65 Flaming, Peter Lee*; Sumrall, Jonathan B.: PETROGRAPHIC ANALYSIS OF HIGHLY CEMENTED PARTIALLY DOLOMITIZED CHALKS FROM BARBADOS, WEST INDIES


25-11  68 Olivas Tena, Jorge R.*; Ali, Hendratta; Tedesco, Steven A.: CHARACTERIZING PALEO ENVIRONMENTS AND DIAGENETIC PROCESSES IN THE OSSAGE RIVER BASIN, USING GEOCHEMICAL DATA AND WELL LOGS

25-12  69 Thompson, Jacob T.; Johnson, Harold; Hames, Willis; Miller, Brent V.: DETRITAL ZIRCON AND MUSCOVITE AGE SPECTRA, ACROSS THE MISSISSIPPIAN-PENNYSYLVTIAN BOUNDARY, OUACHITA BASIN, OKLAHOMA
SESSION NO. 26

Research in Structural Geology, Geomorphology, and Igneous Processes (Posters)

9:00 AM, Omni Colonnade San Antonio Grand Ballroom CDE

SESSION NO. 27

T4. The Impact of Oceanographic Conditions, Oaes, and Volcanism on an Unconventional Reservoir System: The Late Cretaceous Eagle Ford and Austin Chalk Groups of the Gulf Coast (GSA Sedimentary Geology Division)

1:30 PM, Omni Colonnade San Antonio Grand Ballroom A

Alexis Godet, Michael Pope, Robert J. Stern, Jonathan E. Snow and Steve Bergman, Presiding

1:30 PM INTRODUCTORY REMARKS

27-1 1:35 PM Eidrett, James*; Bergman, Steve; Minaini, Daniel: GLOBAL, REGIONAL AND LOCAL CONTROLS ON ORGANIC MATTER PRODUCTION AND PRESERVATION: EVIDENCE FROM THE EAGLE FORD, MAYERICK BASIN, TX, USA

27-2 1:55 PM Pope, Michael C.*; Donovan, Arthur D.; Miller, Brent V.; Tice, Michael M.; Conte, Roy; Peavy, Eric James; Wehner, Matthew: EAGLE FORD GROUP DEPOSITION AND CORRELATION IN SOUTH AND WEST TEXAS, INSIGHTS FROM OUTCROPS AND CORES

27-3 2:15 PM Sun, Lei*: Khan, Shuhab: GROUND-BASED HYPER SPECTRAL IMAGING OF THE EAGLE FORD FORMATION

27-4 2:35 PM Peavy, Eric J.*; Bormanns, Sean C.; Bonnette, Grant J.; Pachuka, Fernando; Merrill, Clayton W.; Purwamaska, Ivanakbar; Deluca, Michael J.; Moore, Bronwyn: CHEMOSTRATIGRAPHIC ANALYSIS AND CORRELATION OF EAGLE FORD GROUP-EQUIVALENT STRATIGRAPHY ACROSS WEST TEXAS

2:55 PM BREAK

SESSION NO. 28

T9. Fostering Cultures of Deliberate Inclusion in Geosciences (GSA Geoscience Education Division; International Association for Geoscience Diversity)

1:30 PM, Omni Colonnade San Antonio Grand Ballroom F

Stephen K. Boss, Presiding

1:30 PM INTRODUCTORY REMARKS

28-1 1:35 PM Boss, Stephen K.*: FOSTERING COMMUNITIES OF DELIBERATE INCLUSION IN GEOSCIENCES

28-2 1:55 PM Wheatcraft, Jeff*: Turner, David R.; McCue, Marshall: DEVELOPING A GEOSCIENCE-FOCUSED PROJECT BASED LEARNING ASSESSMENT FOR EIGHTH GRADE STEM EDUCATION

28-3 2:15 PM Busbey, Arthur B.*: IPAD MAPPING APPLICATIONS: EVALUATION AND WORKFLOW

28-4 2:35 PM Wang, Ning*: Stern, Robert: USING VIDEOGRAPHY, 3D PHOTOREALISTIC MODELS AND AN INEXPENSIVE DRONE TO HELP IMPROVE GEOSCIENCE RESEARCH AND EDUCATION AT THE UNIVERSITY OF TEXAS AT DALLAS

28-5 2:55 PM Williams, Wendi J.W.*: INCLUSIVE EDUCATIONAL METHODS FOR 2YC AND 4YC ENVIRONMENTS

28-6 3:15 PM Mathewson, Christopher*: SO HOW DOES PROFESSIONAL LICENSURE IN GEOSCIENCE IMPACT ME?

3:35 PM BREAK

28-7 3:50 PM Yin, Zoe*: Tandon, Salon; Aguilera, Kimberly N.; Etzel, Thomas M.; Catois, Elizabeth J.; Elliott, Brent; Kyle, J. Richard: LESSONS LEARNED FROM AN INTERNATIONAL RESEARCH EXPERIENCE FROM THE UNDERREPRESENTED STUDENT PERSPECTIVE

28-8 4:10 PM Turner, David R.*; Oxley, Susan; Sperling, Rick; Faris, Nicole: A COLLABORATIVE MULTIDISCIPLINARY PROGRAM USING LOCATION BASED URBAN FIELD WORK TO ENHANCE STEM EDUCATION OUTCOMES

28-9 4:30 PM Moore, Samuel*: Hofer, Matthew; Hash, John: GEOFORCE TEXAS: A COLLECTIVE IMPACT FOR INCLUSION IN THE GEOSCIENCES

28-10 4:50 PM Boss, Stephen K.*: MICROAGRESSIONS AS BARRIERS TO INCLUSION IN GEOSCIENCES
SESSION NO. 29

T11. Petroleum and Water Interactions in Mexico’s South-Central Region (GSA International/International Interdisciplinary Interest Group)

1:30 PM, Omni Colonnade San Antonio Grand Ballroom B

Antonio Cardona, Todd Halihan and Martin Carlos Vidal Garcia, Presiding

1:30 PM INTRODUCTORY REMARKS

29-1 1:35 PM Vidal García, Martin Carlos*: HYDROGEOLOGY A CHALLENGE IN THE GENERATION OF ENERGY RESOURCES IN MEXICO

29-2 1:55 PM Brena-Naranjo, Jose Agustin*; Hernandez-Espriú, Antonio: A FRAMEWORK TO QUANTIFY WATER AVAILABILITY IN SHALE GAS REGIONS OF MEXICO: BASELINE AND DEVELOPMENT SCENARIOS

29-3 2:15 PM Carrillo-Rivera, José Joel*: Cardona, Antonio: VERTICAL FLOW AND EARLY ALERT IN LOW HYDRAULIC CONDUCTIVITY MEDIA

29-4 2:35 PM Garfias Quezada, Alberto*; Pita de la Paz, Carlos; Sánchez Galindo, Luis Alfredo; García Perez, Sergio Jose; García Garcia, Emilio: INTEGRATED GEOPHYSICAL SURVEY IN SABINAS BASIN FOR THE EVALUATION OF DEEP AQUIFERS AND NON-CONVENTIONAL RESOURCES (SHALE GAS)

29-5 2:55 PM Cardona, Antonio*: Alonso Torres, Socrates; Castro Larragoitia, Guillermo Javier; Aceves de Alba, Jorge; Carrillo-Rivera, José Joel: HYDROCHEMICAL CHARACTERIZATION OF BRACKISH GROUNDWATER IN LOWER RIO BRAVO AQUIFER, TAMAULIPAS, MEXICO

3:15 PM BREAK

29-6 3:30 PM Rocha-Escalante, Hermann*; Ruede, Thomas R.; Cardona, Antonio; Giacoman-Vallejos, German; Cauich-Kau, Dario del Angel: GROUNDWATER USE AND ITS IMPLICATIONS IN COASTAL ECOSYSTEMS REQUIREMENTS: A CASE STUDY IN A COASTAL KARSTIC AQUIFER BY GROUNDWATER MODELING

29-7 3:50 PM Plenge, Megan F.*; Muniz, Yvette; Shiels, R. David; Webber, Miguel; Martinez-Abrego, Andrea; Zhong, Rui; Liaw, Ellen: CHANGES TO SUBSURFACE MICROBIAL DIVERSITY FOLLOWING HYDROCARBON CONTAMINATION AND REMEDIATION

29-8 4:10 PM Davila Porcel, René Alberto*; de León-Gómez, Héctor; Rodríguez-Martinez, Juan Manuel; Castro Larragoitia, Guillermo Javier; Cardona, Antonio; Villalba, Maria de Lourdes; Pinales, Adan; de La Garza, Rodrigo; Silva Hidalgo, Humberto; Cruz Lopez, Arquimedes: DIAGNOSIS OF EMERGING CONTAMINANTS AND HEAVY METALS IN THE WATER AND SEDIMENTS OF THE RIVER SANTA CATARINA IN THE METROPOLITAN AREA OF MONTERREY TO DETERMINE THE IMPACT ON ITS QUALITY AND ITS SUSTAINABLE USE

4:30 PM DISCUSSION
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