



GSA SOUTHEASTERN SECTION MEETING

12–13 April

Hilton Knoxville, Knoxville, Tennessee, USA

www.geosociety.org/se-mtg

Photo by Bruce McCamish.

Program



Southeastern Section GSA Officers for 2018

Chair	Jonathan W. Mies
Past Chair	Robert J. Tracy
Vice Chair	Colin D. Sumrall
Past Vice Chair	David Spears
Secretary-Treasurer	Blair R. Tormey
Chair Elect	Venkataraman Lakshmi

Local Committee for the 2018 Meeting

General Chair	Colin D. Sumrall
Treasurer	Harry Y. McSween
Technical Program Co-Chairs	Linda C. Kah, Robert D. Hatcher, Jr.
Field Trips Co-Chairs	Annette S. Engel, Robert D. Hatcher, Jr.
Student Volunteer Coordinator	Christopher M. Fedo
Exhibits Coordinator	Bradley Thomson
Sponsorship Co-Chairs	Larry D. McKay, Edmund Perfect

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 35). If you need to report unacceptable behavior, please contact:

GSA Director of Membership Development, Pat Kilner, pkilner@geosociety.org

GSA Past President, Claudia I. Mora, cmora@lanl.gov

You may also stop by registration or the GSA Bookstore to have them directly contacted via phone.



Dr. Robert M. Hazen

Carnegie Institute for Science—Geophysical Laboratory

Author of

The Story of Earth: The First 4.5 Billion Years, from Stardust to Living Planet

and

Genesis: The Scientific Quest for Life's Origins



A fundamental goal of the geological sciences is the deep understanding of planetary evolution. Recent research employing large and growing data resources in mineralogy, petrology, paleobiology, paleotectonics, geochemistry, and proteomics underscores the intertwined influences of life and rocks on Earth's evolution. We therefore are exploring "big-data" approaches to longstanding problems in geology.

Data-driven discovery depends on three key developments: (1) enhanced data resources in diverse geo- and bio-related fields; (2) development and implementation of powerful analytical and visualization methods; and (3) creative framing of questions related to the evolving geosphere and biosphere in space and time.

We are especially interested in visualization methods that illustrate multiple attributes of complex systems. In particular, network analysis provides a dynamic, quantitative, and predictive visualization framework for employing "big data" to explore complex and otherwise hidden higher-dimensional patterns of diversity and distribution in mineralogy, paleobiology, and protein structures. Network analysis facilitates quantitative comparison of coexistence patterns simultaneously among hundreds of mineral or fossil species and their localities, exploration of varied paragenetic modes of mineral groups, investigation of changing patterns of mineral and fossil occurrence through deep time, and comparisons of lithologies from different planets and moons. Network analysis, furthermore, represents an effective visual approach to teaching and learning in Earth and planetary sciences.

67th Annual Meeting
Southeastern Section of the Geological Society of America

Geology at All Scales



hosted by...

The Department of Earth and Planetary Sciences
The University of Tennessee
Knoxville, Tennessee
12–13 April 2018

and sponsored by...

Gold level Sponsorship

UT Earth and Planetary Sciences Advisory Board

Silver level Sponsorship

Wood.
Jewelry TV
Subhorizon Geologic Resources

Bronze level Sponsorship

University of Tennessee, College of Arts & Sciences
University of Tennessee, Office of Research and Engagement
C Howard Capito, Shenandoah Northern Company

wood.



THE UNIVERSITY OF
TENNESSEE
KNOXVILLE
OFFICE OF RESEARCH &
ENGAGEMENT



THE UNIVERSITY OF
TENNESSEE
KNOXVILLE
COLLEGE OF ARTS & SCIENCES



Shenandoah Northern Company

General Information



Welcome

The local committee and section officers welcome you to the 2018 meeting of the Southeastern Section of the Geological Society of America. The Department of Earth and Planetary Sciences at the University of Tennessee is hosting this year's meeting, which is being held at the Knoxville Convention Center, downtown Knoxville, Tennessee. The convention center is located in World's Fair Park, home of the 1982 World's Fair and its centerpiece—the Sun Sphere—which remains one of Knoxville's most recognized landmarks. While at the Knoxville Convention Center be sure to check out their extensive art collection and the fine slabs of Tennessee Marble that adorn many of the walls!

Location

Knoxville, Tennessee is situated in the Appalachian Valley and Ridge province of Eastern Tennessee, near the Great Smokey Mountains National Park. Numerous classic stratigraphic, paleontologic, petrologic, structural, and geomorphic localities are located within an hour of Knoxville, and will be visited by pre- and post-meeting field trips. The Knoxville area has a rich and diverse geological community, which includes members at the University of Tennessee, Oak Ridge National Laboratory, the Tennessee Division of Geology and Tennessee Department of Transportation, the Tennessee Valley Authority (TVA), regional community colleges, and environmental engineering companies and small independent oil companies.

Named after Revolutionary War general and the US Secretary of War, Henry Knox, Knoxville was the first capital of Tennessee and remains the third largest city in the state, with a metropolitan population of 870,000. The Department of Energy facilities at Oak Ridge, the TVA, and The University of Tennessee are the largest employers in the region. Surrounded by the natural beauty of the Appalachian Mountains, and situated on the banks of the Tennessee River, Knoxville has a lot to offer visitors. The downtown area is known for live music, eclectic shops, and highly acclaimed cuisine. Visitors can learn about the region's geologic setting and industries, or delve into its rich cultural history, from the first Native Americans to inhabit the Valley and Ridge, through the colonial and civil war periods, at one of the several museums and historic homes within walking distance of the Knoxville Convention Center. Numerous other attractions are within easy driving distance, including the Knoxville Zoo, Gatlinburg and Pigeon Forge, the Great Smoky Mountains National Park, and numerous wilderness areas.

Climate

Springtime weather in Knoxville is variable. Temperatures in April typically range from the low 50s at night to the mid 70s during the day, and precipitation is likely. Please be prepared for all possibilities.

Transportation and Directions

Knoxville is positioned at the intersection of Interstates 40 and 75, making it a convenient drive for most attendees. The city is also served by McGhee Tyson Airport (TYS), with daily flights from most cities in the Southeast. Taxi fare from the airport to downtown is approximately \$30. Car rental is also available through most major providers, and is located across from the airport baggage claim.

Most of the downtown area, as well as University region are within walking distance of both the Knoxville Convention Center and the Knoxville Hilton. Local transportation is also furnished by the Knoxville Trolley, which is free for all passengers. Three trolley routes serve downtown Knoxville and the UT area. A map and guide to the downtown Knoxville area, showing Trolley and bus routes and bicycle transit stations, is available at <http://www.katbus.com/178/Free-Trolley>.

Driving from the west (Nashville, TN):

Follow I-40 E into Knoxville until you reach Exit 388 (Henley Street). Use the left lane to merge onto Henley Street, then use the left 2 lanes to turn left onto West Church Avenue. The Hilton Knoxville, at 501 W. Church Avenue, will be on the left.

Driving from the north (Lexington, KY):

Take I-75 S into Tennessee and continue onto I-275 S into the city of Knoxville. Merge onto US 441 S (Henley Street) in Knoxville, then use the left 2 lanes to turn left onto West Church Avenue. The Hilton Knoxville, at 501 West Church Avenue, will be on the left.

Driving from the south (Atlanta, GA):

Take I-75 N into Tennessee and continue onto I-40 E into Knoxville. Take Exit 388 (Henley Street) and use the left lane to merge onto Henley Street, then use the left 2 lanes to turn left onto West Church Avenue. The Hilton Knoxville, at 501 West Church Avenue, will be on the left.

Driving from the east (Roanoke, VA):

Follow I-81 S into Tennessee, and merge onto I-40 W toward Knoxville. Use the right 2 lanes to take Exit 389 (Hall of Fame Drive) toward US 441 N (Broadway Avenue). Keep left and continue to Exit 388A, following signs for U.S. 441 S (James White Parkway) and Downtown/University of Tennessee. Use the right lane to take the Cumberland

Avenue exit toward US-441 S (Downtown). Turn right onto State Street (signs for US-441 S) and turn left at the 1st cross street onto West Church Avenue. The Hilton Knoxville, at 501 West Church Avenue, will be on the right.

Driving from the east (Asheville, NC):

Follow I-40 W into Knoxville. Use the right 2 lanes to take Exit 389 (Hall of Fame Drive) toward U.S. 441 N (Broadway Avenue). Keep left and continue to Exit 388A, following signs for U.S. 441 S (James White Parkway) and Downtown/University of Tennessee. Use the right lane to take the Cumberland Avenue exit toward US-441 S (Downtown). Turn right onto State Street (signs for US-441 S) and turn left at the 1st cross street onto West Church Avenue. The Hilton Knoxville, at 501 West Church Avenue, will be on the right.

Accommodations

Blocks of rooms have been reserved at the Hilton Knoxville. The meeting will take place at the Knoxville Convention Center facilities which is short walk from the hotel. To make your reservations, please call the Hilton Knoxville at +1-800-774-1500. In addition to the Convention Center, the Hilton Knoxville is within convenient walking distance of Market Square and a variety of local restaurants. Parking is available in lots adjacent to the hotel for US \$10 to \$15 per day.

Restaurants within Easy Walking Distance

The Knoxville Convention Center and the Hilton Knoxville are on the western edge of downtown Knoxville, a one square mile area that boasts over 75 restaurants. Dining options are highly varied, including award-winning fine dining, local diners, ethnic and southern cuisine, and dives. A visit to Market Square is a must, where many of the best eateries are found within a few-block pedestrian mall. Additional information can be found at <https://www.visitknoxville.com/>.

Conference Registration

Registration is required to participate in all events associated with the meeting, including: technical sessions, symposia, workshops, field trips, exhibits, special meetings, and planned social events. Registration badges must be worn for access to all activities, and guest registration is required for attendance at the welcoming reception, scheduled lunches, breakfasts, dinners, and field trips. A current student ID is required to obtain student registration rates. K–12 professionals are invited to attend at greatly reduced rates.

Registration Schedule

On-site registration and badge pick-up is located in the Clinch Concourse of the Knoxville Convention Center and is open at the following times:

Wednesday, 11 April	4–8 p.m.
Thursday, 12 April	7 a.m.–5 p.m.
Friday, 13 April	7 a.m.–noon

On-Site Registration Fees	Full meeting	One day
Professional Member.....	\$250	\$155
Professional Nonmember.....	\$275	\$175
Early Career Professional Member	\$175	\$110
Student Member.....	\$100	\$75
Student Nonmember	\$130	\$100
K-12 Teacher.....	\$50	\$45
Guest.....	\$50	\$45
Short Course/Field Trip only	\$45	

Cancellations, Changes, and Refunds

Requests for additions, changes, and cancellations must have been received at GSA Headquarters, in writing, by 12 March 2018. No refunds will be made on cancellation notices received after this date. Refunds will be mailed from GSA after the meeting; refunds for fees paid by credit card will be credited to the card identified on the registration form. GSA cannot provide refunds for on-site registration, or event ticket sales.

Meeting App and Abstracts

A web-based app is available for this meeting. This app allows you to view and search the meeting program and create your own schedule of events to attend. You can also view the full abstracts text from this app. Please download the app at <https://gsa.confex.com/gsa/2018SE/meetingapp.cgi>.

Continuing Education Credits

The Southeastern Section Meeting offers an excellent opportunity to earn CEUs toward your continuing education requirements for your employer, K–12 school, or professional registration. Please check the meeting website after the meeting to download your CEU certificate.

Accessibility

GSA is committed to ensuring full participation for all conference attendees. Accessible rooms at the hotel are available and can be reserved. At the convention center, there are Family Needs facilities available underneath the escalator near the 300 rooms. Please let us know if further accommodation is needed.

Welcoming Reception

The welcoming reception is Wednesday, 6–8 p.m., 11 April, on the Plaza Terrace of the Knoxville Convention Center. Exhibit booths are open during the welcoming reception. Light hors d'oeuvres and one complimentary drink are included with each meeting registration. A cash bar is also available.

Technical Program

Technical sessions begin at 8 a.m., Thursday, 12 April, and conclude at 5:30 p.m., Friday, 13 April. All technical sessions (oral and poster presentations) are located in the Knoxville Convention Center. Coffee breaks are offered at 10 a.m. and 3:10 p.m.

Information for Session Chairs

Session chairs are invited to attend the “Session Chairs Orientation and Breakfast” from 7 to 7:50 a.m., in the Rotunda Room of the Knoxville Convention Center on Thursday, 12 April and Friday, 13 April. Session chairs are requested to adhere to the schedule and to encourage the strict time limits provided to speakers.

Information for Presenters

Unless otherwise noted, each speaker is allotted a time of 20 minutes for oral presentations, which includes 15 minutes for the presentation, and 5 minutes for questions. Authors of posters are asked to have their posters in place by 8 a.m., for morning sessions, and by 1 p.m., for afternoon sessions. Authors of posters should be present at their posters for 2 hours during their allotted sessions: 9–11 a.m., for morning sessions, and 2–4 p.m., for afternoon sessions. Morning session posters must be removed by noon, and afternoon session posters must be removed by 5 p.m. Poster presenters have one 4'x8' horizontal (landscape) display board. Electrical hookups are not available for poster presentations.

Speaker Ready Room

The Business Center of the Knoxville Convention Center, adjacent to Room 301E, serves as the speaker ready room. All oral session presenters must visit the Speaker Ready Room before their scheduled presentation to ensure their PowerPoint or PDF file is properly configured and operating and load it on one of the laptops. Failure to do so may result in presentations being omitted from sessions. Speaker Ready Room hours are as follows:

Wednesday, 11 April	4–7 p.m.
Thursday, 12 April	7 a.m.–5 p.m.
Friday, 13 April	7 a.m.–2 p.m.

Morning presentations must be uploaded by the end of the day prior to the presentation. All afternoon presentations must be uploaded by noon on the day of the presentation. Each speaker must bring his or her PowerPoint or PDF presentation on a USB compatible flash drive (a.k.a. thumb drive or memory stick) or a CD-ROM disk to the Speaker Ready Room for checking and uploading to their session's folder according to the deadlines below:

For Presentation	Upload Not Later Than
Thursday, 12 April, AM	7 p.m., Wednesday, 11 April
Thursday, 12 April, PM	noon, Thursday, 12 April
Friday, 13 April, AM	5 p.m., Thursday, 12 April
Friday, 13 April, PM	noon, Friday, 13 April

Cameras Sound Equipment and Smoking Policy

GSA meeting policy prohibits the use of cameras or sound recording equipment in technical sessions. The Knoxville Convention Center is a smoke-free facility.

Exhibits

Exhibits are located in the Clinch Concourse of the Knoxville Convention Center and are open the following times:

Wednesday, 11 April	10 a.m.–6 p.m., Set Up
Wednesday, 11 April	6–8 p.m., Welcoming Reception
Thursday, 12 April	8 a.m.–5 p.m.
Friday, 13 April	8 a.m.–5 p.m.
Friday, 13 April	5 p.m.–8 p.m., Tear Down

Keynote Address

Robert M. Hazen, Senior Staff Scientist at the Carnegie Institute Geophysical Laboratory, and Executive Director of the Deep Carbon Observatory, presents **The Co-Evolution of the Geosphere and Biosphere: A Big-Data Approach** on Thursday, 12 April, 6–7 p.m., Knoxville Convention Center room 301ABC. All attendees are welcome.

Symposia

S1. Longstanding Problems and New Ideas About the Structure and Tectonic Evolution of the Southern Appalachians and Other Mountain Belts: In Honor of the Career of Robert D. Hatcher Jr. Arthur J. Merschat; J. Ryan Thigpen; Elizabeth McClellan; Mark W. Carter.

Theme Sessions

T1. Seismic Hazards in the Eastern United States. Christine Powell; Chris Cramer; Martin C. Chapman.

T2. Recent Advances in Our Understanding of The Crust and Upper Mantle in the Southeastern United States. Robert B. Hawman; James H. Knapp.

T3. Geomorphic Anomalies and Underlying Geologic Controls Identified from Surficial and Bedrock Mapping, Southeastern United States. *GSA Quaternary Geology and Geomorphology Division.* Kathleen M. Farrell; Christopher S. Swezey.

T5. Environmental Problems and Solutions Associated with Appalachian Shale Plays and Coal Mining. *GSA Sedimentary Geology Division.* Anna Szyrkiewicz; Nathaniel Warner.

T7. Linkages among Subterranean Ecosystems and Geological Events in the Eastern United States. Nicholas S. Gladstone; Matthew L. Niemiller; Evan T. Carter; Michael L. McKinney; Sarah W. Keenan.

T8. Geomicrobiology of Microbes and Minerals: Influence across Ecosystem Scales. Jill Mikucki; Caleb Schuler.

T10. Biogeochemical Cycling and Microbial Dynamics in Response to Pulse Events. GSA *Sedimentary Geology Division*. Sean M. Schaeffer; Jennifer M. DeBruyn.

T11. Morphology and Evolutionary Trends. *Paleontological Society*. Bradley Deline; Maggie R. Limbeck.

T12. Taphonomy: The Good, the Bad and the Ugly. *Paleontological Society*. Rebecca L. Freeman; Linda J. McCall; Simon A.F. Darroch.

T13. Neontological Approaches to Paleontological Questions. Stephanie K. Drumheller; Matthew A. Tibbits.

T14. Geologic Mapping from the Appalachians to the Planets (Posters). GSA *Planetary Geology Division*; GSA *Quaternary Geology and Geomorphology Division*; GSA *Sedimentary Geology Division*. Robert E. Jacobsen; Keenan B. Golder.

T15. Planetary Surface Processes. GSA *Planetary Geology Division*; GSA *Quaternary Geology and Geomorphology Division*; GSA *Sedimentary Geology Division*. Devon M. Burr; Bradley J. Thomson.

T17. Teaching Geosciences at the College Level. Renee Mazurek.

T18. Undergraduate Research (Posters). *Council on Undergraduate Research Geosciences Division*; GSA *Quaternary Geology and Geomorphology Division*. Preston Lee Phillips; Jeffrey Ryan.

T19. Tectonics, Geochronology, and Thermochronology. William A. Thomas; William T. Jackson Jr.

Discipline Sessions

D1. Archeological Geology (Posters)

D2. Karst (Posters)

D3. Environmental Geology

D4. Hydrogeology (Posters)

D5. Geoscience Education (Posters)

D6. Planetary Geology (Posters)

D7. Stratigraphy, Sedimentation, and Diagenesis

D8. Igneous Petrology, Metamorphic Petrology, and Geochemistry (Posters)

D9. Geomorphology (Posters)

D10. Economic Geology (Posters)

D11. Engineering Geology (Posters)

D12. Paleontological Potpourri

D13. Petrology, Structure, and Tectonics

Field Trips

All trips will depart from the Knoxville Hilton Lobby, unless otherwise noted below.

Pre-Meeting

FT1. Quaternary Faulting along the Dandridge-Vonore Fault Zone in the Eastern Tennessee Seismic Zone. 11 April, 7:30 a.m.–4:30 p.m. US\$105. Robert D. Hatcher, Jr., University of Tennessee–Knoxville; Randel Tom Cox, University of Memphis.

Description: Field trip participants will visit three accessible sites that involve bedrock faulted against Quaternary river sediments, including a thrust fault on the Little River near

Alcoa, Tennessee, a series of thrust faults exposed in a drainage ditch that thrust Conasauga Shale against Quaternary colluvium in the footwall, and a normal fault at Tellico Lake near Vonore, Tennessee, with Quaternary sediments faulted against Consasuga Shale, lake level permitting.

FT2. The Blue Ridge Basement Complex of the Eastern Great Smoky Mountains: New Insight into Old Rocks from New U-Pb Geochronology. 11 April. US\$60. Trip departs from the parking lot of the Maggie Valley Inn & Conference Center, North Carolina, at 8 a.m., returning mid-day. David Moecher, University of Kentucky.

Description: This is a one-day trip that focuses on the Blue Ridge basement rocks of the Dellwood and northern Hazelwood quadrangles. The trip will involve two to three short (100 m) hikes in densely wooded but relatively flat terrane.

Post-Meeting

FT3. Blue Ridge–Inner Piedmont Geotraverse from the Great Smoky Thrust to the Inner Piedmont: Upper Crust to Upper Lower Crust, Terranes, Large Faults, and Sutures. 5 p.m., 13 April–5:30 p.m., 15 April. US\$290. Arthur J. Merschat, USGS; J. Ryan Thigpen, University of Kentucky; Elizabeth McClellan, Radford University; Mark W. Carter, USGS; Robert D. Hatcher, Jr., University of Tennessee–Knoxville.

Description: This 3-day field trip transects the southern Appalachian orogen. Unmetamorphosed sedimentary rocks of the frontal Blue Ridge will be examined at Parkville, Tennessee. The distal Laurentian margin will be crossed onto amphibolite to granulite facies rocks of the central Blue Ridge and Tugaloo terranes; the field trip will end in Inner Piedmont migmatites near Westminster, South Carolina.

FT4. Steaming through the Ordovician. 14 April, 6:45 a.m.–2 p.m. US\$65. C. Howard Capito, Knoxville, Tennessee; Stephanie Drumheller-Horton, University of Tennessee–Knoxville.

Description: Field trip participants will ride the Three Rivers Rambler excursion train behind an 1890 “Consolidation” steam locomotive, operated by the Knoxville & Holston River Railroad Company. The train will follow the Tennessee River and pass through a sequence of Lower and Middle Ordovician carbonates, sandstones and shale, of the Knox and Chickamauga Groups. Related rocks, facies progression through the sedimentary sequence and Alleghanian-era structure in the area between Knoxville and the Forks of the River will be presented. Passengers will also learn about the history of the Tennessee Marble industry, and why Tennessee Marble is such an excellent monument and building stone. The economic correlation between the late 19th century establishment of a network of railroads serving Knox County and the growth of the area Tennessee Marble industry will be presented. There will be opportunities to disembark the train to examine selected limestone outcrops, and the train will stop on the High Bridge at the Forks of the River to view the confluence of Holston and French Broad Rivers and the Great Smoky Mountains.

FT5. Lessons from Limestone: How to Teach All Sciences with Limestone. *Cosponsored by the Southeastern Section of the National Association of Teachers.* 14 April, 7:30 a.m.–5 p.m. US\$35. Michael A. Gibson, University of Tennessee–Martin; Don Byerly, University of Tennessee–Knoxville.

Description: Limestone, a nearly ubiquitous sedimentary rock, provides many lessons about Earth's Systems (geosphere, hydrosphere, atmosphere, and biosphere), including the geochemical, hydrologic, and rock cycles. Limestone formations are important archives of biotic and abiotic Earth history because limestone chemistry is part of the everyday environment. Limestone deposits around the world provide data for reconstructing global climate change, and thus, provide important “documents” for recreating Earth's changing paleoecology throughout time, including human history. Limestone is Earth's antidote to global warming. As limestone is volumetrically one of our most valuable natural resources on Earth, having a variety of uses, limestones are critical economic resources. Limestone can also be involved with natural and human-induced environmental hazards. Because limestone is a common, readily available commodity to all teachers and students, limestone is an ideal material for budget-strapped STEM education and for teaching cross-disciplinary STEM subjects of biology, chemistry, and physics, along with history and culture through its uses in society. This field trip and accompanying materials will address Next Generation Science Standards, including: explanation of where, how, and why limestone forms; development of paleoecology and evolution concepts using fossils found in limestone; reconstruction of ancient geography (including plate tectonics) using limestone; application of limestone to our society, as a building stone, for medical uses, and as a potential hazard associated with karst (caves and sinkholes). Five cross-disciplinary content standards will be addressed using limestone: (1) chemical reactions, (2) biological evolution, (3) geochemical cycles, (4) economic and environmental societal impacts, and (5) historical importance to fine arts and society.

FT6. Revisiting the Flynn Creek Impact Structure, Jackson County Tennessee. 14 April, 7:30 a.m.–6:30 p.m. US\$130. Steven J. Jaret, Stony Brook University; David T. King, Jr., Auburn University.

Description: The Flynn Creek Impact Structure was originally recognized in 1968 by David Roddy as one of the original six confirmed impact structures on Earth. The Flynn Creek Impact Structure is also the first recognized marine target impact structure. Exposure at Flynn Creek varies, as there is no obvious rim and the geological map of the area does not look like a crater. But, there is an impact breccia unit dominated by two classes of breccia, the lower, chaotic, slump breccia and the upper graded resurge breccia. The post-impact unit is Chattanooga Shale, of which one facies is present only in the crater itself. Participants will visit historical outcrops identified by Roddy, including both the breccia units and the central uplift. New results from ongoing rein-

vestigations of a drill core from Flynn Creek, as well as insight from other marine-target impact structures in the southeast, will add to lively discussions.

FT7. Nutrient Hotspots through Time: Taphonomy in Modern and Fossil Ecosystems. 14 April, 8 a.m.–5:30 p.m. US\$130. Sarah W. Keenan, University of Tennessee–Knoxville; Christopher Widga, East Tennessee State University; Jennifer M. DeBruyn, University of Tennessee–Knoxville; Sean M. Schaeffer, University of Tennessee–Knoxville.

Description: Hotspots represent ephemeral and pulsed introductions of nutrients into an environmental system. The breakdown and decomposition of organisms immediately after death is the first step in taphonomy, and sets the stage for potential preservation. In the geologic record, body or trace fossils and chemical records of past life (i.e., isotopic anomalies, redox zonation in sediment) provide evidence for preserved nutrient hotspots. Field trip participants will gain a deeper understanding of taphonomy, vertebrate decomposition in the modern, and potential preservation in the geologic past, by visiting two important hotspot localities in East Tennessee—the Miocene-age Gray Fossil Site and the Anthropological Research Facility (also known as “the Body Farm”), a human decomposition experimental site.

FT8. Hydrogeology and Structure of Tuckaleechee Cove and Vicinity. 14 April, 8:30 a.m.–6 p.m. US\$130. Ben Miller, USGS–Nashville; Terri Brown, University of Tennessee–Knoxville.

Description: Field trip participants will visit karst features in the Tuckaleechee Cove window in the Great Smoky thrust sheet, and examine exposures of the Great Smoky fault and deformed Ordovician carbonate strata. Stops will include several springs in the Tuckaleechee Cove that are currently instrumented for a USGS hydrogeologic investigation, and the entrance to the deepest known cave in Tennessee, within the boundaries of the Great Smoky Mountains National Park. Topics of discussion will focus on tracer testing, decontamination, and cave access protocols in the Park, as well as landowner relations outside the Park, monitoring instrumentation, and implications of the spring study. The trip includes a tour of the beautiful Tuckaleechee Caverns to highlight geologic and hydrologic features within the cove.

FT9. Mesoscale Structures, Macroscale Folds, and Inferred Cratonic Basement Structures, Nashville Dome, Central Tennessee. 7 a.m., 14 April–4 p.m., 15 April. US\$195. Mark Abolins, Middle Tennessee State University.

Description: Recent geologic investigations suggest that post-Ordovician mesoscale structures and macroscale folds in some parts of the Nashville dome, central Tennessee, formed because of slip on sub-surface cratonic basement faults. Recently published geophysical research also suggests that a north-northeast-trending Precambrian or Cambrian rift lies beneath the dome. Did reactivation of rift structures shape Ordovician stratigraphy and post-Ordovician structures? Participants will examine evidence exposed at the surface.

Opportunities for Students

GSA GeoCareers Program Workshop Part 1: Career Planning and Informational Interviewing. Thursday, 12 April, 9–10 a.m., Rotunda Room, Knoxville Convention Center. Jennifer Nocerino, jnocerino@geosociety.org. Your job hunting process should begin with career planning, not when you apply to jobs. This part of the workshop will help you begin this process and will introduce you to informational interviewing. This section is highly recommended to freshman, sophomores and juniors. The earlier you start your career planning the better.

GSA GeoCareers Program Workshop Part 2: Geoscience Career Exploration. Thursday, 12 April, 10–11 a.m., Rotunda Room, Knoxville Convention Center. Jennifer Nocerino, jnocerino@geosociety.org. 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 when possible, professionals in the field, will address these issues.

GSA GeoCareers Program Workshop Part 3: Cover Letters, Resumes and CV's. Friday, 13 April, 9–10 a.m., Rotunda Room, Knoxville Convention Center. Jennifer Nocerino, jnocerino@geosociety.org. 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. Shlemon Mentors Program in Applied Geoscience. *Cosponsored by GSA Foundation.* Thursday, 12 April, noon–1:30 p.m., Rotunda Room, Knoxville Convention Center. Jennifer Nocerino, jnocerino@geosociety.org. The Shlemon Mentors Program is designed to extend the mentoring reach of individual professionals from applied geology to undergraduate and graduate students attending GSA section meetings. Over free lunches, mentors and students discuss real-life issues including professional opportunities and challenges that await students after graduation. Space is limited; first come, first served.

The John Mann Mentors in Applied Hydrogeology Program. *Cosponsored by GSA Foundation.* Friday, 13 April, noon–1:30 p.m., Rotunda Room, Knoxville Convention Center. Jennifer Nocerino, jnocerino@geosociety.org. The Mann Mentors Program presents mentoring opportunities for undergraduate and graduate students as well as recent graduates with a declared interest in applied hydrogeology as a career to interact and network with practicing hydrogeology professionals. This relaxed, small scale event features a free lunch for students and mentors. Space is limited; first come, first served.

Meetings and Special Events

Wednesday, 11 April

Welcoming Reception. 6–8 p.m., Plaza Terrace of the Knoxville Convention Center.

Thursday, 12 April 12

Session Chairs Orientation and Breakfast. 7–7:50 a.m., Rotunda Room, Knoxville Convention Center.

Southeastern Section Management Board Business Meeting and Breakfast. 7–8 a.m., Board Room, Knoxville Convention Center.

Shlemon Mentors Student Luncheon. Noon–1:30 p.m., Rotunda Room, Knoxville Convention Center.

Keynote Address. 6–7 p.m. Robert M. Hazen. *The Co-Evolution of the Geosphere and Biosphere: A Big-Data Approach*, Knoxville Convention Center room 301ABC.

UT Earth & Planetary Sciences Alumni and Friends Reception. 7:30–9 p.m., 6th Floor Lobby, Strong Hall.

Friday, 13 April

Session Chairs Orientation and Breakfast. 7–7:50 a.m., Rotunda Room, Knoxville Convention Center.

Campus Representatives Breakfast. 7–8 a.m., Board Room, Knoxville Convention Center.

Mann Mentors Student Luncheon. Noon–1:30 p.m., Rotunda Room, Knoxville Convention Center.

Local Attractions and Guest Opportunities

Although there is no formally arranged guest program, the greater Knoxville area has an abundance of activities and excursions that will entertain the whole family. A select list of these experiences is provided below for you and your guests to choose from. Full details of the tours and other activities can be obtained at the Visit Knoxville webpage <https://www.visitknoxville.com/> or the Knoxville Visitors Center at 301 South Gay St.

Driving and walking tours

Civil War Driving Tour: Divided Loyalties

The City of Knoxville was torn apart by the bitter divisions of the Civil War. The Divided Loyalties Civil War Tour of Knoxville is a self-guided driving tour, offering a unique window into the turbulent Civil War years and reconstruction where participants will see the historic sites associated with Knoxville's dramatic Civil War history. This tour has 15 stops including the Museum of East Tennessee History, Historic Homes, Market Square, Historic Cemeteries, Forts and Museums.

Cradle of Country Music Walking Tour

The city of Knoxville has played a pivotal role as one of America's most musical cities. It had a strong influence in the development of jazz, blues and rock and roll, but most famously country music. This downtown tour explains Knoxville's ties to artists such as Roy Acuff, Howard Armstrong, The Everly Brothers, Dolly Parton, Elvis Presley, Hank Williams, and many others.

Top Secret Trail

This self guided tour of secrets will immerse you in the history of early Knoxville by touring Blount Mansion,

James White's Fort and Bleak House, and General Longstreet's 1863 Battle of Knoxville headquarters. It continues from Knoxville to the "Secret City" of Oak Ridge, and the American Museum of Science and Energy, highlighting the important role the city played in the development of nuclear energy.

Museums and Other Sites of Interest

Knoxville Museum of Art (1050 World's Fair Park Drive)

The Knoxville Museum of Art, conveniently located near World's Fair Park, presents a lively and engaging schedule of exhibitions that celebrate the rich visual culture of East Tennessee and explores the region's connections to the wider currents of international art. Its permanent exhibition Higher Ground is devoted to East Tennessee's artistic achievements, and includes objects from the KMA collection, supplemented by important works borrowed from public and private collections. Attractions include Richard Jolley's Cycle of Life, the world's largest figural glass installation. Admission is free.

McClung Museum of Natural History & Culture (1327 Circle Park Drive)

Located on the campus of The University of Tennessee, the McClung Museum of Natural History & Culture showcases the geologic, historical, and artistic past of Tennessee, and highlights cultures from around the globe. Permanent exhibits include: The Archaeology and Native Peoples of Tennessee, Human Origins - Searching for our Fossil Ancestors, the Civil War in Knoxville, the Battle of Fort Sanders, and many others. A small gallery is dedicated to the geological history of Tennessee and includes dioramas of ancient environments from the Cambrian to Recent. Parking and admission are free.

Women's Basketball Hall of Fame (700 Hall of Fame Drive)

The Women's Basketball Hall of Fame is the only facility of its kind, dedicated to preserving the history of women's basketball at all levels. Exhibits include the World's largest basketball, a Ring of Honor with over 100 jerseys representing the top high school and college players from each season, an exhibit on Senda Berenson, considered the 'Mother of Women's Basketball,' and many others. Admission - Adults: \$7.95, Seniors: \$5.95, Children (6 to 15): \$5.95, Children (5 and under): Free

Zoo Knoxville (3500 Knoxville Zoo Drive)

Zoo Knoxville is committed to being part of the solution to save species from extinction, both locally and globally and

is noted for its highly successful red panda breeding program. The recently opened 'Asian Trek' brings visitors face to face with one of the very few Malayan tigers in the world. Daily live animal shows include Zoo Knoxville's famous spokesperson, Einstein, who has appeared on television programs from Animal Planet to The Tonight Show with Jay Leno. Admission: Adults \$49; Children (7 to 11) \$39.

Hiking, Biking, and Climbing

The Knoxville area offers a plethora of outdoor activities, including hundreds of miles of hiking and biking trails that are available within a 30-minute drive from downtown. For more information see the outdoor Knoxville webpage at <http://www.outdoorknoxville.com/>.

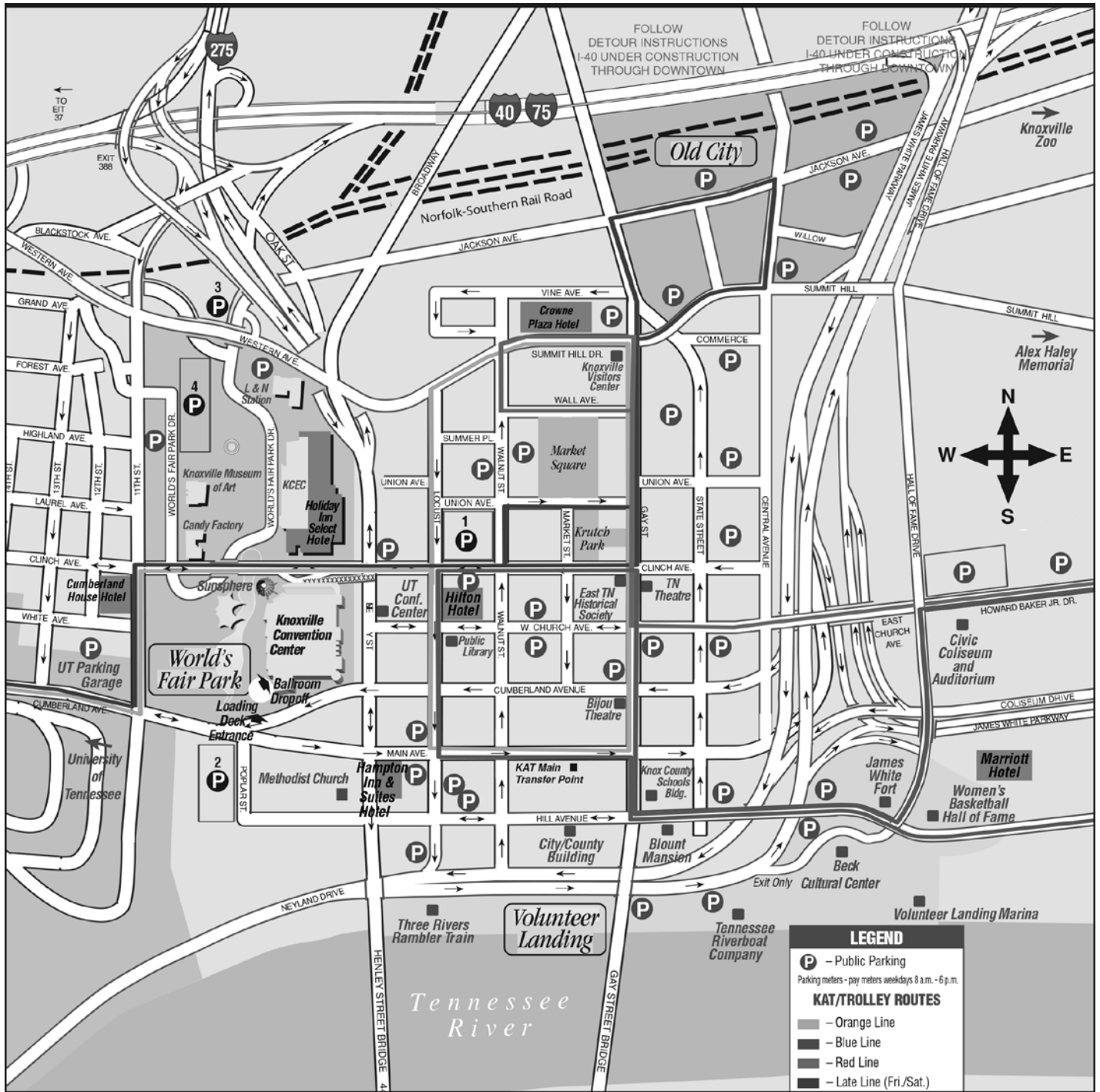
Local Beer

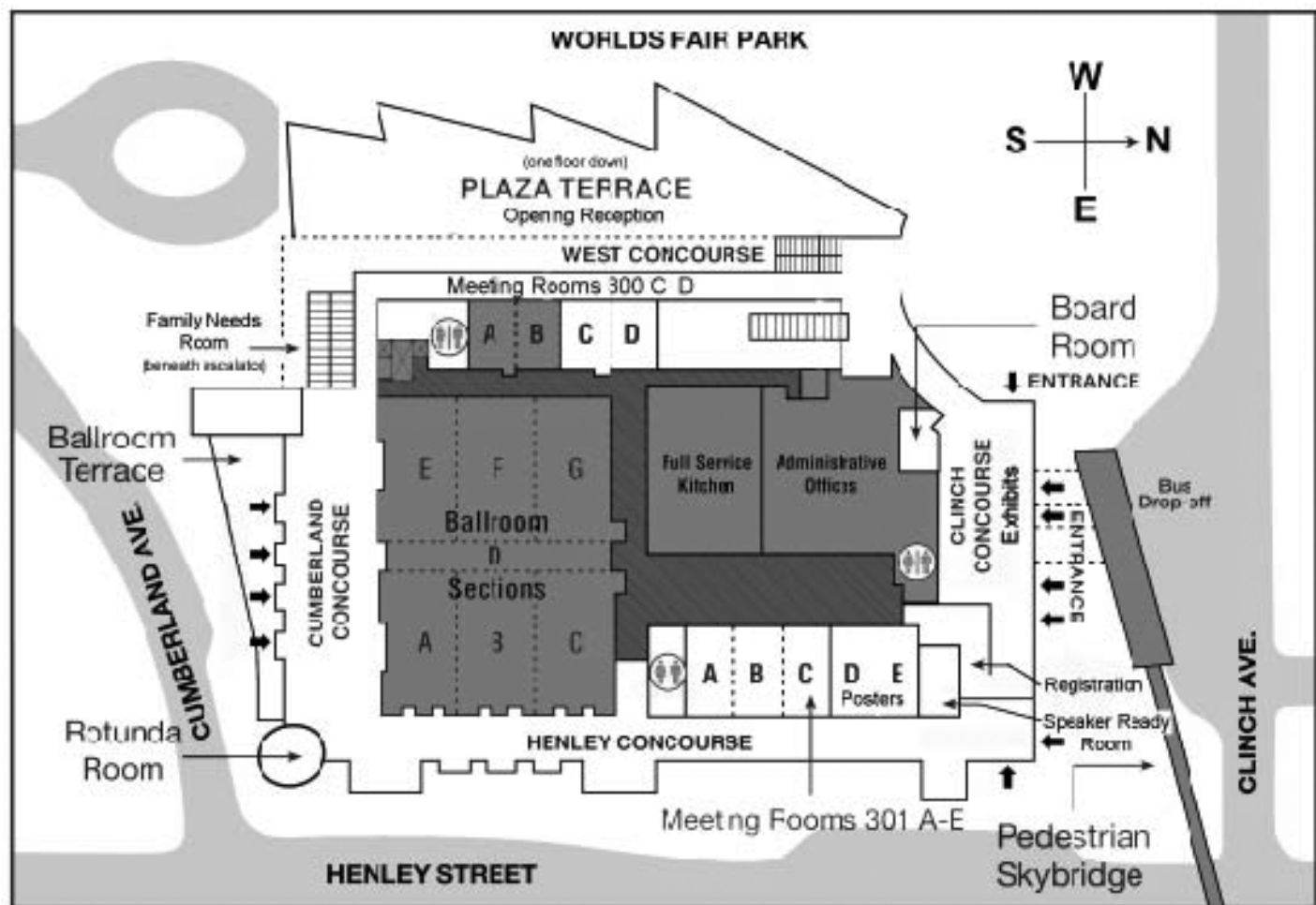
Knoxville has a rich and ever-expanding craft beer scene. With ten breweries currently operating and several more projected to open in the next year, Knoxville's burgeoning craft beer scene has started to mesh with the unique character of the City. For more information see <https://www.visitknoxville.com/knoxville-ale-trail/>.

Family Fun Farther Afield

Pigeon Forge. Set against the misty blue backdrop of the Great Smoky Mountains National Park, Pigeon Forge, Tennessee is a gateway to 500 thousand acres of Appalachian wilderness. If hiking over 800 miles of mountain trails and camping in dense ancient forests isn't your thing, head over to Dollywood for a different sort of fun. Founded by country queen, Dolly Parton, Dollywood combines rollercoasters, waterslides, and live bluegrass and gospel concerts, with a down home country fair. A full list of activities and attractions can be found at <http://www.mypigeonforge.com/>.

Gatlinburg. The official entry to the Great Smoky Mountains, Gatlinburg offers a variety of lodging, restaurants, and shopping. Attractions cater those who love the outdoors (Gatlinburg Aerial Tramway, Anakeesta aerial adventure park, Smoky Mountain Stables), to those who seek entertainment (Ripley's Aquarium of the Smokies, Ripley's Marvelous Mirror Maze, Hillbilly Golf, and Comedy Theatre), to those looking for a taste of Tennessee (Tennessee Homemade Wines, Doc Collier's Moonshine Distillery, Smokey Mountain Brewery). A full list of activities can be found at <http://www.gatlinburg.com/>.





Schedule of Events

EVENT	TIME	LOCATION
WEDNESDAY, 11 APRIL		
FT1. Quaternary Faulting along the Dandridge-Vonore Fault Zone in the Eastern Tennessee Seismic Zone (Field Trip)	7:30 a.m.–4:30 p.m.	Lobby
FT2. The Blue Ridge Basement Complex of the Eastern Great Smoky Mountains: New Insight into Old Rocks from New U-Pb Geochronology (Field Trip)	8 a.m.–4 p.m.	Maggie Valley Inn & Conference Center Parking Lot
Exhibitor Set Up	10 a.m.–6 p.m.	Clinch Concourse
Speaker Ready Room	4–7 p.m.	Business Center, adjacent to Room 301E
Registration	4–8 p.m.	Clinch Concourse
Welcoming Reception	6–8 p.m.	Plaza Terrace
THURSDAY, 12 APRIL		
Session Chairs Orientation and Breakfast	7–7:50 a.m.	Rotunda Room
Southeastern Section Management Board Business Meeting and Breakfast	7–8 a.m.	Board Room
Registration	7 a.m.–5 p.m.	Clinch Concourse
Speaker Ready Room	7 a.m.–5 p.m.	Business Center, adjacent to Room 301E
Exhibits Open	8 a.m.–5 p.m.	Clinch Concourse
Morning Oral Technical Sessions		
D7. Stratigraphy, Sedimentation, and Diagenesis	8 a.m.–noon	Room 301 A
P1. Longstanding Problems and New Ideas About the Structure and Tectonic Evolution of the Southern Appalachians and Other Mountain Belts I: In Honor of the Career of Robert D. Hatcher Jr.	8 a.m.–noon	Room 301 C
T5. Environmental Problems and Solutions Associated with Appalachian Shale Plays and Coal Mining	8 a.m.–noon	Room 300 D
T13. Neontological Approaches to Paleontological Questions	8 a.m.–noon	Room 301 B
T15. Planetary Surface Processes	8 a.m.–noon	Room 300 C
Morning Poster Sessions: Authors will be present from 9 to 11 AM		
D1. Archeological Geology (Posters)	8 a.m.–noon	Room 301 DE/Henley Concourse
D2. Karst (Posters)	8 a.m.–noon	Room 301 DE/Henley Concourse
D3. Environmental Geology (Posters)	8 a.m.–noon	Room 301 DE/Henley Concourse
D4. Hydrogeology (Posters)	8 a.m.–noon	Room 301 DE/Henley Concourse
D5. Geoscience Education (Posters)	8 a.m.–noon	Room 301 DE/Henley Concourse
T18. Undergraduate Research I (Posters)	8 a.m.–noon	Room 301 DE/Henley Concourse

EVENT	TIME	LOCATION
GSA GeoCareers Program Workshop Part 1: Career Planning and Informational Interviewing	9–10 a.m.	Rotunda Room
GSA GeoCareers Program Workshop Part 2: Geoscience Career Exploration	10–11 a.m.	Rotunda Room
Roy J. Shlemon Mentors Program in Applied Geoscience	noon–1:30 p.m.	Rotunda Room

Afternoon Oral Technical Sessions

D3. Environmental Geology	1:30–5:30 p.m.	Room 300 D
P1. Longstanding Problems and New Ideas About the Structure and Tectonic Evolution of the Southern Appalachians and Other Mountain Belts II: In Honor of the Career of Robert D. Hatcher Jr.	1:30–5:30 p.m.	Room 301 C
T7. Linkages among Subterranean Ecosystems and Geological Events in the Eastern United States	1:30–5:30 p.m.	Room 301 A
T12. Taphonomy: The Good, the Bad and the Ugly	1:30–5:30 p.m.	Room 301 B
T17. Teaching Geosciences at the College Level	1:30–5:30 p.m.	Room 300 C

Afternoon Poster Sessions: *Authors will be present from 2 to 4 PM*

D6. Planetary Geology (Posters)	1:30–5:30 p.m.	Room 301 DE/Henley Concourse
D7. Stratigraphy, Sedimentation, and Diagenesis (Posters)	1:30–5:30 p.m.	Room 301 DE/Henley Concourse
T14. Geologic Mapping from the Appalachians to the Planets (Posters)	1:30–5:30 p.m.	Room 301 DE/Henley Concourse
T18. Undergraduate Research II (Posters)	1:30–5:30 p.m.	Room 301 DE/Henley Concourse

Keynote Address: Robert M. Hazen, Senior Staff Scientist at the Carnegie Institute Geophysical Laboratory, and Executive Director of the Deep Carbon Observatory

UT Earth & Planetary Sciences Alumni and Friends Reception	6–7 p.m.	Room 300 ABC
	7:30–9 p.m.	6th Floor Lobby, Strong Hall

FRIDAY, 13 APRIL

Session Chairs Orientation and Breakfast	7–7:50 a.m.	Rotunda Room
Campus Representatives Breakfast	7–8 a.m.	Board Room
Registration	7 a.m.–noon	Clinch Concourse
Speaker Ready Room	7 a.m.–2 p.m.	Business Center, adjacent to Room 301E
Exhibits Open	8 a.m.–5 p.m.	Clinch Concourse

Morning Oral Technical Sessions

D13. Petrology, Structure, and Tectonics	8 a.m.–noon	Room 300 C
T1. Seismic Hazards in the Eastern United States	8 a.m.–noon	Room 300 D
T8. Geomicrobiology of Microbes and Minerals: Influence across Ecosystem Scales	8 a.m.–noon	Room 301 A
T11. Morphology and Evolutionary Trends	8 a.m.–noon	Room 301 B
T19. Tectonics, Geochronology, and Thermochronology	8 a.m.–noon	Room 301 C

EVENT	TIME	LOCATION
Morning Poster Sessions: <i>Authors will be present from 9 to 11 AM</i>		
D8. Igneous Petrology, Metamorphic Petrology, and Geochemistry (Posters)	8 a.m.–noon	Room 301 DE/Henley Concourse
D9. Geomorphology (Posters)	8 a.m.–noon	Room 301 DE/Henley Concourse
P1. Longstanding Problems and New Ideas About the Structure and Tectonic Evolution of the Southern Appalachians and Other Mountain Belts: In Honor of the Career of Robert D. Hatcher Jr. (Posters)	8 a.m.–noon	Room 301 DE/Henley Concourse
T18. Undergraduate Research III (Posters)	8 a.m.–noon	Room 301 DE/Henley Concourse
GSA GeoCareers Program Workshop Part 3: Cover Letters, Resumes and CV's	9–10 a.m.	Rotunda Room
The John Mann Mentors in Applied Hydrogeology Program	noon–1:30 p.m.	Rotunda Room
Exhibitor Tear Down	5–8 p.m.	Clinch Concourse
FT3. Blue Ridge–Inner Piedmont Geotraverse from the Great Smoky Thrust to the Inner Piedmont: Upper Crust to Upper Lower Crust, Terranes, Large Faults, and Sutures (Field Trip)	5–11:55 p.m.	Lobby
Afternoon Oral Technical Sessions		
D12. Paleontological Potpourri	1:30–5:30 p.m.	Room 301 B
T2. Recent Advances in Our Understanding of The Crust and Upper Mantle in the Southeastern United States	1:30–5:30 p.m.	Room 301 C
T3. Geomorphic Anomalies and Underlying Geologic Controls Identified from Surficial and Bedrock Mapping, Southeastern United States	1:30–5:30 p.m.	Room 300 D
T10. Biogeochemical Cycling and Microbial Dynamics in Response to Pulse Events	1:30–5:30 p.m.	Room 301 A
Afternoon Poster Sessions: <i>Authors will be present from 2 to 4 PM</i>		
D10. Economic Geology (Posters)	1:30–5:30 p.m.	Room 301 DE/Henley Concourse
D11. Engineering Geology (Posters)	1:30–5:30 p.m.	Room 301 DE/Henley Concourse
D12. Paleontological Potpourri (Posters)	1:30–5:30 p.m.	Room 301 DE/Henley Concourse
T18. Undergraduate Research IV (Posters)	1:30–5:30 p.m.	Room 301 DE/Henley Concourse
SATURDAY, 14 APRIL		
FT4. Steaming through the Ordovician (Field Trip)	6:45 a.m.–2 p.m.	Lobby
FT9. Mesoscale Structures, Macroscale Folds, and Inferred Cratonic Basement Structures, Nashville Dome, Central Tennessee (Field Trip)	7 a.m.–11:55 p.m.	Lobby
FT5. Lessons from Limestone: How to Teach All Sciences with Limestone (Field Trip)	7:30 a.m.–5 p.m.	Lobby
FT6. Revisiting the Flynn Creek Impact Structure, Jackson County Tennessee (Field Trip)	7:30 a.m.–6:30 p.m.	Lobby
FT7. Nutrient Hotspots through Time: Taphonomy in Modern and Fossil Ecosystems (Field Trip)	8 a.m.–5:30 p.m.	Lobby
FT8. Hydrogeology and Structure of Tuckaleechee Cove and Vicinity (Field Trip)	8:30 a.m.–6 p.m.	Lobby

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

THURSDAY, 12 APRIL 2018

MORNING ORAL TECHNICAL SESSIONS

SESSION NO. 1

D7. Stratigraphy, Sedimentation, and Diagenesis

8:00 AM, Knoxville Convention Center Room 301 A

Paula J. Perilla-Castillo and R. Seth Wood, Presiding

- 1-1 8:00 AM Bryan, Jonathan R.*; Means, Guy: **QUATERNARY GEOLOGY OF THE GULF INTRACOASTAL WATERWAY, WALTON AND BAY COUNTIES, NORTHWEST FLORIDA**
- 1-2 8:20 AM Perilla-Castillo, Paula J.*; Horn, Sally P.; Cyr, Howard J.; Boehm, Mathew S.; McKay, Larry D.: **EVENT LAYERS IN CORES FROM THE TENNESSEE RIVER FLOODPLAIN: DESCRIPTION, INTERPRETATION, AND IMPLICATIONS**
- 1-3 8:40 AM Paton, Timothy*; Brett, Carlton E.: **REVISED STRATIGRAPHY OF THE LOWER SIMCOE GROUP OF SOUTHERN ONTARIO AND CORRELATION WITH THE CINCINNATI ARCH**
- 1-4 9:00 AM Henderson, Miles A.*; Kah, Linda C.; Gomez, Fernando J.; Sperling, Erik A.: **INVESTIGATING THE MIDDLE ORDOVICIAN (DARRIWILIAN) REDOX STRUCTURE OF THE ARGENTINE PRECORDILLERA WITH SULFUR ISOTOPE AND IRON SPECIATION PROXIES**
- 1-5 9:20 AM Kriscautzky, Agustin*; Kah, Linda C.: **PETROGRAPHIC OBSERVATION OF MOLAR-TOOTH MICROSPAR SUGGESTS FLUID-MIXING AS A DRIVER FOR PRECIPITATION**
- 1-6 9:40 AM Wood, R. Seth*; Chakoumakos, Bryan C.; Kah, Linda C.; Pracheil, Brenda M.; Fortner, Allison M.: **MINERALOGY MATTERS: ASSESSING THE MINERALOGIC HETEROGENEITY OF OTOLITH PAIRS USING NEUTRON DIFFRACTION, RAMAN SPECTROSCOPY, AND X-RAY DIFFRACTION**
- 10:00 AM **BREAK**

- 1-7 10:20 AM Kyle, J. Richard*: **CONSTRAINING 500 MILLION YEARS OF FLUID-ROCK INTERACTIONS, LOWER ORDOVICIAN KNOX GROUP, TENNESSEE-KENTUCKY**

- 1-8 10:40 AM Byerly, Don*: **TENNESSEE MARBLE**

SESSION NO. 2

S1. Longstanding Problems and New Ideas About the Structure and Tectonic Evolution of the Southern Appalachians and Other Mountain Belts I: In Honor of the Career of Robert D. Hatcher Jr.

8:00 AM, Knoxville Convention Center Room 301 C

Arthur J. Merschat, J. Ryan Thigpen, Elizabeth McClellan and Mark W. Carter, Presiding

- 8:00 AM **INTRODUCTORY REMARKS**
- 2-1 8:05 AM Moecher, D.P.*; Samson, S.D.; Tohver, Eric: **EVOLUTION OF THE BLUE RIDGE BASEMENT COMPLEX IN THE EASTERN GREAT SMOKY MOUNTAINS: EVIDENCE FROM ZIRCON U-PB GEOCHRONOLOGY AND ND-PB ISOTOPE GEOCHEMISTRY OF BASEMENT GNEISSES**
- 2-2 8:25 AM Eckert, James O.*; Ague, Jay J.: **PRESSURE-TEMPERATURE (P-T) ESTIMATES FROM MINERALOGIC THERMOBAROMETRY IN AND NEAR THE WAYAH GRANULITE CORE, NC, INCLUDING NEW ZIRCONIUM-IN-RUTILE TEMPERATURES (ZRT): IMPLICATIONS FOR TECTONIC HISTORY, PRESERVATION OF PEAK T, AND POST-PEAK RE-EQUILIBRATION**
- 2-3 8:45 AM Levine, Jamie S.F.*; Casale, Gabriele; Rahl, Jeffrey M.; Craig, Taylor D.; Martin, Claire P.: **USING EBSD AND MICROSTRUCTURAL ANALYSIS TO CONSTRAIN DEFORMATION CONDITIONS IN THE BLUE RIDGE**
- 2-4 9:05 AM Hames, Willis E.*: **LONGSTANDING PROBLEMS REGARDING THE DISTRIBUTION AND CONDITIONS OF TACONIAN AND ALLEGHANIAN METAMORPHISM IN THE WESTERN BLUE RIDGE, WITH NEW PTT CONSTRAINTS FROM THE MURPHY SYNCLINORIUM**
- 2-5 9:25 AM Barineau, Clinton I.*; Tull, James F.; Holm-Denoma, Christopher S.: **NOT YOUR FATHER'S TACONIC OROGENY: SIGNIFICANCE OF AN IAPETUS-FACING, LAURENTIAN**

- PLATE ORDOVICIAN ARC-BACKARC SYSTEM IN THE SOUTHERN APPALACHIANS**
- 2-6 9:45 AM Tull, James F.*: **GEOMETRY OF THRUST TRAJECTORIES IN THE SOUTHERN APPALACHIAN HINTERLAND OF GEORGIA AND ALABAMA**
- 10:05 AM **BREAK**
- 2-7 10:20 AM Southworth, Scott*: **MESOPROTEROZOIC TO CENOZOIC FAULTS AND FAULT ZONES ASSOCIATED WITH THE COMPLEX TECTONIC HISTORY OF THE APPALACHIAN BLUE RIDGE**
- 2-8 10:40 AM Bailey, Christopher M.*; Vaughan, Aubrey: **THE BLUE RIDGE-PIEDMONT BOUNDARY IN VIRGINIA: A TRANSPRESSIONAL FRONTIER**
- 2-9 11:00 AM McAleer, Ryan J.*; Carter, Mark W.; Spears, David B.; Regan, Sean P.; Burton, William C.: **GEOCHRONOLOGY OF THE ELK HILL COMPLEX AND LAKESIDE FAULT ZONE, CENTRAL VIRGINIA PIEDMONT**
- 2-10 11:20 AM Warrell, Kathleen F.; Potter, Christopher J.*; Malinconico, MaryAnn L.: **INSIGHTS INTO THE GEOMETRY AND EVOLUTION OF THE CHATHAM FAULT AND DAN RIVER BASIN NEAR CHATHAM, VIRGINIA**
- 2-11 11:40 AM Huebner, Matthew T.*; Rehrer, Justin R.; Hatcher, Robert D.: **A DISCUSSION ON THE ALLOCHTHONOUS HISTORY OF THE PINE MOUNTAIN TERRANE GIVEN NEW EVIDENCE FROM ITS NORTHEASTERN EXTENT**

SESSION NO. 3***T5. Environmental Problems and Solutions Associated with Appalachian Shale Plays and Coal Mining (GSA Sedimentary Geology Division)***

8:00 AM, Knoxville Convention Center Room 300 D

Anna Szyrkiewicz and Nathaniel Warner, Presiding

- 8:00 AM **INTRODUCTORY REMARKS**
- 3-1 8:10 AM Entrekin, Sally A*: **ALTERATIONS TO SMALL STREAMS FROM ACTIVITIES ASSOCIATED WITH HIGH-VOLUME HYDRAULIC FRACTURING: FAYETTEVILLE SHALE AS A CASE STUDY**
- 3-2 8:30 AM Geeza, Thomas J.*; Gillikin, David P.; Warner, Nathaniel: **TRACE AND MAJOR ELEMENT RATIOS IN ELLIPTIO DILATATUS SHELLS AS INDICATORS OF SURFACE WATER QUALITY IN WESTERN PENNSYLVANIA**
- 3-3 8:50 AM Warner, Nathaniel*: **BIOACCUMULATION OF ALKALINE EARTH METALS ASSOCIATED WITH OIL AND GAS OPERATIONS**
- 3-4 9:10 AM McKinley, Jessica C.*; Jubb, Aaron M.; Engle, Mark A.: **TRACE ELEMENT DETERMINATION IN PRODUCED WATERS FROM CONTIGUOUS UNITED STATES HYDROCARBON RESERVOIRS WITH ICP-OES: THE ADVANTAGES OF A HIGH SALINITY TOLERANCE**
- 3-5 9:30 AM Zhu, Junfeng*; Parris, T. Marty; Taylor, Charles J.; Webb, Steven E.; Davidson, Bart; Smath, Richard A.; Richardson, Stephen D.; Molofsky, Lisa J.; Smith, Ann P.; Kromann, Jenna S.: **OCCURRENCE AND ORIGIN OF METHANE IN SHALLOW GROUNDWATER IN BERE A AND ROGERSVILLE PLAY AREAS, EASTERN KENTUCKY**
- 9:50 AM **BREAK**
- 3-6 10:10 AM Szyrkiewicz, Anna*; LeDoux, St. Thomas Majeau; Faiia, Anthony M.; Mayes, Melanie: **NO DIRECT EVIDENCE OF METHANE IN SHALLOW GROUNDWATER FROM HYDRAULIC FRACTURING ACTIVITIES IN EASTERN KENTUCKY**
- 3-7 10:30 AM Ramsey, Ashley*; Szyrkiewicz, Anna; Faiia, Anthony M.: **ASSESSMENT OF TRACE METAL CONTAMINATION IN RIVERINE SEDIMENTS FROM THE COAL ASH SPILL IN KINGSTON, TENNESSEE AND POTENTIAL BIO-IMMOBILIZATION THROUGH MICROBIAL SULFATE REDUCTION**

- 3-8 10:50 AM Magno, Melissa A.*; Luffman, Ingrid; Nandi, Arpita: **DETERMINATION OF HEAVY METALS AND SPATIAL DISTRIBUTION OF HEAVY METALS IN SOILS BASED ON SOIL PHYSICO-CHEMICAL CHARACTERISTICS, NEAR AN ABANDONED MINE-COMPLEX IN BUMPUS COVE, TN**

SESSION NO. 4***T13. Neontological Approaches to Paleontological Questions***

8:00 AM, Knoxville Convention Center Room 301 B

Stephanie K. Drumheller and Matthew A. Tibbits, Presiding

- 4-1 8:00 AM Nawrot, Rafal*; Scarponi, Daniele; Azzarone, Michele; Amorosi, Alessandro; Wittmer, Jacalyn M.; Dexter, Troy A.; Kusnerik, Kristopher M.; Portell, Roger W.; Kowalewski, Michal: **INFERRING EXTINCTION DYNAMICS FROM STRATIGRAPHIC DATA: LESSONS FROM THE HOLOCENE FOSSIL RECORD**
- 4-2 8:20 AM Schwimmer, David R.*; Montante, William M.: **HORSESHOE CRABS AS MODERN ANALOGS OF TRILOBITES: CONTRARY EVIDENCE FROM A MERASPID CLUSTER IN THE UPPER CAMBRIAN CONASAUGA FORMATION, WESTERN GEORGIA**
- 4-3 8:40 AM Tibbits, Matthew A.*: **THE MORPHOMETRICS OF PHENOTYPIC PLASTICITY**
- 4-4 9:00 AM Zachos, Louis G.*; Sprinkle, James: **VARIATIONS IN THE APICAL DISC OF A MODERN SEA URCHIN**
- 4-5 9:20 AM Martin, Anthony J.*: **CLAMS, WHELKS, AMPHIPODS, AND SHOREBIRDS: A NEOICHOLOGICAL LOVE STORY**
- 4-6 9:40 AM Drumheller, Stephanie K.*; Wilberg, Eric W.: **CROCODYLIAN SNOOTS IN SPACE AND TIME REVISITED: NEW INSIGHTS USING GEOMETRIC MORPHOMETRICS, DIETARY SURVEYS, AND FEEDING TRACES**
- 10:00 AM **BREAK**
- 4-7 10:20 AM Albee, Elizabeth C.*; Drumheller, Stephanie K.; Gignac, Paul M.: **COMPARING PROXIES IN BITE-FORCE ESTIMATES BASED ON EXPERIMENTALLY REPLICATED BITE MARKS**
- 4-8 10:40 AM Smith, Gregory J.*; DeSantis, Larisa R.G.: **SPATIAL AND TEMPORAL VARIABILITY IN NORTH AMERICAN GOMPHOTHERE DIET AS INFERRED FROM DENTAL MICROWEAR TEXTURES**
- 4-9 11:00 AM Scholtz, Elinor*; DeSantis, Larisa R.G.: **USING SPACE FOR TIME SUBSTITUTIONS AND COMPARISONS BETWEEN FOSSIL AND MODERN SPECIMENS TO ASSESS IMPACTS OF EUROPEAN ARRIVAL ON MARSUPIAL MAMMALS**
- 4-10 11:20 AM DeSantis, Larisa R.G.*; Coulson, Graeme; Biedron, Eva M.; Yann, Lindsey T.; Smith, Gregory J.; Scholtz, Elinor; Death, Clare; Garnick, Sarah; Reside, Anna: **THE NECESSITY OF UNDERSTANDING THE PRESENT TO CLARIFY THE PAST: DETERMINING THE EFFECTS OF DIET AND ENVIRONMENT ON THE DENTAL MICROWEAR OF KANGAROOS**
- 4-11 11:40 AM Saunders, Autumn Kimberly*; DeSantis, Larisa R.G.: **DIETARY ECOLOGY OF THE LOCAL LANCEFIELD FAUNA IN VICTORIA, AUSTRALIA: DID THE KANGAROOS DIE FROM A MASSIVE DROUGHT?**

SESSION NO. 5***T15. Planetary Surface Processes (GSA Planetary Geology Division; GSA Quaternary Geology and Geomorphology Division; GSA Sedimentary Geology Division)***

8:00 AM, Knoxville Convention Center Room 300 C

Devon M. Burr and Bradley J. Thomson, Presiding

- 5-1 8:00 AM McSween, Harry Y.*: **BUILDING BLOCKS FOR THE TERRESTRIAL PLANETS**
- 5-2 8:20 AM Jaret, Steven J.*; King, David T.: **FLYNN CREEK IMPACT STRUCTURE, TENNESSEE: AN OVERVIEW**

- 5-3 8:40 AM Sikder, Arif M.*; Misra, Saumitra; Horton, Newsom; Brum, Jose; Hill, Tina R.; Liu, Xin-Chen; Turner, Joseph B. McGee: **MINERALOGICAL AMBIGUITY OF THE IMPACT EJECTA OF LONAR CRATER, INDIA**
- 5-4 9:00 AM Thomson, Bradley J.*: **EROSION RATES ON MARS INFERRED FROM CRATER STATISTICS**
- 5-5 9:20 AM Fedo, Christopher M.*; Grotzinger, John P.; Schieber, Juergen; Gupta, Sanjeev; House, Christopher H.; Edgett, K.S.; Siebach, Kirsten L.; Fraeman, Abigail A.; Edgar, Lauren A.; Kronyak, R.E.; Kah, L.C.; Gwizd, Samantha; Vasavada, A.: **THINGS ARE NOT ALWAYS AS THEY SEEM: DETANGLING INTERSECTING PLANAR AND CURVI-PLANAR VEINS AND FRACTURES FROM PRIMARY BEDDING IN THE VERA RUBIN RIDGE MEMBER, MURRAY FORMATION, MARS**
- 5-6 9:40 AM Kronyak, R.E.*; Kah, L.C.; Miklusicak, N.B.; Edgett, K.S.; Nachon, M.: **VEINS AND FRACTURES IN GALE CRATER, MARS: UNDERSTANDING POST-DEPOSITIONAL FLUID FLOW EVENTS**
- 10:00 AM **BREAK**
- 5-7 10:20 AM Wolak, Jeannette M.*; Patterson, Amber B.: **CHANNEL DEVELOPMENT ON MARTIAN TERRACED FANS: A NEW CLUE TO FORMATIVE PROCESSES?**
- 5-8 10:40 AM Sakimoto, Susan E.H.*; Gregg, Tracy K.P.: **TITAN'S CHANNELS: VELOCITY DISTRIBUTIONS, SEDIMENT TRANSPORT AND EROSIONAL IMPLICATIONS**
- 5-9 11:00 AM Gregg, Tracy K.P.*; Sakimoto, Susan E.H.; Shmelkina, Iana: **TITAN'S CHANNELS: WHAT'S UNDERNEATH?**
- 5-10 11:20 AM Maue, Anthony D.*; Burr, Devon M.; Levy, Joseph S.; Nathan, Erica: **OBSERVATIONAL AND EXPERIMENTAL EVIDENCE FOR THE COMMUNION OF FLUVIAL SEDIMENT ON TITAN**
- 5-11 11:40 AM Nield, Emily Victoria*; Burr, Devon M.; Emery, Joshua P.; Sutton, Stephen L.F.; Kok, Jasper F.; Smith, J.K.: **THE EFFECT OF DENSITY RATIO ON SALTATION THRESHOLD: REDERIVING THE CURVE**

MORNING POSTER TECHNICAL SESSIONS

SESSION NO. 6

D1. Archeological Geology (Posters)

8:00 AM, Knoxville Convention Center Room 301 DE/Henley Concourse

Authors will be present from 9 to 11 AM

Booth #

- 6-1 1 Bradley-Lewis, Neeshell*; Seramur, Keith C.; Cowan, Ellen A.: **USING GRADIOMETER AND GPR DATA TO IDENTIFY AND MAP CULTURAL FEATURES**

SESSION NO. 7

D2. Karst (Posters)

8:00 AM, Knoxville Convention Center Room 301 DE/Henley Concourse

Authors will be present from 9 to 11 AM

Booth #

- 7-1 2 Martinez-Sacristan, Hernando*: **ARCHAEOLOGICAL RESEARCH IN CAVES HELPS GEOLOGY: FAR FROM RHETORIC, CLOSER TO REALITY**
- 7-2 3 Emmons, R.V.*; Larson, E.B.; Finnen, D.C.: **A NEW LABORATORY METHOD FOR MEASURING THE DISSOLUTION RATES OF CARBONATE ROCKS**
- 7-3 4 Boyd, Rebecca*; Larson, E.B.; Sumrall, J.B.: **TIMING OF EXPRESSION OF PROGRADATIONAL COLLAPSE BLUE HOLES IN THE BAHAMAS: EXAMPLES FROM ELEUTHERA**

- 7-4 5 Patterson, Justyn A.*; Jovanelly, Tamie J.: **"GROUNDBREAKING INKARSTABLE" INTERACTIONS: A CASE STUDY OF BERRY COLLEGE GROUNDWATER HYDROLOGY, SEASONALITY, AND SINKHOLE FORMATION**

SESSION NO. 8

D3. Environmental Geology (Posters)

8:00 AM, Knoxville Convention Center Room 301 DE/Henley Concourse

Authors will be present from 9 to 11 AM

Booth #

- 8-1 6 Taylor, Ellen*; Boles, Bruce W.; Lee, Peter A.; Campen, Richard; Dyar, M. Darby; Sklute, Elizabeth C.; Mikucki, Jill A.: **MICROBE-MINERAL INTERACTIONS IN A SUB-ZERO BRINE AQUIFER BENEATH TAYLOR GLACIER, ANTARCTICA**
- 8-2 7 Ottinger, Sarah Louise*: **EFFECTS OF GENETICALLY MODIFIED SWITCHGRASS CULTIVATION ON SOIL CARBON DYNAMICS**
- 8-3 8 Hammond, Nicholas*; Gu, Chuanhui; Evans, Sarah G.: **EFFECT OF SOIL ORGANIC CARBON CONTENT ON RIPARIAN NITRATE ATTENUATION DURING STREAM STAGE FLUCTUATIONS**
- 8-4 9 Ajuwon, Favor Olasubomi*; Murray, Patrick James; Sontag, Phil; Steen, Andrew D.: **UNDERSTANDING THE PROCESS OF ORGANIC MATTER REMINERALIZATION AND ITS POSSIBLE LINK TO CYCLING OF CONTAMINANTS IN ESTUARIES**
- 8-5 10 Keily, Elizabeth*; Sikder, Arif M.; Alauddin, Mohammad; McCallister, S. Leigh; Boehling, Daniel: **GROUNDWATER QUALITY ASSESSMENT OF THE PINEY POINT AQUIFER**
- 8-6 11 Putt, Andrew D.*; Adams, Benjamin G.; Fitzgerald, Kathleen S.; McBride, Kathryn; McKay, Larry D.; Hazen, Terry C.: **ULTRAMICROBACTERIA IN URANIUM-CONTAMINATED Y-12 GROUNDWATER**
- 8-7 12 Rahman, Md Mahfujur*; Hasan, M. Aziz; Ahmed, Kazi Matin: **ALTERNATIVE OPTIONS FOR SAFE DRINKING WATER IN ARSENIC AND SALINITY AFFECTED NARAIL DISTRICT, BANGLADESH**
- 8-8 13 Sutton, Collin R.*; Ashwood, Loka; Hiett, Christy; Lee, Ming-Kuo; Billor, Mehmet Zeki: **ASSESSING SOCIO-ENVIRONMENTAL FACTORS FOR CHILDHOOD LEUKEMIA CLUSTER IN CLEBURNE COUNTY, ALABAMA**

SESSION NO. 9

D4. Hydrogeology (Posters)

8:00 AM, Knoxville Convention Center Room 301 DE/Henley Concourse

Authors will be present from 9 to 11 AM

Booth #

- 9-1 14 Carlson, Charles*; Georgen, Jennifer; Hutt, Sheila: **SUBMARINE GROUNDWATER DISCHARGE IN THE CHESAPEAKE BAY: QUANTIFYING THE IMPORTANCE OF FIELD PARAMETERS**
- 9-2 15 Hutt, Sheila*; Georgen, Jennifer; Carlson, Charles: **THE EFFECTS OF SEA LEVEL RISE ON SALTWATER INTRUSION AND SOLUTE TRANSPORT IN GROUNDWATER FLOW SYSTEMS OF THE COASTAL MID-ATLANTIC: RESULTS OF A FRAMEWORK NUMERICAL MODELING STUDY**
- 9-3 16 Reichard, James S.*; Vance, R. Kelly; Kelly, Jacque L.; Meyer, Brian K.: **INFLUENCE OF GEOLOGIC STRUCTURE ON SALTWATER INTRUSION IN THE SURFICIAL AQUIFER ON ST. CATHERINES ISLAND, GEORGIA**
- 9-4 17 Whitticar, G. Richard*; Shoup, Bryce O.: **CYPRESS-MAPLE SWAMPS AND PINE-OAK DUNES DEVELOP DIFFERENT ACTUAL EVAPOTRANSPIRATION RATES, FIRST LANDING STATE PARK, VIRGINIA BEACH, VIRGINIA**
- 9-5 18 Groce-Wright, Nigel*; Jovanelly, Tamie J.: **THE EFFECT OF LAVENDER MOUNTAIN ON RAINFALL DISTRIBUTION DUE TO OROGRAPHIC LIFTING**
- 9-6 19 Ferry, Veronica*; Little, Dakota; Gannon, J.P.: **CONCENTRATION-DISCHARGE RELATIONSHIPS HIGHLIGHT DIFFERENCES IN**

- STREAMFLOW GENERATION BETWEEN TWO TRIBUTARIES IN A HEADWATER CATCHMENT**
- 9-7 20 Corcoran, Kyle*; Gannon, J.P.; Martin, Thomas; Miller, Jerry R.: **BIOGEOCHEMICAL CHARACTERISTICS OF SUBSURFACE WATERS IN RECLAIMED SOILS AT PT BUKIT ASAM COAL MINE, SOUTH SUMATRA, INDONESIA**
- 9-8 21 Prutzman, William J.*; Barnes, Samuel L.; Nelson, Daren T.: **THE ROBESON COUNTY GROUNDWATER PROJECT: A PARTNERSHIP WITH THE COMMUNITY**

SESSION NO. 10**D5. Geoscience Education (Posters)**

8:00 AM, Knoxville Convention Center Room 301 DE/Henley Concourse

Authors will be present from 9 to 11 AM

- | | Booth # | |
|------|---------|---|
| 10-1 | 22 | Bess, Maddie*; Jovanelly, Tamie J.: MOVING BEYOND COAL: HOW A COMMUNITY CAN TRANSITION |
| 10-2 | 23 | Fryar, Alan E.*; Freeman, Rebecca L.; Hanley, Carol; Sherman, Amanda R.: EXPLORING WATER QUALITY IN EASTERN INDIA AND KENTUCKY: AN INTEGRATED ONLINE AND FIELD PROJECT FOR PLACE-BASED AND CROSS-CULTURAL GEOSCIENCE EDUCATION |
| 10-3 | 24 | Nickerson, Brandon T.*; Reynolds, Valerie S.: GEOLOGIC GUIDE TO REEDY CREEK NATURE PRESERVE, CHARLOTTE, NC |
| 10-4 | 25 | Mennen, Nathan*; Larrimore, Emily; Jovanelly, Tamie J.: USING ICELAND'S SUSTAINABLE ENERGY PLATFORM TO ILLUSTRATE BENEFITS OF RENEWABLE SOURCES |
| 10-5 | 26 | Linton, Whitney*; Forcino, Frank L.: HOW LANGUAGE AFFECTS STUDENT UNDERSTANDING OF CLIMATE CHANGE IN RELATION TO PLANT PROCESSES |
| 10-6 | 27 | Hurding-Jones, Holly*; Forcino, Frank L.: THE PUBLIC'S UNDERSTANDING OF GEOLOGY COMPARED TO BELIEF IN PSEUDOSCIENTIFIC PROPERTIES OF GEMS AND CRYSTALS |
| 10-7 | 28 | Bramblett, Jeremy L.*; Gaudin, Timothy J.; Heckert, Andrew B.; Toran, Marta L.: USING POLYMER CLAYS TO MAKE MOLDS AND CASTS OF FOSSILS FOR TEACHING AND OUTREACH |
| 10-8 | 29 | Bechtel, Randy*; Stadelman, Steve A.: APPLYING THE ENVIRONMENTAL EDUCATION GUIDELINES OF EXCELLENCE TO GEOSCIENCE EDUCATION |

SESSION NO. 11**T18. Undergraduate Research I (Posters) (Council on Undergraduate Research Geosciences Division; GSA Quaternary Geology and Geomorphology Division)**

8:00 AM, Knoxville Convention Center Room 301 DE/Henley Concourse

Authors will be present from 9 to 11 AM

- | | Booth # | |
|------|---------|--|
| 11-1 | 30 | Cottingham, Kevin*; Abbott, James; Hall, Madi; Ross, Aubree; Samuels, Jake; Suminski, Molly; Fagan, Amy: AN ANALYSIS OF NWA 8632 |
| 11-2 | 31 | Ramsey, Sierra*; Fagan, Amy L.: A COMPARATIVE LOOK AT LUNAR METEORITES NWA 8632 AND NWA 032 |
| 11-3 | 32 | Ingram, Kenya J.*; Hier, Donovan P.; LeDuc, Kayla M.; Morgan, John C.; Recchuiti, Erin M.; Skeen, Evan; Fagan, Amy: ANALYZING THE MINERAL CHEMISTRY OF THE NWA 8632 METEORITE FOR OLIVINE PHENOCRYSTS |
| 11-4 | 33 | Simpson, Emily N.*; Milam, Keith A.: THE EFFECT OF GRIND TIME ON THE CRYSTAL LATTICE OF DOLOMITE AND THE IMPLICATIONS FOR SHOCK METAMORPHIC STUDIES OF IMPACTS INTO CARBONATE TARGETS |
| 11-5 | 34 | Wood, R. Seth*; Roberts, Sarah E.; McCanta, Molly C.: GEOCHEMICAL ASSESSMENT OF CRYPTOTEPHRAS FROM IODP CORE U1396C |
| 11-6 | 35 | Harris, Felicia*; Berg, Christopher A.: ASSESSMENT OF POST-EMPLACEMENT METAMORPHISM IN METAGABBROIC ROCKS OF THE JULIETTE MAFIC SUITE, CENTRAL GEORGIA |

- | | | |
|-------|----|--|
| 11-7 | 36 | Evans, Cameron*; McNamee, Brittani D.: INVESTIGATION OF TI BEARING AND NON-TI BEARING BIOTITES COEXISTING IN METAPELITE SCHISTS FROM MOUNT MITCHELL, NORTH CAROLINA |
| 11-8 | 37 | Beitel, Hayley R.*; Churnet, Habte G.; Hossain, Azad A.K.M.; Mies, Jonathan W.: CHARACTERIZATION OF METAMORPHIC ZONES IN THE TENNESSEE BLUE RIDGE USING GIS AND DIGITAL IMAGE PROCESSING |
| 11-9 | 38 | Schmidt, Rebecca Lynn*; Nord, Julia Ann: INVESTIGATION OF CHEMICAL METASOMATISM OF A BLUE RIDGE CHARNOCKITE |
| 11-10 | 39 | Carberry, Jade-Ashley*; Aronoff, Ruth F.: PETROGENETIC HISTORY OF ROCKS OF THE SOUTHERN WET MOUNTAINS, COLORADO |
| 11-11 | 40 | Rasiak, Sophia*; Reeder, Adrienne; McClellan, Elizabeth: FROM OUTCROP TO REGION: REVEALING THE STRATIGRAPHIC AND STRUCTURAL FRAMEWORK OF THE UPPERMOST MOUNT ROGERS FORMATION, SW VA, THROUGH DETAILED OUTCROP ANALYSIS |
| 11-12 | 41 | Boan, Phillip C.*; Burstein, Jacob T.; Burstein, Joshua A.; Kellett, Ryan; Medlin, Lawrence J.; Herman, David J.; Peach, Brandon T.; Bradley, Philip J.; Knapp, James H.: A STRUCTURAL GEOLOGIC TEST OF THE TECTOGRAPHIC ORIGIN OF EDIACARAN SPECIMENS, DURHAM COUNTY, NORTH CAROLINA: UNDERGRADUATE RESEARCH ON NEOPROTEROZOIC LIFE PART I |
| 11-13 | 42 | Gross, Megan R.*; Boan, Phillip C.; Edgar, Sedona; Niles, Jacob D.; Stewart, Jason L.; Herman, David J.; Peach, Brandon T.; Bradley, Philip J.; Knapp, James H.: A STRUCTURAL GEOLOGIC TEST OF THE TECTOGRAPHIC ORIGIN OF EDIACARAN SPECIMENS, DURHAM COUNTY, NORTH CAROLINA: UNDERGRADUATE RESEARCH ON NEOPROTEROZOIC LIFE PART II |
| 11-14 | 43 | Lasley, Camille*; Ranson, William A.: GEOLOGY AND BLUE RIDGE ESCARPMENT EVOLUTION ALONG THE WHITEWATER RIVER IN NORTHWESTERN SOUTH CAROLINA AND ADJACENT NORTH CAROLINA |
| 11-15 | 44 | Basile, Sarina; Ranson, William A.*: GEOLOGY AND BLUE RIDGE ESCARPMENT EVOLUTION ALONG THE THOMPSON RIVER IN NORTHWESTERN SOUTH CAROLINA AND ADJACENT NORTH CAROLINA |
| 11-16 | 45 | Lane, Christopher J.*; Ranson, William A.: STRUCTURAL AND PETROLOGIC ANALYSIS OF AUGEN GNEISS AT FALLS PARK AND ALONG THE REEDY RIVER, GREENVILLE, SOUTH CAROLINA |
| 11-17 | 46 | Adair, William A.*; Beitel, Hayley R.; Hamid, Zack A.; Hossain, Azad A.K.M.; Mies, Jonathan W.: EXPLORING THE POTENTIAL OF REMOTE SENSING AND GIS FOR GEOLOGICAL MAPPING OF WOODALL SHOALS, GA-SC |
| 11-18 | 47 | Richardson, Andrea E.*; Tate, Garrett W.; Sharp, Emily: GEOLOGIC MAP OF THE SOUTHERN ERWIN QUADRANGLE, TENNESSEE APPALACHIANS |
| 11-19 | 48 | Rosenberg, Christiana Destry*: SEARCHING FOR MACROSCALE FOLDS IN THE NASHVILLE DOME, CENTRAL TENNESSEE |
| 11-20 | 49 | Sullivan, Veronica F.*; Sen, Pragnyadipita; Wincele, Lily: GEOREFERENCED CROSS-SECTION ANALYSIS AND PRELIMINARY THREE-DIMENSIONAL GEOMETRIC MODELING OF THRUST DUPLEX IN THE FEURA BUSH QUARRY, SELKIRK, NY |
| 11-21 | 50 | Moulton, Dedrick E.*; Aronoff, Ruth F.: PRECAMBRIAN STRUCTURAL CONTROL ON PHANEROZOIC FAULTING IN THE WET MOUNTAINS, COLORADO |
| 11-22 | 51 | Parks, Ryan D.*; Hoar, Rachel M.; Thigpen, J. Ryan; Guenther, William R.; Brown, Summer J.; Swallow, Meredith: REFINING THE TIMING OF TETON FAULT MOTION AND UPLIFT OF THE TETON RANGE USING LOW-T THERMOCHRONOLOGY |

AFTERNOON ORAL TECHNICAL SESSIONS

SESSION NO. 12

D3. Environmental Geology

1:30 PM, Knoxville Convention Center Room 300 D

Leah Wenhold and Jordan Marisa Davis, Presiding

- 12-1** 1:30 PM Date, Swapneeta*; Jiang, Nannan; Loeffler, Frank E.; Parks, Jerry M.; Johs, Alexander: **UNDERSTANDING THE CELLULAR BIOCHEMISTRY OF MERCURY METHYLATING MICROORGANISMS**
- 12-2** 1:50 PM Soto Perez, Jeniffer*: **MODELING OF COMPETITIVE SORPTION AND TRANSPORT OF CETIRIZINE AND DIPHENHYDRAMINE IN NATURAL SOILS**
- 12-3** 2:10 PM Davis, Jordan Marisa*; Vulava, Vijay M.: **GEOCHEMICAL ANALYSIS OF URBAN DUST AND SOILS IN CHARLESTON PENINSULA**
- 12-4** 2:30 PM Wenhold, Leah*; Tran, Liem; McKay, Larry D.: **EMPLOYING ARCGIS AND DATABASES IN PLANNING INVESTIGATIONS OF FLOODPLAIN CONTAMINATION IN KNOXVILLE, TN**
- 12-5** 2:50 PM Russo, Aeon*: **ENHANCING WATER QUALITY OF A MOUNTAIN STREAM: AN ANALYSIS OF RETROFITTING LOW IMPACT DEVELOPMENT PRACTICES IN AND URBAN WATERSHED**

SESSION NO. 13

S1. Longstanding Problems and New Ideas About the Structure and Tectonic Evolution of the Southern Appalachians and Other Mountain Belts II: In Honor of the Career of Robert D. Hatcher Jr.

1:30 PM, Knoxville Convention Center Room 301 C

Arthur J. Merschat, J. Ryan Thigpen, Elizabeth McClellan and Mark W. Carter, Presiding

- 13-1** 1:30 PM Barbeau, David L.*; Sexton, Jubal; Howard, C. Scott; Secor, Donald T.; Morrow, Robert H.: **NEW CONSTRAINTS ON THE NATURE AND HISTORY OF THE MODOC ZONE FROM U-PB GEOCHRONOLOGY**
- 13-2** 1:50 PM Ettensohn, Frank R.*; Gilliam, William: **AN EARLIER INCEPTION FOR THE ACADIAN OROGENY IN THE CENTRAL APPALACHIANS? POSSIBLE EVIDENCE FROM MIGRATING HELDERBERGIAN (LATE SILURIAN-EARLY DEVONIAN) BLACK-SHALE BASINS**
- 13-3** 2:10 PM Merschat, Arthur*; Huebner, Matthew T.; Walsh, Gregory J.; Hatcher, Robert D.; Bream, Brendan R.: **A COMPARISON OF THE ACADIAN AND NEOACADIAN OROGENIES IN THE SOUTHERN AND NORTHERN APPALACHIANS**
- 13-4** 2:30 PM Thigpen, J. Ryan*; Hatcher, Robert D.; Merschat, Arthur: **TRANSITIONING FROM CHANNEL TO 'ESCAPE' FLOW IN LARGE HOT COLLISIONAL SYSTEMS: COMBINING STUDIES FROM THE HIMALAYAN AND SOUTHERN APPALACHIAN (NEOACADIAN) OROGENIC SYSTEMS**
- 13-5** 2:50 PM Stowell, Harold H.*; Schwartz, Joshua J.; Ingram, Stanton; Madden, Jeffrey R.: **DETERMINING THE MAGNITUDE AND EXTENT OF CRUSTAL THICKENING DURING ALLEGHANIAN OROGENESIS IN THE SOUTHERNMOST APPALACHIANS**
- 3:10 PM **BREAK**
- 13-6** 3:25 PM Thomas, William A.*: **SEQUENCE OF THRUSTING AT THE OUACHITA-APPALACHIAN JUNCTION**
- 13-7** 3:50 PM Hughes, Cameron A.*; Jessup, Micah J.; Shaw, Colin A.; Newell, Dennis L.: **CONDITIONS OF STRAIN LOCALIZATION ALONG THE CORDILLERA BLANCA SHEAR ZONE (CBSZ), PERU**

- 13-8** 4:10 PM Jessup, Micah J.*; Shaw, Colin A.; Hughes, Cameron A.; Newell, Dennis L.: **RHEOLOGY, KINEMATICS, AND THERMAL CONDITIONS DURING SYN-CONVERGENT EXTENSION ON THE CORDILLERA BLANCA DETACHMENT, PERU**
- 13-9** 4:30 PM Hill, Joseph C.*: **A CASE FOR A PALEOPROTEROZOIC TRANSPRESSIONAL BOUNDARY, BLACK HILLS, SOUTH DAKOTA: A HATCHLING'S VIEW**
- 13-10** 4:50 PM Taylor, Kenneth B.*: **DETAILED GEOLOGIC MAPPING LEGACY OF DR. ROBERT D. HATCHER, JR. AND HIS STUDENTS: 50-YEARS OF GEOLOGIC MAPPING, ONE OUTCROP AT A TIME WITH MORE THAN 51 MASTER'S THESES AND MORE THAN 17 PH.D. DISSERTATIONS**
- 13-11** 5:10 PM Hatcher, Robert D.*: **DETAILED GEOLOGIC MAPS, MOST QUANTITATIVE DATA IN GEOLOGICAL SCIENCE: AN ENDANGERED SPECIES?**

SESSION NO. 14

T7. Linkages among Subterranean Ecosystems and Geological Events in the Eastern United States

1:30 PM, Knoxville Convention Center Room 301 A

Nicholas S. Gladstone, Matthew L. Niemiller, Evan T. Carter, Michael L. McKinney and Sarah W. Keenan, Presiding

- 14-1** 1:30 PM Niemiller, Matthew L.*; Zigler, Kirk S.; Carter, Evin T.; Stephen, Charles D.R.; Engel, Annette Summers; Shear, William A.: **INFLUENCE OF GEOLOGICAL BARRIERS ON THE PHYLOGEOGRAPHY AND DISPERSAL OF CAVE-ADAPTED SCOTERPES MILLIPEDES (CHORDEUMATIDA: TRICHOPETALIDAE) IN THE INTERIOR LOW PLATEAU AND APPALACHIANS KARST REGIONS**
- 14-2** 1:50 PM Engel, Annette Summers*; Niemiller, Matthew L.; Zigler, Kirk S.; Ayala, Breanne N.; Hart, Pamela B.; Kuhajda, Bernard R.; Armbruster, Jonathan W.: **RECONSTRUCTING LATE PLIOCENE THROUGH EARLY PLEISTOCENE ANCESTRAL RIVER DRAINAGE BASINS IN THE INTERIOR LOW PLATEAU AND APPALACHIANS KARST REGIONS TO UNDERSTAND THE EVOLUTIONARY HISTORY OF TYPHLICHTHYS SUBTERRANEUS (PERCOPSIFORMES: AMBLYOPSIDAE)**
- 14-3** 2:10 PM McGlue, Michael M.*; Novello, Valdir Felipe; Cruz, Francisco W.; Santos, Rodney de Almeida; Hodelka, Bailee; Duffy, Andrew: **PRELIMINARY CHEMOSTRATIGRAPHY OF CAVE DEPOSITS IN THE PANTANAL WETLANDS (BRAZIL): INSIGHTS INTO LATE QUATERNARY ENVIRONMENTAL CHANGE**
- 14-4** 2:30 PM Osborne, Cesalea N.*: **HYDROGEOLOGY OF THE HIDDEN RIVER GROUNDWATER BASIN, HORSE CAVE, HART COUNTY, KENTUCKY**
- 14-5** 2:50 PM Burress, Pamela Hart*; Chakrabarty, Prosanta; Niemiller, Matthew L.: **POPULATION GENOMICS OF THE SOUTHERN CAVEFISH (TYPHLICHTHYS SUBTERRANEUS)**
- 3:10 PM **BREAK**
- 14-6** 3:30 PM Phillips, John G.*: **GENETIC DIVERSITY OF AN ENIGMATIC AQUIFER SPECIES FROM THE SOUTHEASTERN UNITED STATES, THE GEORGIA BLIND SALAMANDER (EURYCEA WALLACEI)**
- 14-7** 3:50 PM Boyd, Olivia; Phillips, Keith*; Johnson, Jarrett: **GEOGRAPHICALLY STRUCTURED GENETIC DIVERSITY IN THE CAVE BEETLE DARLINGTONIA KENTUCKENSIS VALENTINE 1952 (COLEOPTERA, CARABIDAE, TRECHINA)**
- 14-8** 4:10 PM Lawson, Haley*; Brown, Terri: **DISSOLVED ORGANIC CARBON IN SURFACE WATER AND GROUND WATER SYSTEMS IN THE CUMBERLAND GAP NATIONAL HISTORICAL PARK**

SESSION NO. 15**T12. Taphonomy: The Good, the Bad and the Ugly (Paleontological Society)**

1:30 PM, Knoxville Convention Center Room 301 B

Rebecca L. Freeman, Linda J. McCall and Simon A.F. Darroch, Presiding

- 15-1** 1:30 PM Freeman, Rebecca L.*; Dattilo, Benjamin: **COMPARATIVE TAPHONOMIC PETROGRAPHY: A CLOSER LOOK AT SHELL BEDS FROM THE CINCINNATI, OHIO AREA ORDOVICIAN (KATIAN)**
- 15-2** 1:50 PM Sheffield, Sarah L.*; Sumrall, Colin D.: **UNUSUAL PRESERVATION OF SILURIAN HOLOCYSTITIDS (DIPLOPORITA: BLASTOZOA): IMPLICATIONS FOR UNDERSTANDING EVOLUTIONARY TRENDS**
- 15-3** 2:10 PM Petsios, Elizabeth*; Tyler, Carrie L.; Portell, Roger W.; Kowalewski, Michał: **CRETACEOUS TO MODERN TRENDS IN DRILLING PREDATION AND PARASITISM ON ECHINOID**
- 15-4** 2:30 PM McCall, Linda J.*: **EXCEPTIONAL COLOR/COLOR PATTERN RETENTION IN THIRTY MILLION YEAR OLD OLIGOCENE, RIVER BEND FORMATION INVERTEBRATE SPECIMENS FROM NORTH TOPSAIL BEACH, NC**
- 15-5** 2:50 PM Darroch, Simon A.F.*; Saupe, Erin E.; Casey, Michelle M.: **PRESERVATION POTENTIAL OF GEOGRAPHIC RANGE SIZE IN DEEP TIME**
- 3:10 PM **BREAK**
- 15-6** 3:30 PM Widga, Chris*; Haugrud, Shawn; Schubert, Blaine; Wallace, Steven C.; Compton, Brian; Mead, Jim: **MASTODONS, VERTEBRATE TAPHONOMY AND NUTRIENT CYCLING AT THE GRAY FOSSIL SITE**
- 15-7** 3:50 PM Keenan, Sarah W.*; DeBruyn, Jennifer M.; Widga, Chris: **RECONSTRUCTING NUTRIENT HOTSPOTS IN TIME: INSIGHTS FROM THE GRAY FOSSIL SITE, TENNESSEE**
- 15-8** 4:10 PM Kelley, Patricia H.*; Cooke, Kimberly A.; Kelly, Bridget T.; Visaggi, Christy C.: **LACK OF TAPHONOMIC BIAS IN THE RECORD OF DRILLING PREDATION FOR PLEISTOCENE BIVALVES FROM NORTH CAROLINA AND THE GASTROPOD *CREPIDULA* FROM BEACH ASSEMBLAGES ALONG THE U.S. EAST COAST**
- 15-9** 4:30 PM Brundin, Justin Nathaniel*; Savrda, Charles E.: **WOOD BIOEROSION IMPLANT EXPERIMENT, MOBILE BAY AREA, ALABAMA: AN UPDATE**
- 15-10** 4:50 PM Daley, Gwen M.*; Tucker, Nicholas M.; Pierce, Timothy D.: **POST-COLLECTION TAPHONOMY: A CAUTIONARY TALE FROM A WORKING DISSERTATION COLLECTION**

SESSION NO. 16**T17. Teaching Geosciences at the College Level**

1:30 PM, Knoxville Convention Center Room 300 C

Renee Mazurek, Presiding

- 1:30 PM **INTRODUCTORY REMARKS**
- 16-1** 1:40 PM Childers, Daniel*: **UNDERGRADUATE STUDENT RESEARCH ON A SHOESTRING BUDGET: GEOLOGY HONORS OPTION AT DELAWARE COUNTY COMMUNITY COLLEGE**
- 16-2** 2:00 PM Harris, Randa R.*; Berg, Christopher A.; Congleton, John; Buzon, Marian E.; Mayer, James R.; Tefend, Karen S.: **ADDING ACTIVE-LEARNING ACTIVITIES, INCLUDING THE AR SANDBOX, TO INTRODUCTORY GEOLOGY LABS**
- 16-3** 2:20 PM McKay, Larry D.*; Horn, Sally P.; Drumheller, Stephanie K.; Sumrall, Colin D.; Ellis, Kelsey N.; Steen, Andrew D.: **ENGAGING COMMUNITY COLLEGE TRANSFER STUDENTS IN EXPERIENTIAL LEARNING AT THE UNIVERSITY OF TENNESSEE**
- 16-4** 2:40 PM Murphy, Steppen*: **CREEK RELEAF - A SERVICE LEARNING PROJECT PLANTING THE SEEDS TO SUCCESS**

- 16-5** 3:00 PM Mazurek, Renee*: **MOUNTAINS AROUND US PROJECT: INQUIRY-BASED LEARNING BEYOND THE CLASSROOM**
- 3:20 PM **BREAK**
- 16-6** 3:40 PM Isiorho, K. Solomon*: **DOING MORE WITH LESS: PLAUSIBLE RESEARCH PROJECTS FOR COMMUNITY COLLEGE STUDENTS**
- 16-7** 4:00 PM Norton, Rebecca*; Sethi, Parvinder; Sincavage, Ryan; Watts, Chester F.: **GIGAPAN VERSUS DRONE TOOLS: A CASE STUDY OF ROCK SLOPE STABILITY ISSUES AT NATURAL BRIDGE, ROCKBRIDGE COUNTY VA, USA**
- 16-8** 4:20 PM Heitmuller, Franklin T.*; Schmitz, Darrel W.; Bagley, M. Evan; Babineaux, Claire E.; Deans, Jeremy R.: **RIVALS FOR ROCKS: THE USM & MSU FIELD GEOLOGY COURSE**
- 16-9** 4:40 PM Witherspoon, William D.*; Mobasher, Katayoun: **THE ROADSIDE GEOLOGY SERIES AS A GEOSCIENCE EDUCATION RESOURCE**
- 16-10** 5:00 PM Parker, Audrey N.*; Bauer, Jennifer E.; Limbeck, Maggie R.: **FUN WITH FORAMINIFERA IN K-12 CLASSROOMS**
- 5:20 PM **CONCLUDING REMARKS**

AFTERNOON POSTER TECHNICAL SESSIONS

SESSION NO. 17**D6. Planetary Geology (Posters)**

1:30 PM, Knoxville Convention Center Room 301 DE/Henley Concourse

Authors will be present from 2 to 4 PM

Booth #

- 17-1** 1 Nypaver, Cole*; Thomson, Bradley J.; Burr, Devon M.; Fassett, Caleb I.: **RADAR PROPERTIES OF IMPACT EJECTA ON THE LUNAR MARIA: A MODEL FOR DEGRADATION AND AGE**
- 17-2** 2 O'Malley, Paul W.*: **PATTERN RECOGNITION FROM INLAND DUNES USING TERRAIN ANALYSIS**
- 17-3** 3 Miklusicak, N.B.*; Kronyak, R.E.; Kah, L.C.: **MINERALIZED FRACTURES IN THE SICCAR POINT GROUP, GALE CRATER, MARS**
- 17-4** 4 Gwizd, Samantha*; Fedo, Christopher M.; Grotzinger, John P.; Edgett, Kenneth; Rivera-Hernandez, Frances; Stein, Nathaniel: **GRAIN-SIZE ANALYSIS AND MICRO-SCALE FEATURES IN MARS HAND LENS IMAGER (MAHLI) IMAGES FROM THE HARTMANN'S VALLEY MEMBER, MURRAY FORMATION, GALE CRATER, MARS: LINKS TO DEPOSITIONAL ENVIRONMENT**

SESSION NO. 18**D7. Stratigraphy, Sedimentation, and Diagenesis (Posters)**

1:30 PM, Knoxville Convention Center Room 301 DE/Henley Concourse

Authors will be present from 2 to 4 PM

Booth #

- 18-1** 5 Sharpe, Dalton*; Groce-Wright, Nigel; Jovanelly, Tamie: **TOPO-STRATIGRAPHIC MAPPING OF DEVONIAN THROUGH LOWER-MIDDLE MISSISSIPPIAN FORMATIONS OF TAYLOR RIDGE (GORE, GA)**
- 18-2** 6 Thornton, Erik*; Farrell, Kathleen M.: **DATA COLLECTION AND PROCESSING METHODS FOR CHARACTERIZING THE STRATIGRAPHY OF PLEISTOCENE-DEPOSITS OF THE NORTH CAROLINA COASTAL PLAIN, FALKLAND 7.5 MINUTE QUADRANGLE**
- 18-3** 7 Savrda, Charles E.*; Foster, Carleton; DeMetz, Edward; Sandlin, Wesley: **GEOLOGIC STRIP MAP OF THE K-T BOUNDARY SECTION EXPOSED AT MOSCOW LANDING, TOMBIGBEE RIVER, SUMTER COUNTY, WESTERN ALABAMA**

- 18-4 8 Chatterjee, Sumanta Kumar*: **OCCURRENCES OF GROWTH FAULTS AND IMPLICATIONS FOR REGIONAL TRANSPORT IN THE SEMINOLE FORMATION IN NE OKLAHOMA**
- 18-5 9 Calhoun, Zachary A.*; Uddin, Ashraf: **RESERVOIR CHARACTERIZATION AND DEPOSITIONAL ENVIRONMENT ANALYSIS OF UPPER WOLF CAMP FORMATION GRAVITY FLOW LITHOFACIES IN MITCHELL COUNTY, MIDLAND BASIN, TEXAS**
- 18-6 10 Farmer, Bethany C.*; Smith, Michael S.: **PETROGRAPHIC ANALYSIS OF SEDIMENTARY INTERBEDS OF THE CATOCTIN FORMATION IN CHARLOTTESVILLE, VIRGINIA**
- 18-7 11 Neal, Donald*: **STRATIGRAPHY OF THE UPPER DEVONIAN GENESEE FORMATION, NICHOLAS COUNTY, WEST VIRGINIA**
- 18-8 12 Good, Nicoline*; Thorson, Haley; Potter, Donald B.; Knoll, Martin A.: **STRATIGRAPHY AND FACIES ANALYSIS OF THE LOWER PENNSYLVANIAN RACCOON MOUNTAIN FORMATION AT CASCADE FALLS AND COOLIE'S RIFT, SOUTHERN CUMBERLAND PLATEAU, MONTEAGLE, TENNESSEE**
- 18-9 13 Muhlbauer, Jason G.*; Fedo, Christopher M.; Moersch, Jeffrey E.: **METHOD FOR RECORDING STRATIGRAPHIC INFORMATION ACROSS COMPLEX 3D SURFACES FOR FLUVIAL ARCHITECTURAL ELEMENT ANALYSIS**
- 18-10 14 Harris, Clay D.*: **A SWASH-BUILT BEACHROCK-INFLUENCED CARBONATE BERM SYSTEM: EVIDENCE OF MICROTIDAL LOW AMPLITUDE BARS?**
- 18-11 15 Monami, Shifat*; Uddin, Ashraf: **HEAVY MINERAL CONSTRAINTS ON DETRITAL HISTORY OF THE PENNSYLVANIAN POTTSVILLE FORMATION IN THE NORTHERN APPALACHIAN BASIN, PENNSYLVANIA**
- 18-12 16 Yankech, Matthew R.*; Diemer, John A.; Eppes, Martha Cary; Bobyarchick, Andy R.: **DEPOSITIONAL ENVIRONMENTS AND TIMING OF FORMATION OF THE 'LILESVILLE GRAVELS', ANSON COUNTY, NC**
- 18-13 17 Chowns, Timothy M.; Bolding, Robert W.*; Crawford, Thomas J.; Kath, Randy L.: **BERRY LIMESTONE: AN INFORMAL FORMATION, INTRODUCED TO RATIONALIZE MISSISSIPPIAN STRATIGRAPHY IN THE FLOYD SYNCLINORIUM OF NORTHWEST GEORGIA**
- 18-14 18 Reis, Alex J.*; Seckinger, Clay; Sherman, Amanda R.; Hodelka, Bailee; Herbert, Betsy; Lyon, Eva; Zotto, Steven C.; Alamdari, Noushin Taghizadeh; Erhardt, Andrea; Ettensohn, Frank R.: **PRELIMINARY STUDY OF A MIDDLE MISSISSIPPIAN (LATE OSAGEAN, EARLY VISÉAN) FORT PAYNE CARBONATE MUD-MOUND COMPLEX, CUMBERLAND COUNTY, SOUTH-CENTRAL KENTUCKY**
- 18-15 19 Caughey, Austin Lantz*; Ortega-Ariza, Diana: **SEQUENCE STRATIGRAPHY AND DEPOSITIONAL HISTORY OF MIDDLE-MISSISSIPPIAN CARBONATES OF THE SOUTHERN APPALACHIANS, TUSCUMBIA, AL**
- 18-16 20 Lamb, William A.*; Edwards, Cole T.: **TESTING WHETHER LATE ORDOVICIAN CARBON ISOTOPE EXCURSIONS RECORD RAPID VARIATIONS IN THE GLOBAL CARBON CYCLE**
- 18-17 21 Govert, Daniel J.*; Edwards, Cole T.: **STRONTIUM ISOTOPE (⁸⁷SR/⁸⁶SR) STRATIGRAPHY OF LOWER DEVONIAN CARBONATE ROCKS FROM THE GREAT BASIN REGION: TESTING SR ISOTOPE METHODS USING CONODONT APATITE AND BULK CARBONATE**
- 18-18 22 Bell, Nicole E.*; Hoffmann, Sharon S.: **STABLE ISOTOPE ANALYSIS OF POLAR FORAMINIFERA AND SEDIMENTOLOGICAL EVIDENCE OF DEEP PALEOCURRENT EXCHANGE WITHIN FRAM STRAIT SINCE THE LAST GLACIAL MAXIMUM**
- 18-19 23 Shen, Zhixiong*; Wright, Eric; Mauz, Barbara: **A NEW INDICATOR OF MARINE ISOTOPE STAGE 3 SEA LEVEL NEAR PRESENT-DAY HEIGHT FROM THE US SOUTHERN ATLANTIC COAST**
- 18-20 24 Bechtol, Cailey*; Erhardt, Andrea M.: **CHANGES IN KENTUCKY'S LICKING RIVER EFFECT ON ISOTOPES OF FRESHWATER MUSSEL SHELLS**

SESSION NO. 19

T14. Geologic Mapping from the Appalachians to the Planets (Posters) (GSA Planetary Geology Division; GSA Quaternary Geology and Geomorphology Division; GSA Sedimentary Geology Division)

1:30 PM, Knoxville Convention Center Room 301 DE/Henley Concourse

Authors will be present from 2 to 4 PM

Booth #

- 19-1 25 Cattanach, Bart L.*; Bozdog, G. Nicholas; Isard, Sierra J.; Wooten, Richard M.: **A NEW 1:24,000-SCALE GEOLOGIC MAP OF THE SOUTHERN HALF OF THE MOUNT MITCHELL 7.5-MINUTE QUADRANGLE, YANCEY AND BUNCOMBE COUNTIES, NORTH CAROLINA**
- 19-2 26 Cattanach, Bart L.; Bozdog, G. Nicholas*; Isard, Sierra J.; Wooten, Richard M.: **A NEW 1:24,000-SCALE GEOLOGIC MAP OF THE SOUTHERN HALF OF THE SHINGLE HOLLOW 7.5-MINUTE QUADRANGLE, RUTHERFORD AND POLK COUNTIES, NORTH CAROLINA**
- 19-3 27 Lemiszki, Peter J.*; Miller, Barry W.; Antonnaci, Vince; Horton, Albert; Clendening, Ronald J.: **529 OUT OF 804 AND COUNTING: RECENT 7.5-MINUTE QUADRANGLE SCALE GEOLOGIC MAPPING BY THE TENNESSEE GEOLOGICAL SURVEY**
- 19-4 28 Tate, Garrett W.*; Sharp, Emily; Richardson, Andrea E.: **MODELING DUPLEX KINEMATICS USING NEW FIELD MAPPING IN THE MOUNTAIN CITY WINDOW, EASTERN TENNESSEE**
- 19-5 29 Borden, Rose M.*; Burr, Devon M.: **MAPPING AND ANALYSIS OF SMALL-SCALE WRINKLE RIDGES IN THE AEOLIS DORSAL REGION, MARS**
- 19-6 30 Peel, Samantha E.*; Burr, Devon M.: **MAPPING LACUSTRINE, FLUVIAL, AND AEOLIAN DEPOSITS WITHIN CRATERS IN THE AEOLIS DORSAL REGION OF MARS**
- 19-7 31 Jacobsen, Robert E.*; Burr, Devon M.: **CONSTRAINING THE RELATIVE AGES OF COMPLEXLY STRATIFIED DEPOSITS ON ANOTHER PLANET: CASE STUDY OF THE AEOLIS DORSAL, MARS**
- 19-8 32 Golder, Keenan B.*; Burr, Devon M.: **GEOMORPHOLOGICAL MAPPING OF LAVA FLOWS ON MERCURY, EARTH, AND MARS**
- 19-9 33 Suter, Patrick F.*; Gregg, Tracy K.P.: **LUNAR HIGHLANDS MEETS LUNAR MARIA: MAPPING THE PART OF THE WESTERN BOUNDARY OF OCEANUS PROCELLARUM IN LUNAR QUADRANGLE 10**
- 19-10 34 Schiff, Nicholas L.*; Gregg, Tracy K.P.: **FORMATION AND EVOLUTION OF THE SUMMIT REGION OF ALBUS MONS, MARS**
- 19-11 35 Sare, Hadarou*; Gregg, Tracy K.P.: **YEARLY CHANGES IN DUST-DEVIL TRACKS WITHIN MALEA PLANUM, MARS**

SESSION NO. 20

T18. Undergraduate Research II (Posters) (Council on Undergraduate Research Geosciences Division; GSA Quaternary Geology and Geomorphology Division)

1:30 PM, Knoxville Convention Center Room 301 DE/Henley Concourse

Authors will be present from 2 to 4 PM

Booth #

- 20-1 36 Rodewald, Beatrice M.*; Darroch, Simon A.F.; Cribb, Alison T.: **QUANTIFYING TRACE FOSSILS ON EDIACARAN-CAMBRIAN SAMPLES FROM DEATH VALLEY**
- 20-2 37 Long, Nathan T.*; Leslie, Stephen A.; Haynes, John T.; Herrmann, Achim D.: **A SANDSTONE MAPPED AS A BED IN THE ORDOVICIAN BAYS FORMATION IN BLOUNT COUNTY, TN IS REASSIGNED TO THE SILURIAN CLINCH SANDSTONE USING CONODONT BIOSTRATIGRAPHY**
- 20-3 38 Rice, Andrew*; Van Iken, Heyo: **GRAVICALYMENE CELEBRA (RAYMOND) FROM THE SILURIAN LAUREL DOLOSTONE: WHERE ARE THE PIECES?**

THURSDAY, 12 APRIL

- 20-4 39 Hall, M. Sierra*; Bulinski, Katherine V.: **DEVONIAN STROMATOPOROID ASSOCIATIONS AT THE FALLS OF THE OHIO STATE PARK, CLARKSVILLE, INDIANA**
- 20-5 40 Sadler, Kendra*; Summerlin, Tonya; Bulinski, Katherine V.: **ABUNDANCE, ORIENTATION, AND DISTRIBUTION ANALYSIS OF CORAL FOSSILS IN A DEVONIAN BIOSTROME AT THE FALLS OF THE OHIO, CLARKSVILLE INDIANA**
- 20-6 41 Robbins, John Tyler; Boyer, Diana L.*; Jackson, Rebecca L.: **TRACE FOSSIL ASSEMBLAGES OF THE LOWER PILOT SHALE, GREAT BASIN, USA**
- 20-7 42 Smith, Christopher E.*; Bauer, Jennifer E.; Sumrall, Colin D.: **GROWTH OF *PENTREMITES* AND IMPLICATIONS FOR BLASTOID ONTOGENY**
- 20-8 43 Deans, Austin Michael*; Hendrix, Amanda; Lewis, Caleb; Lucas, Spencer G.; Harrison, A. Alex; Heckert, Andrew B.: **NEW LATE CRETACEOUS (EARLY CAMPANIAN) MICROFOSSIL ASSEMBLAGE FROM THE UPPER CRETACEOUS OF NEW MEXICO**
- 20-9 44 Ratchford, Rebecca A.*; Mason, Patricia H.: **PREDATION OR SCAVENGING? TOOTH-MARKED DELPHINID VERTEBRAE FROM THE MIOCENE OF THE CALVERT CLIFFS AND LEE CREEK MINE HINT AT POSSIBLE FEEDING HABITS OF *CARCHAROCLES MEGALODON***
- 20-10 45 Sutton, Seth R.*; Shmorhun, Nina M.E.; Culver, Stephen; Mallinson, David; Farrell, Kathleen M.: **IDENTIFYING COASTAL SUBENVIRONMENTS OF BOGUE BANKS, NORTH CAROLINA USING FORAMINIFERAL ASSEMBLAGES AND GRAIN SIZE ANALYSIS**
- 20-11 46 Stone, Michael S.*; St. John, Kristen E.; Leckie, R. Mark; Leslie, Stephen A.; Baedke, Steve J.: **USING FORAMINIFERA IN STEMSEAS SITE 1 SEDIMENTS TO UNDERSTAND THE RECENT PALEOCEANOGRAPHIC AND PALEOCLIMATIC HISTORY OF TANNER BASIN, CALIFORNIA BORDERLAND**
- 20-12 47 Johnson, Michael M.*; Dobson, David M.: **PRINCIPAL COMPONENTS ANALYSIS OF MASS EXTINCTIONS USING THE PALEOBIOLOGY DATABASE**
- 20-13 48 Thompson, Grant B.*; Egerton, Victoria M.; Wogelius, Roy A.; Edwards, Nicholas P.; Manning, Phillip L.: **SYNCHROTRON-BASED IMAGING PAST LIFE**
- 20-14 49 Pledger, Jacqueline R.*; Casteel, Thomas J.; Beebe, D. Alex: **EVALUATING THE TC1 "SLINKY" SEISMOMETER AS AN ACCESSIBLE EDUCATIONAL AND RESEARCH RESOURCE AT AN UNDERGRADUATE GEOLOGY PROGRAM**
- 20-15 50 May, Michaela*; Sethi, Parvinder: **3-D MODELING OF GEOLOGICAL AND ARCHAEOLOGICAL SAMPLES FOR ONLINE AND DISTANCE LEARNING**

FRIDAY, 13 APRIL 2018

MORNING ORAL TECHNICAL SESSIONS

SESSION NO. 21

D13. Petrology, Structure, and Tectonics

8:00 AM, Knoxville Convention Center Room 300 C

Mary Elizabeth Lupo, Presiding

- 21-1 8:00 AM Lupo, Mary Elizabeth*; Tull, James F.; Repetski, John E.: **FOSSILS RECOVERED FROM ROCKS CURRENTLY ASSIGNED TO THE NEOPROTEROZOIC WALDEN CREEK GROUP IN THE EPPERSON SYNCLINORIUM OF THE APPALACHIAN WESTERN BLUE RIDGE, GEORGIA AND TENNESSEE, CALL FOR STRATIGRAPHIC REASSIGNMENT**

- 21-2 8:20 AM Bobbyarchick, Andy R.*: **STRUCTURAL CONTEXT OF MESOZOIC DIKES IN THE EASTERN BLUE RIDGE OF NORTH CAROLINA**
- 21-3 8:40 AM Lang, Katherine E.*; Bailey, Christopher M.: **TUNNEL VISION: KINEMATICS OF BRITTLE AND DUCTILE DEFORMATION IN THE HISTORIC BLUE RIDGE TUNNEL AND ROCKFISH GAP, VIRGINIA**
- 21-4 9:00 AM Valery, Catherine Anne*; Bailey, Christopher M.; Owens, Brent E.: **ECLOGITIZATION AND SHEAR ZONE KINEMATICS IN THE LOFOTEN ISLANDS, NORTHERN NORWAY**
- 21-5 9:20 AM Ashley, Aaron Wolfgang*; Bizimis, Michael; Peslier, Anne H.; Jackson, Matthew G.: **WATER SYSTEMATICS OF PERIDOTITES FROM THE SAMOA HOT SPOT**
- 21-6 9:40 AM Tacker, R.C.*; Jerden, Marissa L.: **INFRARED PETROGRAPHY OF THIN SECTIONS**
- 10:00 AM **BREAK**
- 21-7 10:20 AM Hall, Susan M.*; Breit, George N.; Zielinski, Robert A.: **MINERAL PARAGENESIS OF THE COLES HILL URANIUM DEPOSIT, PITTSYLVANIA COUNTY, VA**
- 21-8 10:40 AM Aylor, Joseph*; Beard, James S.; Bodnar, R.J.; Potter, Christopher J.; Hall, Susan M.: **VEINS, FRACTURES AND PARAGENESIS, COLES HILL URANIUM DEPOSIT, PITTSYLVANIA COUNTY, VIRGINIA**

SESSION NO. 22

T1. Seismic Hazards in the Eastern United States

8:00 AM, Knoxville Convention Center Room 300 D

Christine Powell, Chris Cramer and Martin C. Chapman, Presiding

- 22-1 8:00 AM Chapman, Martin C.*; Beale, Jacob N.: **RECENT SEISMIC MONITORING RESULTS FROM THE CENTRAL VIRGINIA SEISMIC ZONE: IMPLICATIONS FOR FAULT RUPTURE AREA - MOMENT RELATIONS**
- 22-2 8:20 AM Witt, Anne C.*; Carter, Mark W.; Heller, Matthew J.; Spears, David B.; Hancock, Gregory: **RESULTS FROM AGE-DATING AND PALEOSEISMIC TRENCHING ALONG THE LAKESIDE AND LITTLE FORK CHURCH FAULTS IN THE CENTRAL VIRGINIA SEISMIC ZONE**
- 22-3 8:40 AM Levandowski, Will; Powell, Christine*: **EARTHQUAKE STATISTICS IN THE EASTERN TENNESSEE SEISMIC ZONE ARE INCONSISTENT WITH AN AFTERSHOCK SEQUENCE**
- 22-4 9:00 AM Cramer, Chris*: **IMPACT OF IMPROVED GULF COAST SEISMIC ATTENUATION BOUNDARY AND STRESS PARAMETER ESTIMATES ON OUR UNDERSTANDING OF SEISMIC HAZARD IN THE SOUTHEASTERN U.S**
- 22-5 9:20 AM Cramer, Chris*; Van Arsdale, Roy B.; Arellano, David; Pezeshk, Shahram; Horton, Stephen P.; Weathers, Taylor; Nazemi, Nima; Jimenez, Juan; Tohidi, Hamed; Ogwen, Luke Philip: **SEISMIC AND LIQUEFACTION HAZARD MAPS FOR LAKE COUNTY, NORTHWESTERN TENNESSEE**
- 22-6 9:40 AM Myers, Carl W.*; Reid, Jeffrey C.: **UNDERGROUND SPACE RESOURCE IN GRANITIC PLUTONS AND THE CONCEPT FOR AN UNDERGROUND NUCLEAR POWER PLANT WITH COLLOCATED FACILITIES FOR LONG-TERM STORAGE AND DEEP BOREHOLE DISPOSAL OF SPENT FUEL**
- 10:00 AM **BREAK**
- 22-7 10:20 AM O'Neal, Donald W.*: **EARTHQUAKE PREDICTION BY AEROSPACE STRUCTURAL ANALYSIS**

SESSION NO. 23

T8. Geomicrobiology of Microbes and Minerals: Influence across Ecosystem Scales

8:00 AM, Knoxville Convention Center Room 301 A

Jill Mikucki and Caleb Schuler, Presiding

- 23-1 8:00 AM Wiedman, Nicholas*; Singbe, Dorothy; Childers, Daniel: **DELAWARE COUNTY COMMUNITY COLLEGE HONORS**

PROJECT: ANALYZING FLUID AND CRYSTALS IN FLUID FILLED AGATES

- 23-2** 8:20 AM Lucas, Kaitlyn A.*; Childers, Daniel: **AN ANALYSIS OF THE MINERAL, CHEMICAL, AND MICROBIAL COMPOSITION OF FLUID-FILLED AGATES**
- 23-3** 8:40 AM Dunham, J.I.*; Kah, L.C.: **SEM IMAGING OF ELUSIVE GRID-WORK TEXTURES WITHIN PROTEROZOIC EARLY DIAGENETIC CHERT**
- 23-4** 9:00 AM Manning-Berg, A.R.*; Tuite, M.L.; Williford, K.H.; Kah, L.C.: **GEOCHEMICAL CHARACTERIZATION OF 1.1 GA MICROBIAL MATS IN EARLY DIAGENETIC CHERT OF THE ANGMAT FORMATION, BYLOT SUPERGROUP NORTHERN BAFFIN ISLAND**
- 23-5** 9:20 AM VanCleave, Samantha Ashley*: **CHARACTERIZATION OF EPS PRODUCING MICROORGANISMS IN ANTARCTIC SUBGLACIAL SYSTEMS**
- 23-6** 9:40 AM Mullen, Lauren Ashley*; Shabazz, Malcolm X.; Boerrigter, Kim; Ferriero, Nicholas; Rosalsky, Jeff; Murray, Patrick James; Steen, Andrew D.: **POTENTIAL ACTIVITIES OF FRESHWATER EXO- AND ENDO-ACTING EXTRACELLULAR PEPTIDASES IN EAST TENNESSEE AND THE POCONO MOUNTAINS**
- 10:00 AM **BREAK**
- 23-7** 10:20 AM Royalty, Taylor Michael*; Steen, Andrew D.: **EVALUATING THE SENSITIVITY OF SUBSURFACE MICROBIAL METAGENOME ASSEMBLED GENOME PROPERTIES AS A FUNCTION OF METAGENOMIC SHOTGUN SEQUENCING DEPTH**
- 23-8** 10:40 AM Buongiorno, Joy*; Lloyd, Karen Grayson; Herbert, Lisa; Wehrmann, Laura; Faiia, Anthony M.; Szykiewicz, Anna: **MICROBIAL COMMUNITY DATA SUPPORTS BIOLOGICALLY MEDIATED CRYPTIC SULFUR CYCLING IN ARCTIC SEDIMENTS, VAN KEULENJORDEN, SVALBARD (79°N)**
- 23-9** 11:00 AM Jiang, Nannan*; Yan, Jun; Löffler, Frank E.: **CRITICAL IMPACTS OF VITAMINS ON THE BIOGEOCHEMICAL CYCLING AND FATE OF CHLORINATED ORGANIC COMPOUNDS**
- 23-10** 11:20 AM Schuler, Caleb G.*; Winebrenner, Dale P.; Elam, W.T.; Burnett, Justin; Boles, Bruce W.; Mikucki, Jill A.: **IN SITU CONTAMINATION OF MELT PROBES: IMPLICATIONS FOR FUTURE SUBGLACIAL MICROBIOLOGICAL SAMPLING AND ICY WORLDS LIFE DETECTION MISSIONS**

SESSION NO. 24**T11. Morphology and Evolutionary Trends (Paleontological Society)**

8:00 AM, Knoxville Convention Center Room 301 B

Bradley Deline and Maggie R. Limbeck, Presiding

- 24-1** 8:00 AM Deline, Bradley*; Sumrall, Colin D.: **ISSUES IN TAXONOMIC SCALING FOR MULTIFACETED MORPHOLOGICAL STUDIES: EXPLORING THE EVOLUTIONARY HISTORY OF ECHINODERMS**
- 24-2** 8:20 AM Bauer, Jennifer E.; Qualls, Logan M.*; Sumrall, Colin D.: **ASSESSING OLD AND NEW DATA TO DIGITALLY RECONSTRUCT MORPHOLOGY**
- 24-3** 8:40 AM Bauer, Jennifer E.*; Sumrall, Colin D.; Waters, Johnny A.: **BLASTOID (ECHINODERMATA) PHYLOGENY AND IMPLICATIONS FOR BLASTOZOAN CLASSIFICATION**
- 24-4** 9:00 AM Waters, Johnny*: **WERE BLASTOIDS (ECHINODERMATA) DISASTER TAXA OR JUST REALLY WELL ADAPTED?**
- 24-5** 9:20 AM Limbeck, Maggie R.*; Sumrall, Colin D.; Deline, Bradley: **PHYLOGENETIC AND MORPHOLOGIC ANALYSES ELUCIDATE RELATIONSHIPS IN PARACRINOIDEA (ECHINODERMATA)**
- 24-6** 9:40 AM Sprinkle, James*: **NEW MODEL FOR HOW PARACRINOIDS (ECHINODERMATA, BLASTOZOA) DEVELOPED THEIR ASYMMETRICAL, UNISERIAL AMBULACRA**

10:00 AM **BREAK**

- 24-7** 10:20 AM Lamsdell, James C.*: **EXPLORING DRIVERS OF MORPHOLOGICAL SHIFTS THROUGH PHYLOGENETIC PALEOECOLOGY**
- 24-8** 10:40 AM Knox, Larry W.*: **HETEROCHRONY (PERAMORPHOSIS, PREDISPLACEMENT) IN A HOLLINELLID OSTRACODE SPECIES FROM THE PERMO-CARBONIFEROUS OF KANSAS**
- 24-9** 11:00 AM Paterson, Audrey*; Long, Brooke L.; Lim, S. Jean; Kokesh, Broc S.; Harmon, Abigail; Anderson, Laurie C.; Campbell, Barbara J.; Engel, Annette Summers: **INTRASPECIFIC VARIABILITY OF VALVE MORPHOLOGY AND ENDOSYMBIONT DIVERSITY AMONG LUCINIDAE FROM SHALLOW MARINE HABITATS**
- 24-10** 11:20 AM Rooney, Laura*; Samuels, Joshua X.: **POSTCRANIAL MORPHOLOGY AND THE LOCOMOTOR ADAPTATIONS OF EXTANT AND EXTINCT CROCODYLOMORPHS AND LEPIDOSAURS**
- 24-11** 11:40 AM Stocker, Michelle R.*: **THE MORPHOLOGICAL EVOLUTION OF THE PHYTOSAURIA: REEVALUATING EARLY MEMBERS OF THE CLADE**

SESSION NO. 25**T19. Tectonics, Geochronology, and Thermochronology**

8:00 AM, Knoxville Convention Center Room 301 C

William A. Thomas and William T. Jackson Jr., Presiding

- 25-1** 8:00 AM Sincavage, Ryan*; Betka, Paul; Blum, Mike; Zoramthara, C.: **MIXED SIGNALS: EXPLORING VARYING CONNECTIONS BETWEEN THE MIOCENE-PLIOCENE PALEO-BRAHMAPUTRA DELTA AND THE BENGAL AND NICOBAR FANS**
- 25-2** 8:20 AM Zotto, Steven C.*; Moecher, D.P.; Samson, S.D.: **TESTING FOR SEDIMENTARY RECYCLING USING DETRITAL MONAZITE AND ZIRCON U-TH/PB AND U-TH/HE "DOUBLE-DOUBLE DATING" IN PENNSYLVANIAN SANDSTONES OF THE CENTRAL APPALACHIAN BASIN IN EASTERN KENTUCKY**
- 25-3** 8:40 AM Thomas, William A.*; Mueller, Paul A.; Osborne, W. Edward; Volk, Natalie Ann: **PROVENANCE AND SEDIMENT DISPERSAL IN THE MISSISSIPPIAN-PENNSYLVANIAN GREATER BLACK WARRIOR BASIN**
- 25-4** 9:00 AM Thompson, Jacob T.*; Johnson, Harold E.; Hames, Willis E.: **INITIAL INVESTIGATION OF DETRITAL MUSCOVITE AGES FOR THE ARKOMA-OUACHITA BASIN, WITH COMPARISON TO RESULTS FROM THE GREATER BLACK WARRIOR BASIN**
- 25-5** 9:20 AM Barbeau, David L.*; Hemming, Sidney R.: **MESOZOIC-CENOZOIC CRYSTALLIZATION AND COOLING HISTORY OF THE ANTARCTIC PENINSULA**
- 25-6** 9:40 AM McKay, Matthew P.*; Jackson, William T.; Hessler, Angela: **TECTONIC STRESS REGIME RECORDED BY ZIRCON TH/U**
- 10:00 AM **BREAK**
- 25-7** 10:20 AM Grambling, Tyler A.*; Karlstrom, Karl E.; Holland, Mark E.; Grambling, Nadine L.: **AN ISOTOPIC VIEW OF AN ANCIENT CONTINENTAL ARC SYSTEM: PAIRED ZIRCON U-PB-HF ANALYSIS OF THE YAVAPAI-MAZATZAL BOUNDARY, NEW MEXICO, USA**
- 25-8** 10:40 AM Bollen, Elizabeth M.*; Stowell, Harold H.: **GARNET SM-ND AGES FOR MULTIPLE GRAIN SIZE FRACTIONS: A TOOL FOR ESTIMATING THE DURATION OF HIGH-GRADE METAMORPHISM**
- 25-9** 11:00 AM Pullen, Alex*; Ibanez-Mejia, Mauricio; Gehrels, George E.; Ibanez-Mejia, Juan C.: **WHAT IS THE BIG DEAL WITH LARGE-N U-PB GEOCHRONOLOGY?**
- 25-10** 11:20 AM Chamberlain, Elizabeth L.*; Reimann, Tony; Wallinga, Jakob; Sincavage, Ryan: **LUMINESCENCE DATING OF**

SEDIMENTARY DEPOSITS ASSOCIATED WITH OROGENIC SETTINGS

- 25-11 11:40 AM Langille, Jackie*; Corradino, Julia; Seward, Gareth G.E.: **EVALUATING THE ROLE OF THE BURNSVILLE SHEAR ZONE IN ACADIAN DEFORMATION WITHIN THE BLUE RIDGE PROVINCE, NORTH CAROLINA, USA**

MORNING POSTER TECHNICAL SESSIONS

SESSION NO. 26**D8. Igneous Petrology, Metamorphic Petrology, and Geochemistry (Posters)**

8:00 AM, Knoxville Convention Center Room 301 DE/Henley Concourse

Authors will be present from 9 to 11 AM

Booth

- 26-1 1 Speetjens Gilley, Sara Elizabeth*; Zou, Haibo; Fan, Qi-Cheng: **OPEN-SYSTEM PROCESSES IN THE MAGMA EVOLUTION OF THE ASHI VOLCANO: EVIDENCE FROM SR ISOTOPIC COMPOSITIONS OF SINGLE-GRAIN PLAGIOCLASE**
- 26-2 2 Rodemer, Franklin E.*; Smith, Michael S.: **APPLICATION OF PXRF TO RAPIDLY IDENTIFY METASOMATIC EFFECTS: AN EXAMPLE FROM THE NEOPROTEROZOIC CATOCTIN FORMATION IN CENTRAL VIRGINIA**
- 26-3 3 Ray, Daniel*; Owens, Brent E.: **THE ORIGIN AND SIGNIFICANCE OF A LARGE MAFIC GNEISS XENOLITH IN THE PETERSBURG GRANITE, PIEDMONT PROVINCE, VIRGINIA**
- 26-4 4 Owens, Brent E.*: **THE DOVER CREEK SYENITE: A NEWLY RECOGNIZED NEOPROTEROZOIC PLUTON WITHIN THE MESOPROTEROZOIC STATE FARM GNEISS, GOOCHLAND, TERRANE, VIRGINIA**
- 26-5 5 Griffin, Kayla M.*; Hames, Willis E.: **RAPID AND DIACHRONOUS COOLING OF THE RUBY MOUNTAINS METAMORPHIC CORE COMPLEX THAT PREDATED THE YELLOWSTONE HOTSPOT**
- 26-6 6 Rogers, Ryan L.*; Yelverton, James W.; Stowell, Harold H.; Bollen, Elizabeth M.; McFarlane, Christopher R.M.: **GARNET SM-ND AGE CONSTRAINTS ON GRANULITE METAMORPHISM IN THE LOWER CRUST OF THE FIORDLAND MAGMATIC ARC, NEW ZEALAND**

SESSION NO. 27**D9. Geomorphology (Posters)**

8:00 AM, Knoxville Convention Center Room 301 DE/Henley Concourse

Authors will be present from 9 to 11 AM

Booth

- 27-1 7 Farrell, Kathleen M.*; Thornton, Erik: **USING HIGH-RESOLUTION LIDAR FOR GEOMORPHIC AND STRATIGRAPHIC MAPPING OF THE COASTAL PLAIN AT A SCALE OF 1:8000, SURRY PALEOSHORELINE COMPLEX, NORTH CAROLINA**
- 27-2 8 Doar, William R.*; Luciano, Katherine; Czwartacki, Brooke J.: **MAPPING MARSH SURFACE ELEVATION CHANGE RESULTING FROM HURRICANE IRMA IN SOUTH CAROLINA**
- 27-3 9 Sonsteng, Anthony K.*; Taylor, Kenneth J.; Seminack, Christopher T.; Sun, Yu: **AN ANALYSIS OF THE VOLUMETRIC GROWTH RATE OF THE SOUTHERN RECURVED-SPIT COMPLEX OF ASSATEAGUE ISLAND, VA FROM 1852 TO 2017**
- 27-4 10 Phillip, Ryan Eli*; Shen, Zhixiong; Wright, Eric; Mauz, Barbara: **RELATIONSHIP BETWEEN HOLOCENE SPIT EVOLUTION AND STORM ACTIVITY ON A CENTENNIAL TIMESCALE IN DELAWARE, USA**
- 27-5 11 Luciano, Katherine*; Tweel, Andrew; Harris, M. Scott; Hughes, Matthew; Howard, Scott; Sanger, Denise: **MAPPING SURFICIAL SAND SHOALS ON SOUTH CAROLINA'S OUTER CONTINENTAL SHELF: RELATIONSHIPS BETWEEN STRATIGRAPHY, BATHYMETRY, AND SAND DEPOSITION**

- 27-6 12 Chowns, Timothy M.*; Edwards, Brad M.; Harris, Felicia R.; Renner, James F.: **WAS ST. ANDREWS SOUND BETWEEN JEKYLL AND CUMBERLAND ISLANDS, GEORGIA, A FORMER MOUTH OF THE ALTAMAHA RIVER?**

SESSION NO. 28**S1. Longstanding Problems and New Ideas About the Structure and Tectonic Evolution of the Southern Appalachians and Other Mountain Belts: In Honor of the Career of Robert D. Hatcher Jr. (Posters)**

8:00 AM, Knoxville Convention Center Room 301 DE/Henley Concourse

Authors will be present from 9 to 11 AM

Booth

- 28-1 13 Schultz, Art*; Webb, Fred; Parker, Mercer: **FENSTER, KLIPPE, LANDSLIDE, GRABEN, SINKHOLE: WHAT HAPPENED AT BLAND, VIRGINIA?**
- 28-2 14 Dickson, Hannah*; Bollen, Elizabeth M.; Stowell, Harold H.: **NEW GARNET SM-ND AGE FOR GARNET ZONE METAMORPHISM IN THE WESTERN BLUE RIDGE, DUCKTOWN, TN**
- 28-3 15 Merschat, Arthur*; Southworth, Scott; Rankin, Douglas W.; Tollo, Richard P.; Aleinikoff, John N.; Holm-Denoma, Christopher S.; McAleer, Ryan J.: **PRELIMINARY GEOLOGIC MAP OF THE MOUNT ROGERS AREA, VA-NC-TN**
- 28-4 16 McClellan, Elizabeth*: **RAPID PROGRESSION FROM INTRACONTINENTAL VOLCANISM TO GLACIATION: EVIDENCE FROM NEOPROTEROZOIC STRATA IN THE BLUE RIDGE OF SW VA**
- 28-5 17 BeDell, Tristan*; Herrera Ventura, Albert; Levine, Jamie S.F.; Casale, Gabriele: **FIELD AND THERMOCHRONOMETRIC CONSTRAINTS ON MOTION ALONG THE FRIES AND GOSSAN LEAD FAULTS, NEAR BOONE NC**
- 28-6 18 Powell, Nicholas E.*; Levine, Jamie S.F.; Casale, Gabriele; Martin, Claire P.: **MICROSTRUCTURAL IMPLICATIONS ON CONDITIONS OF DOMING IN THE TOXAWAY DOME, EASTERN BLUE RIDGE**
- 28-7 19 Barineau, Clinton I.*; Gilbert, David J.; Roop-Eckart, Kenneth J.; Agrawal, Sarang: **REGIONAL STRAIN IN THE EASTERN BLUE RIDGE OF ALABAMA: IMPLICATIONS FOR INTERPRETATION OF THE ALEXANDER CITY FAULT**
- 28-8 20 Garihan, J.M.*: **GRAVITATIONAL COLLAPSE OF THE WESTERN INNER PIEDMONT DUCTILE THRUST STACK, SOUTH CAROLINA AND ADJACENT NORTH CAROLINA**
- 28-9 21 Garihan, J.M.*: **AN ALLEGHANIAN (?) BRITTLE THRUST AND ASSOCIATED HINTERLAND-DIRECTED BACK-THRUST SYSTEM IN THE WESTERN INNER PIEDMONT OF SOUTH CAROLINA AND ADJACENT NORTH CAROLINA**
- 28-10 22 Rice, Aaron K.*; Blake, David E.; Peach, Brandon T.; Finnerty, Patrick; Nolan, Jack T.; Morrow, Robert H.: **ORIGINS OF THE RALEIGH TERRANE: NEW LITHOLOGIC AND STRUCTURAL INSIGHTS TO AN OLD PROBLEM**
- 28-11 23 Sexton, Jubal*: **U-PB DETRITAL ZIRCON GEOCHRONOLOGY OF THE CAROLINA TERRANE IN CENTRAL SOUTH CAROLINA**
- 28-12 24 Bradley, Philip J.*; Peach, Brandon T.; Hanna, Heather D.: **THE SILER CITY HORST AND GRABEN NETWORK IN THE CAROLINA TERRANE, CHATHAM COUNTY, NORTH CAROLINA**
- 28-13 25 Peach, Brandon T.*; Bradley, Philip J.; Hanna, Heather D.: **THE NATURE OF THE HYCO AND AARON FORMATIONS CONTACT WITHIN THE CAROLINA TERRANE IN CHATHAM COUNTY, NORTH CAROLINA – INSIGHTS FROM DETAILED GEOLOGIC MAPPING**
- 28-14 26 Holm-Denoma, Christopher S.; Carter, Mark W.*; Owens, Brent E.: **PROVENANCE OF THE CRETACEOUS POTOMAC GROUP FROM DETRITAL ZIRCON ANALYSIS, CENTRAL-EASTERN VIRGINIA**
- 28-15 27 Grambling, Tyler A.*; Jessup, Micah; Hughes, Cameron; Newell, Dennis L.; Shaw, Colin A.: **EXAMINING STRAIN GRADIENTS ALONG A MYLONITIC EXTENSIONAL DETACHMENT FAULT: MICROSTRUCTURAL ANALYSIS OF THE CORDILLERA BLANCA DETACHMENT, NORTHERN PERU**

SESSION NO. 29

T18. Undergraduate Research III (Posters) (Council on Undergraduate Research Geosciences Division; GSA Quaternary Geology and Geomorphology Division)

8:00 AM, Knoxville Convention Center Room 301 DE/Henley Concourse

Authors will be present from 9 to 11 AM

Booth #

- 29-1 28 French, Joseph*; Ripple, Brandon; Mitchell, Garrett; Jackson, William T.: **THIN SECTION ANALYSIS OF THE LOWER CAMBRIAN ROME FORMATION IN ALABAMA AND GEORGIA: INVESTIGATING SEDIMENT SOURCE TERRANES DURING RODINIA RIFT-TO-DRIFT EVOLUTION**
- 29-2 29 Leesburg, J.N.*; Larson, E.B.; Sumrall, J.B.: **PETROGRAPHIC ANALYSIS OF THE BUSH BAY FORMATION, ENGADINE GROUP, HIAWATHA NATIONAL FOREST, UPPER PENINSULA, MI**
- 29-3 30 Childers, Hunter*; Farmer, Samantha; Sethi, Parvinder; Stephenson, George C.: **PALEOENVIRONMENTAL RECONSTRUCTION OF A SHALLOWING-UPWARD, MARINE SHALE SEQUENCE IN SOUTHWESTERN VIRGINIA: CASE OF THE DEVONIAN MILLBORO SHALE**
- 29-4 31 Yates, Zach*; Childers, Hunter; Sethi, Parvinder; Stephenson, George C.: **PYRITE MINERALIZATION IN DEVONIAN-AGE BLACK SHALE IN SOUTHWEST VIRGINIA: IMPLICATIONS FOR ACID DRAINAGE AND PALEOENVIRONMENTAL RECONSTRUCTION**
- 29-5 32 Farmer, Samantha*; Childers, Hunter; Sethi, Parvinder; Stephenson, George C.; Coté, Gary: **SCANNING ELECTRON MICROSCOPY OF DEVONIAN MILLBORO BLACK SHALE AND IMPLICATIONS FOR GROUNDWATER POLLUTION AND PALEOENVIRONMENTAL RECONSTRUCTION**
- 29-6 33 Watson, Zachary A.*; Winkle, Garrett T.; Blaylock, Hannah E.; Knox, Larry W.; Wolak, Jeannette M.: **PETROPHYSICAL CHARACTERIZATION OF THE CONTACT BETWEEN THE FORT PAYNE FORMATION AND THE CHATTANOOGA SHALE**
- 29-7 34 Adams, Alexandria L.*; Palmore, C. Dianne; Haywick, Douglas W.; King, David T.: **SPHERULITE ALTERATION IN TERMINAL CRETACEOUS CALCARENITES IN ALABAMA**
- 29-8 35 Richardson, Loren*; Whiteman, John; Ruefer, Anna; Hojnacki, Victoria; Gosselin, Greg; Colip, Grant; St. John, Kristen: **A MULTI-PROXY INTERPRETATION OF MARINE SEDIMENT LITHOLOGY ON THE TEXAS-LOUISIANA SLOPE IN THE GULF OF MEXICO AS EVIDENCE FOR DEGLACIATION OF THE LAURENTIDE ICE SHEET**
- 29-9 36 Colip, Grant*; Gosselin, Greg; Hojnacki, Victoria; Richardson, Loren; Ruefer, Anna; Whiteman, John; Matthews, David; St. John, Kristen: **A MULTI-PROXY ANALYSIS OF NORTHERN PACIFIC STEMSEAS SEDIMENT CORE LITHOLOGY AND PERMEABILITY**
- 29-10 37 Sumpter, Mathew*; Shen, Zhixiong: **IS LASER DIFFRACTION GRAIN-SIZE ANALYSIS ON MULTIMODAL DEPOSITS ACCURATE?**
- 29-11 38 Freyermuth, Mitchell*; Romanek, Christopher S.: **PHYSICO-CHEMICAL CONTROLS ON THE MG-CONTENT OF CALCITE PRECIPITATED FROM DILUTE SOLUTIONS**
- 29-12 39 Parker, Sheena M.*; Colburn, Ross E.; Beebe, D. Alex: **INVESTIGATING SUBMARINE GROUNDWATER DISCHARGE AND SUBTERRANEAN FLOW PATHS IN A COASTAL LAGOON USING FIELD PERMEAMETER AND LIGHT-OIL PIEZOMANOMETER OBSERVATIONS**
- 29-13 40 O'Neill, Lainey N.*; Vyverberg, Karen L.; Dutton, Andrea; Eberli, Gregor P.: **THE FLORIDA KEYS PALEO-REEF TRACT: CONSTRAINING REEF EVOLUTION AND THE RELATIVE SEA-LEVEL HISTORY DURING THE LAST INTERGLACIAL**
- 29-14 41 Moore Torres, Jessie C.*; Martin, Anthony J.; Page, Michael: **SHIFTING SHORELINES ON WOLF AND EGG ISLANDS, GEORGIA, USA: A STUDY OF CHANGE SINCE 1953**
- 29-15 42 Hendricks, Jessica Kendall*; Richter, Lea; Hughes, Matthew; Luciano, Katherine; Harris, M. Scott: **GRAINSIZE ANALYSIS OF SURFICIAL AND SUB-SURFACE PLEISTOCENE SEDIMENTS**

OF THE OUTER CONTINENTAL SHELF ALONG THE SOUTH EASTERN UNITED STATES

- 29-16 43 Weaver, Hannah G.*; Hale, Rip P.: **DETERMINING THE CAUSES AND THRESHOLD OF SEDIMENT RESUSPENSION IN THE LAFAYETTE RIVER**
- 29-17 44 Hibberts, Stephanie J.*; Lazar, Kelly Best; Moysey, Stephen M.: **SEDIMENTOLOGICAL AND FORAMINIFERAL EVIDENCE OF POTENTIAL PALEOSTORM ACTIVITY ON DOMINICA, LESSER ANTILLES**

AFTERNOON ORAL TECHNICAL SESSIONS

SESSION NO. 30

D12. Paleontological Potpourri

1:30 PM, Knoxville Convention Center Room 301 B

Selina R. Cole and Timothy Paton, Presiding

- 30-1 1:30 PM Cribb, Alison T.*; Kenchington, Charlotte G.; Darroch, Simon A.F.: **TERMINAL NEOPROTEROZOIC BIOTURBATION AND IMPLICATIONS FOR THE EXTINCTION OF THE EDIACARA BIOTA**
- 30-2 1:50 PM Gibson, Brandt M.*; Rahman, Imran A.; Maloney, Katie; Racicot, Rachel; Laflamme, Marc; Darroch, Simon A.F.: **SUSPENSION FEEDING IN THE GREGARIOUS EDIACARAN ORGANISM ERNIETTA PLATEAUENSIS**
- 30-3 2:10 PM Parsley, Ronald*; Sumrall, Colin; Zhao, Yuanlong: **A CAMBRIAN ODYSSEY: GOGIID (EOCRINOIDEA; ECHINODERMATA) DISPERSAL IN CAMBRIAN STAGES 4 AND 5 BETWEEN SOUTH CHINA AND WESTERN LAURENTIA**
- 30-4 2:30 PM Paton, Timothy*; Sumrall, Colin D.: **TWO NEW RARE ORDOVICIAN ECHINODERMS FROM CENTRAL TENNESSEE**
- 30-5 2:50 PM Cole, Selina R.*; Wright, David F.: **A NORTHERN PALEOLATITUDE ECHINODERM FAUNA FROM THE MISSISSIPPIAN LISBURNE GROUP OF ARCTIC ALASKA: PRELIMINARY PALEONTOLOGIC AND STRATIGRAPHIC CHARACTERIZATION**
- 30-6 3:10 PM Harris, Ann W.*; Etensohn, Frank R.; Carnahan-Jarvis, Jill: **A STATISTICAL APPROACH TO UNDERSTANDING DIVERSITY IN AN UPPER MISSISSIPPIAN (CHESTERIAN) ECHINODERM-RICH UNIT ACROSS FOUR CONTIGUOUS LITHOFACIES, CARTER COUNTY, NORTHEASTERN KENTUCKY**
- 30-7 3:30 PM Schubert, Blaine W.*; Widga, Christopher C.; Mead, Jim; Compton, Brian; Gunnin, R. Davis: **100 YEARS OF PALEONTOLOGICAL INVESTIGATIONS AT SALTVILLE, VIRGINIA**
- 30-8 3:50 PM Samuels, Joshua Xavier*; Zakrzewski, Richard J.; Bredehoeft, Keila E.; Crowe, Cheyenne; Oberg, Danielle; Schap, Julia; Schubert, Blaine W.; Wallace, Steven C.; Widga, Christopher C.: **NEW MAMMALS FROM THE GRAY FOSSIL SITE IN TENNESSEE; PALEOECOLOGICAL IMPLICATIONS AND A REFINED AGE ESTIMATE FOR THE SITE**
- 30-9 4:10 PM Jones, Michael L.*; Widga, Chris: **A SEDIMENTOLOGICAL CASE FOR ALLIGATOR GASTROLITHS AT THE GRAY FOSSIL SITE, EAST TENNESSEE**
- 30-10 4:30 PM Drumheller, Stephanie K.*; Adams, Thomas; Noto, Christopher: **FLESHING OUT A LOST WORLD: MID-CRETACEOUS DIVERSITY IN APPALACHIA WITH INSIGHTS FROM THE ARLINGTON ARCHOSAUR SITE**
- 30-11 4:50 PM Biedron, Eva M.*; DeSantis, Larisa R.G.: **ASSESSING HOW POSSUMS RECORD THEIR LOCAL DIET AND ENVIRONMENT VIA STABLE ISOTOPES AND DENTAL**

MICROWEAR TEXTURES WITH IMPLICATIONS FOR PALEOECOLOGICAL ANALYSES

30-12 5:10 PM Anderson, Peter M.*: **CRANIAL EVOLUTION OF COMMON RACCOON (PROCYON LOTOR) IN THE ANTHROPOCENE**

SESSION NO. 31

T2. Recent Advances in Our Understanding of The Crust and Upper Mantle in the Southeastern United States

1:30 PM, Knoxville Convention Center Room 301 C

Robert B. Hawman and James H. Knapp, Presiding

31-1 1:30 PM Powell, Christine A.*; Thomas, William A.; Hatcher, Robert D.: **THE WESTERN LIMIT OF MAJOR EXTENSION ASSOCIATED WITH THE IAPETAN RIFTED MARGIN IN THE SOUTHERN AND CENTRAL APPALACHIANS**

31-2 1:50 PM Knapp, James H.*; Herman, David J.; Boote, Susannah K.; Hibbard, James: **IN SEARCH OF THE ALLEGHANIAN SUTURE**

31-3 2:10 PM Herman, David J.*; Knapp, James H.: **THE CAROLINA-MISSISSIPPI FAULT: LATE-ALLEGHANIAN TRANSCURRENT FAULT?**

31-4 2:30 PM Ma, Chong*; Hames, Willis E.; Foster, David A.; Mueller, Paul A.; Lin, Qianying: **EVIDENCE FOR POST-ALLEGHANIAN BASIN AND RANGE STYLE EXTENSION IN THE SOUTHERN APPALACHIAN OROGEN**

31-5 2:50 PM Duff, Patrick D.*; Kellogg, James N.: **THE NATURE AND DISTRIBUTION OF CAMP MAGMATISM ALONG THE SOUTHEASTERN NORTH AMERICAN MARGIN FROM INTEGRATED ANALYSES OF POTENTIAL FIELD DATA**

3:10 PM **BREAK**

31-6 3:30 PM Marzen, Rachel E.*; Shillington, Donna J.; Lizaralde, Dan; Harder, Steven: **EVIDENCE FOR TERRANE ACCRETION, LOCALIZED RIFTING AND MAGMATISM FROM THE CRUSTAL VELOCITY STRUCTURE OF THE SOUTHEASTERN UNITED STATES**

31-7 3:50 PM Verellen, Devon N.; Alberts, Erik C.; Parker, E. Horry; Hawman, Robert B.*: **P-WAVE REFLECTIVITY OF THE SOUTHERN APPALACHIAN LITHOSPHERE: USING GLOBAL PHASES TO MAP VARIATIONS IN SEISMIC FABRIC WITHIN THE UPPERMOST MANTLE**

31-8 4:10 PM Abolins, Mark*; Bush, Rachel; Han, Amber; Ogden, Albert: **INFERRED REACTIVATION OF BASEMENT STRUCTURES WITHIN THE NASHVILLE DOME, CENTRAL TENNESSEE**

31-9 4:30 PM Dygert, Nicholas J.*; Bernard, Rachel E.; Behr, Whitney M.: **MANTLE XENOLITHS RECORD DEFORMATION ASSOCIATED WITH ACTIVE LITHOSPHERIC DOWNWELLING BENEATH CENTRAL NEVADA**

31-10 4:50 PM Hill, Jesse S.*; Stewart, Kevin G.; Biryol, Berk C.: **YOUNG TOPOGRAPHY, NEW FAULTS, AND MANTLE REORGANIZATION IN AN ANCIENT MOUNTAIN RANGE: A CASE STUDY FROM THE APPALACHIANS**

5:10 PM **DISCUSSION**

SESSION NO. 32

T3. Geomorphic Anomalies and Underlying Geologic Controls Identified from Surficial and Bedrock Mapping, Southeastern United States (GSA Quaternary Geology and Geomorphology Division)

1:30 PM, Knoxville Convention Center Room 300 D

Kathleen M. Farrell and Christopher S. Swezey, Presiding

32-1 1:30 PM Southworth, Scott*: **GEOMORPHIC FEATURES AND PROCESSES ACROSS THE CENTRAL AND SOUTHERN APPALACHIANS**

32-2 1:50 PM Wooten, Richard M.*; Cattanaach, Bart L.; Isard, Sierra J.; Bozdog, G. Nicholas: **BEDROCK CONTROLS ON QUATERNARY DEBRIS DEPOSIT MORPHOLOGY, COMPOSITION AND PROCESSES: SWANNANOA MOUNTAINS, OTEEN AND BLACK MOUNTAIN**

QUADRANGLES, BUNCOMBE COUNTY, NORTH CAROLINA

32-3 2:10 PM Doctor, Daniel H.*; McAleer, Ryan J.; Carmichael, Sarah K.; Kunk, Michael J.: **⁴⁰AR/³⁹AR AGES OF MANGANESE OXIDE ORES IN SURFICIAL AND BEDROCK DEPOSITS OF THE CENTRAL APPALACHIAN MOUNTAINS**

32-4 2:30 PM Martin, Steven L.*: **MAPPING PREGLACIAL FLUVIAL LANDFORMS AND DEPOSITS IN NORTHERN KENTUCKY — PRELIMINARY RESULTS**

32-5 2:50 PM Boling, Kenneth S.*; Hatcher, Robert D.; Bible, Gary G.; Lemiszki, Peter J.; Wunderlich, Andrew L.: **INITIAL ASSESSMENT OF THE PRE-CHATTANOOGA TECTONIC HISTORY ALONG THE SOUTHERN CINCINNATI ARCH USING AUTOMATED GIS TOOLS**

3:10 PM **BREAK**

32-6 3:30 PM Occhi, Marcie*; Blanchette, Jessica S.; Berquist, C.R.: **BEDROCK CONTROL ON MARINE SEDIMENT DEPOSITION AND PRESERVATION IN THE EASTERNMOST PIEDMONT: RESULTS FROM 1:24,000-SCALE GEOLOGIC MAPPING IN THE PETERSBURG, VA AREA**

32-7 3:50 PM Tormey, Blair R.*; Hearty, Paul J.; Donovan, Bailey G.: **SUPERSTORM DEPOSITS IN THE BAHAMAS; A RECORD OF CLIMATE INSTABILITY FROM ELEUTHERA ISLAND DURING THE EARLY PEAK LAST INTERGLACIAL (MIS 5E)**

32-8 4:10 PM Vance, R. Kelly*; Reichard, James S.; Meyer, Brian K.; Kelly, Jacque L.; Rich, Frederick J.: **GEOMORPHIC EXPRESSION OF SUBSURFACE STRUCTURE AND STRATIGRAPHY ON ST. CATHERINES ISLAND, GEORGIA**

32-9 4:30 PM Farrell, Kathleen M.*: **USING HIGH-RESOLUTION LIDAR TO IDENTIFY ANOMALOUS GEOMORPHIC FEATURES THAT SUPPORT ALTERNATIVE GEOMORPHIC MODELS FOR DYNAMIC COASTAL PLAIN EVOLUTION, NORTH CAROLINA**

32-10 4:50 PM Davias, Michael*; Harris, Thomas H.S.: **AND YET THEY PERSIST; LIDAR BARE-EARTH DEMS ELUCIDATE CAROLINA BAY RIMS AS PALIMPSEST FEATURES CONTROLLING THEIR TOPOGRAPHIC EXPRESSION THROUGH DIFFERENTIAL WEATHERING AND EROSION**

32-11 5:10 PM Swezey, Christopher S.*: **CAROLINA BAYS OF THE U.S. ATLANTIC COASTAL PLAIN ARE RELICT THERMOKARST LAKES THAT FORMED EPISODICALLY DURING THE LAST GLACIATION**

SESSION NO. 33

T10. Biogeochemical Cycling and Microbial Dynamics in Response to Pulse Events (GSA Sedimentary Geology Division)

1:30 PM, Knoxville Convention Center Room 301 A

Sean M. Schaeffer and Jennifer M. DeBruyn, Presiding

1:30 PM **INTRODUCTORY REMARKS**

33-1 1:35 PM Philben, Michael*; Zheng, Jianqiu; Graham, David; Bill, Markus; Heikoop, Jeff; Wulfschleger, Stan; Gu, Baohua: **STIMULATION OF ANAEROBIC ORGANIC MATTER DEGRADATION BY NITROGEN ADDITION IN TUNDRA SOILS**

33-2 1:55 PM Schaeffer, Sean M.*: **COUPLED ECOSYSTEM CARBON AND NUTRIENT CYCLING IN A HIGH ARCTIC ECOSYSTEM ARE ALTERED BY WARMING AND HIGHER RAINFALL**

33-3 2:15 PM Singh, Shikha*; Jagadamma, Sindhu; Liang, Junyi; Wang, Gangsheng; Mayes, Melanie: **SENSITIVITY OF MICROBIAL PROCESSING OF SOIL CARBON TO SOIL MOISTURE IN DIFFERENTLY-TEXTURED SOILS**

33-4 2:35 PM Li, Lidong*; Schaeffer, Sean M.: **CONSERVATION AGRICULTURAL MANAGEMENT PRACTICES OFFSET THE LOSS OF ¹³C-LABELED GLUCOSE IN SOIL UNDER MOISTURE PULSE EVENTS**

2:55 PM **BREAK**

- 33-5** 3:15 PM Keenan, Sarah W.*; DeBruyn, Jennifer M.: **TEMPERATURE AND MICROBIAL EFFECTS ON NITROGEN CYCLING AT SIMULATED MORTALITY DECOMPOSITION HOTSPOTS**
- 33-6** 3:35 PM Quinn, Ryan K.*; Phillips, Jana; Brenner, Julia; Lopez, Carla L.; Mayes, Melanie: **THE RESPONSE OF GREENHOUSE GAS EMISSIONS TO PULSE CHANGES IN MOISTURE CONTENT IN TROPICAL RAINFOREST SOILS**
- 33-7** 3:55 PM Song, Yang*; Mayes, Melanie; Yao, Qiuming; Wang, Gangsheng; Yang, Xiaojuan: **REGULATION OF MICROBIAL ACTIVITY AND SOIL ORGANIC MATTER DECOMPOSITION IN RESPONSE TO RESOURCES AVAILABILITY BY OPTIMIZING ENZYME ALLOCATION: AN OMICS-INFORMED MODEL STUDY**
- 4:15 PM DISCUSSION

AFTERNOON POSTER TECHNICAL SESSIONS

SESSION NO. 34

D10. Economic Geology (Posters)

1:30 PM, Knoxville Convention Center Room 301 DE/Henley Concourse

Authors will be present from 2 to 4 PM

Booth #

- 34-1** 1 Lord, William*; Fornash, Katherine; Shaver, Stephen A.: **PETROGRAPHY OF REPLACEMENT MINERALS IN THE HORSESHOE DEPOSIT, HAILE GOLD MINE, LANCASTER, SOUTH CAROLINA**
- 34-2** 2 Reid, Jeffrey C.*; Moye, Robert J.; Lee, David F.: **SILVER SHAFT MINE VMS MINERALIZATION AND HYDROTHERMAL ALTERATION: PETROGRAPHIC EXAMPLES FROM CORE HOLE PDSS-3, ROWAN AND CABARRUS COUNTIES, NORTH CAROLINA**
- 34-3** 3 Kyle, J. Richard*; Garcia, Raeann; Miller, Nathan R.: **SOLUTION-COLLAPSE BRECCIA DEVELOPMENT AND PORE-FILLING, LOWER ORDOVICIAN KNOX GROUP, TENNESSEE-KENTUCKY**
- 34-4** 4 Epperson, Erin E.*; Elliott, W. Crawford: **OCCURRENCE OF THE LANTHANIDE RARE EARTH ELEMENTS IN THE GEORGIA KAOLINS AND HEAVY MINERAL SANDS**
- 34-5** 5 Worthington, Eleanor Nucup*; Ramsey, Kelvin W.; Berquist, C.R.; Owens, Brent E.: **EVALUATION OF OFFSHORE HEAVY MINERAL RESOURCES OF SOUTHERN DELAWARE**

SESSION NO. 35

D11. Engineering Geology (Posters)

1:30 PM, Knoxville Convention Center Room 301 DE/Henley Concourse

Authors will be present from 2 to 4 PM

Booth #

- 35-1** 6 McConnell, Nicholas Ray*; Luffman, Ingrid; Nandi, Arpita: **TIME-LAPSE MONITORING OF SIDEWALL MASS-WASTING EVENTS IN A NORTHEAST TENNESSEE GULLY**
- 35-2** 7 Ford, Joshua Alexander*; Van Iten, Heyo: **SLOPE PROCESSES AND GEOLOGICAL HAZARDS IN THE OHIO RIVER VALLEY NEAR HANOVER, JEFFERSON COUNTY, INDIANA**
- 35-3** 8 Springer, Hannah H.; Hossain, Azad A.K.M.*: **DEVELOPING A MODEL TO MAP THE POTENTIAL AREAS FOR LANDSLIDE HAZARDS IN HAMILTON COUNTY, TN USING GIS AND REMOTE SENSING**
- 35-4** 9 Roenker, Benjamin Thomas*; Olson, Roger; Faller, Tim; Ivey, Zack; Johnson, Sarah; Wang, Hongmei: **USING SEQUENTIAL LIDAR DATA TO IDENTIFY AND MONITOR LANDSLIDES IN KENTON AND CAMPBELL COUNTIES IN NORTHERN KY**
- 35-5** 10 Das, Raja*; Nandi, Arpita: **APPLICATION OF DATA DRIVEN AND KNOWLEDGE DRIVEN METHODS FOR LANDSLIDE SUSCEPTIBILITY MAPPING**

- 35-6** 11 Dudek, Marissa J.*; Ligush, John Paul; Hogg, Colin; Admassu, Yonathan: **USING POINT CLOUDS TO EVALUATE SLOPE PERFORMANCE WITH RESPECT TO ROCKFALL GENERATION**
- 35-7** 12 Liu, Chunyu*: **1-D SEDIMENT VELOCITY STRUCTURE IN THE MISSISSIPPI EMBAYMENT: CONSTRAINT FROM AMBIENT NOISE ANALYSIS ON A DENSE ARRAY**
- 35-8** 13 Alam, Md*: **DATA VOLUME VS MODEL RESOLUTION IN NEAR-SURFACE MODELING USING FULL WAVEFORM INVERSION**
- 35-9** 14 Land, Timothy Warren*; Joyner, Andrew T.; Nandi, A.; Whitelaw, Michael J.: **FM RADIO SIGNAL STRENGTH MODELING AND PREDICTION IN BLUE RIDGE AND VALLEY & RIDGE PHYSIOGRAPHIC PROVINCES, U.S.A**

SESSION NO. 36

D12. Paleontological Potpourri (Posters)

1:30 PM, Knoxville Convention Center Room 301 DE/Henley Concourse

Authors will be present from 2 to 4 PM

Booth #

- 36-1** 15 Lynn, Ashley Sara*; Shmorhun, Nina M.E.; Culver, Stephen J.; Mallinson, David J.; Farrell, Kathleen M.: **FORAMINIFERAL ASSEMBLAGES OF THE SHOREFACE AND INNER SHELF OFF BOGUE BANKS, NORTH CAROLINA**
- 36-2** 16 Duke, Hope J.*; Thompson, Carmi Milagros; Lockwood, Rowan; Ramsey, Kelvin W.: **GEOGRAPHIC AND SUBSTRATE DISTRIBUTION OF HOLOCENE MOLLUSKS IN MID-ATLANTIC OFFSHORE DEPOSITS (U.S.A.)**
- 36-3** 17 Foster, Carleton*; Savrda, Charles E.; DeMetz, Edward; Sandlin, Wesley: **CHARACTER AND ORIGIN OF LARGE CRUSTACEAN BURROW SYSTEMS IN PALEOCENE MARINE SHELF DEPOSITS, CLAYTON FORMATION, WESTERN ALABAMA**
- 36-4** 18 Tennakoon, Shamindri D.*; Portell, Roger W.; Kowalewski, Michał; Petsios, Elizabeth; Tyler, Carrie L.: **CARNIVOROUS CASSIDS (MOLLUSCA: GASTROPODA) FROM THE UPPER EOCENE OCALA LIMESTONE OF FLORIDA**
- 36-5** 19 Karnes, Molly E.*; Roberson, R. Philip; Casey, Michelle M.: **DRILLING PREDATION IN THE BIVALVE GENUS *ASTARTE* FROM THE PLIOCENE OF THE ATLANTIC COASTAL PLAIN**
- 36-6** 20 Knox, Larry W.*; Hillis, Kayla R.: **RELATIVELY INEXPENSIVE HIGH-RESOLUTION COMPUTED TOMOGRAPHY OF A PERMIAN OSTRACODE SPECIES**
- 36-7** 21 Harris, Felicia F.*; Alley, Heather N.; Deline, Bradley: **IDENTIFICATION AND IMPLICATIONS OF A COLONIAL RUGOSE CORAL IN THE LATE ORDOVICIAN KOPE FORMATION**
- 36-8** 22 Hanson, Kathryn E.*; Lester, Rachel; Deline, Bradley: **THE CONTRIBUTION OF CRINOID SUBCLASSES TO ECHINODERM DISPARITY DURING THE ORDOVICIAN RADIATION**
- 36-9** 23 Herbert, Betsy*; Etensohn, F.R.: **WHAT IS *EDRIOCRINUS*?**
- 36-10** 24 Simpson, Emily M.B.*: **ESTIMATING TEMPERATURE AT GRAY FOSSIL SITE FROM THE PALEOBOTANICAL RECORD**
- 36-11** 25 Gunnin, R. Davis*; Schubert, Blaine W.; Bredehoeft, Keila E.: **A NEW GENUS OF SALAMANDER (PLETHODONTIDAE, DESMOGNATHINI) FROM THE GRAY FOSSIL SITE OF TENNESSEE**
- 36-12** 26 Schap, Julia A.*; Samuels, Joshua X.: **POPULATION MESOWEAR ANALYSIS OF *TAPIRUS POLKENSIS* FROM THE GRAY FOSSIL SITE, TENNESSEE**
- 36-13** 27 Bogner, Emily L.*; Schubert, Blaine; Samuels, Joshua X.: **DENTAL MEASUREMENTS IN BLACK BEARS (*URSUS AMERICANUS*) AND BROWN BEARS (*URSUS ARCTOS*): DISTINGUISHING THE SPECIES THROUGH TIME AND SPACE**
- 36-14** 28 Snyder, Keith*; McLain, Matthew A.; Snyder, Ivan; Chadwick, Arthur V.: **FOUR OVERLAPPING DINOSAURS IN THREE ORIENTATIONS: A TAPHONOMIC PUZZLE FROM THE LANCE FORMATION OF WYOMING**

SESSION NO. 37**T18. Undergraduate Research IV (Posters) (Council on Undergraduate Research Geosciences Division; GSA Quaternary Geology and Geomorphology Division)**

1:30 PM, Knoxville Convention Center Room 301 DE/Henley Concourse

Authors will be present from 2 to 4 PM

Booth #

- | | |
|---|---|
| <p>37-1 29 Crone, Erin*; Carlson Mazur, Martha; Hauswald, Cassie: INFLUENCE OF BEDROCK GEOLOGY AND LAND USE ON HABITAT AND WATER QUALITY IN TWO BLUE RIVER WATERSHEDS WITH DIFFERING MANAGEMENT PLANS</p> <p>37-2 30 Maas, Carly M.*; Anderson, William P.; Fedders, Emily R.: MICRO-WETLAND IN URBAN TOPOGRAPHY TO MITIGATE SALT CONTAMINATION</p> <p>37-3 31 Ramsey, Sierra*; Tatum, Joshua Michael; Peeler, Mitchell; Streicher, Mitchell; Gannon, J.P.: THE ROLE OF WEATHERED AND UNWEATHERED BEDROCK CHEMICAL COMPOSITION AND MINERALOGY IN PRODUCING VARYING STREAM WATER CHEMISTRIES IN A HEADWATER CATCHMENT IN WESTERN NORTH CAROLINA</p> <p>37-4 32 Hurst, Eliza*; Mann, Aras; Marlor, Don; Skeen, Evan; Gannon, J.P.: THE USE OF SOIL CHEMISTRY, SOIL MORPHOLOGY, AND PARTICLE SIZE TO EXPLAIN STREAM WATER CHEMISTRY DIFFERENCES ACROSS A HEADWATER CATCHMENT IN THE SOUTHERN APPALACHIAN MOUNTAINS</p> <p>37-5 33 Mase, Heather*; Whitehouse, Peter; Parrott, Forrest; Paradise, Chris; Johnson, Bradley G.: SPECIFIC CONDUCTIVITY AND BENTHIC MACROINVERTEBRATE COMMUNITIES IN HEADWATER STREAMS IN THE PIEDMONT OF NORTH CAROLINA</p> <p>37-6 34 Whitehouse, Peter*; Mase, Heather; Parrott, Forrest; Paradise, Chris; Johnson, Bradley G.: FLASHINESS OF HEADWATER STREAMS WITHIN THE CONTEXT OF SEASONAL CHANGES IN EVAPOTRANSPIRATION AND DIFFERING LAND USE</p> <p>37-7 35 Meyers, Mason C.*; Geissberger, Thomas G.; McKay, Larry D.: A GIS APPROACH TO WATER QUALITY MONITORING AND ASSESSMENT IN KNOX COUNTY, TN</p> <p>37-8 36 Almatari, Abraham L.*; Williams, Daniel; Spirina, Elena; Pfiffner, Susan; Lloyd, Karen; Rivkina, Elizaveta; Vishnivetskaya, Tatiana: MICROBIAL DIVERSITY OF SIBERIAN PERMAFROST</p> <p>37-9 37 Shockley, Isaac B.*; Anderson, Victoria; Nandi, Arpita; Luffman, Ingrid: HYDRIC SOIL EVALUATION FOR EXPANSION OF THE CUTSHAW BOG, CHEROKEE NATIONAL FOREST, GREENE COUNTY, TENNESSEE</p> | <p>37-10 38 Soiles, Thomas Taylor*; Mucyo, Sylvie; Nshimiyimana, Francois Xavier; Peterson, Holly E.: PRELIMINARY INORGANIC SURFACE WATER QUALITY ANALYSIS OF THE GATUNGA STREAM NEAR AN UNLINED LANDFILL IN GATUNGA, KIGALI PROVINCE, RWANDA</p> <p>37-11 39 Friedman, Abby*; Jordan, Sarah; Szulczewski, Melanie: SURVEY OF LEGACY AND OTHER CONTAMINANTS IN SOILS AND WATERS OF CENTRAL VIRGINIA GOLF COURSES AND PUBLIC PLACES</p> <p>37-12 40 Neiswander, Carter L.*; Gilliam, Gary; Saxton, Thomas: ONSITE SEWAGE DISPOSAL SYSTEM SURVEY OF THE LEMON DRIVE AND PLEASANT VIEW DRIVE NEIGHBORHOOD IN LYNCHBURG, VIRGINIA</p> <p>37-13 41 Vascik, Bryce*; Lord, Mark; Kinner, David; Campbell, Ted: NEAR-STREAM DEPOSITIONAL SEDIMENT TRAITS, INTERPRETATION, AND HYDROLOGICAL IMPLICATIONS IN HEADWATERS OF THE SOUTHERN BLUE RIDGE MOUNTAINS</p> <p>37-14 42 Cooley, Susannah*; Coggan, William; Johnson, Bradley G.: THE EFFECTS OF FOREST FIRE ON THE PHYSICAL AND CHEMICAL PROPERTIES OF SOIL IN SOUTH MOUNTAIN STATE PARK, NC</p> <p>37-15 43 Bodalski, Joe*; Deniken, Victoria; King, Matt; Childers, Daniel: PHYSICAL GEOLOGY HONORS PROJECT: USING GIS TO MAP THE DELAWARE COUNTY COMMUNITY COLLEGE CAMPUS LANDSCAPE</p> <p>37-16 44 Morgan, John C.*; Gannon, J.P.; Kelleher, Christa: DETERMINING GROUNDWATER CONTRIBUTIONS IN A HEADWATER CATCHMENT USING CHANGES IN STREAM WATER TEMPERATURE</p> <p>37-17 45 Fleishour, Nicholas P.*; Young, Lonie C.; Hart, Evan A.: DEVELOPMENT OF WATERSHED MODELS FOR THE TRIBUTARIES OF CUMMINS FALLS TO AID IN FLASH FLOOD WARNING SYSTEM</p> <p>37-18 46 Young, Holly A.*; Ford, William I.; Erhardt, Andrea M.: PORE WATER GEOCHEMISTRY VARIABILITY ACROSS A BACKWATER WETLAND IN A MIXED-USE APPALACHIAN WATERSHED</p> <p>37-19 47 Maynard, Shannon Marie*: PALEOHYDROLOGY OF EARLY PLEISTOCENE DRAINAGE SYSTEMS: A STUDY OF THE ANCESTRAL MONONGAHELA RIVER</p> <p>37-20 48 Van Hook, J.J.*; Balascio, N.L.: LATE QUATERNARY CLIMATE AND LANDSCAPE HISTORY OF THE GRAFTON PONDS NATURAL AREA PRESERVE, YORKTOWN, VIRGINIA</p> <p>37-21 49 Pugsley, E.*; Balascio, N.L.; D'Andrea, William J.; Wickler, Stephen: LACUSTRINE RECORDS OF MID TO LATE HOLOCENE CLIMATE AND ENVIRONMENTAL CHANGE FROM THE LOFOTEN ISLANDS, NORWAY</p> |
|---|---|

Index of Authors

How to use the indexing system:

The first number (preceding the dash) represents the session number in which the paper will be presented.

The second number (following the dash) indicates the presentation order of the paper within its session.

Example: Patterson, Justyn A. 7-4*

Find Session #7 in the Technical Session portion of the Program, and look at the fourth paper in the session.

Page numbers are not listed in this index. Refer to session number and order of presentation to locate the author you are searching for.

*denotes presenter

A		Biedron, Eva M. 4-10, 30-11*	Carmichael, Sarah K. 32-3	DeMetz, Edward 18-3, 36-3
Abbott, James 11-1	Bill, Markus 33-1	Billor, Mehmet Zeki 8-8	Carnahan-Jarvis, Jill 30-6	Deniken, Victoria 37-15
Abolins, Mark 31-8*	Birrol, Berk C. 31-10	Bizimis, Michael 21-5	Carter, Evin T. 14-1	DeSantis, Larisa R.G. 4-8, 4-9, 4-10*, 4-11, 30-11
Adair, William A. 11-17*	Blanchette, Jessica S. 32-6	Blake, David E. 28-10	Carter, Mark W. 2-9, 22-2, 28-14*	Dexter, Troy A. 4-1
Adams, Alexandria L. 29-7*	Blaylock, Hannah E. 29-6	Blum, Mike 25-1	Casale, Gabriele 2-3, 28-5, 28-6	Dickson, Hannah 28-2*
Adams, Benjamin G. 8-6	Boan, Phillip C. 11-12*, 11-13	Boehling, Daniel 8-5	Casteel, Thomas J. 20-14	Diemer, John A. 18-12
Adams, Thomas 30-10	Bobyarchick, Andy R. 18-12, 21-2*	Boehm, Mathew S. 1-2	Cattanach, Bart L. 19-1*, 19-2, 32-2	Doar, William R. III 27-2*
Admassu, Yonathan 35-6	Bodalski, Joe 37-15*	Boerrigter, Kim 23-6	Caughey, Austin Lantz 18-15*	Dobson, David M. 20-12
Agrawal, Sarang 28-7	Bodnar, R.J. 21-8	Bogner, Emily L. 36-13*	Chadwick, Arthur V. 36-14	Doctor, Daniel H. 32-3*
Ague, Jay J. 2-2	Boehling, Daniel 8-5	Bolding, Robert W. 18-13*	Chakoumakos, Bryan C. 1-6	Donovan, Bailey G. 32-7
Ahmed, Kazi Matin 8-7	Boerigter, Kim 23-6	Boles, Bruce W. 8-1, 23-10	Chakrabarty, Prosanta 14-5	Drumheller, Stephanie K. 4-6*, 4-7, 16-3, 30-10*
Ajuwon, Favor Olasubomi 8-4*	Bogner, Emily L. 36-13*	Boling, Kenneth S. 32-5*	Chamberlain, Elizabeth L. 25-10*	Dudek, Marissa J. 35-6*
Alam, Md 35-8*	Bolding, Robert W. 18-13*	Bollen, Elizabeth M. 25-8*, 26-6, 28-2	Chapman, Martin C. 22-1*	Duff, Patrick D. 31-5*
Alamdari, Noushin Taghizadeh 18-14	Boles, Bruce W. 8-1, 23-10	Boote, Susannah K. 31-2	Chatterjee, Sumanta Kumar 18-4*	Duffy, Andrew 14-3
Alauddin, Mohammad 8-5	Borden, Rose M. 19-5*	Borden, Rose M. 19-5*	Childers, Daniel 16-1*, 23-1, 23-2, 37-15	Duke, Hope J. 36-2*
Albee, Elizabeth C. 4-7*	Boyd, Olivia 14-7	Boyd, Rebecca 7-3*	Childers, Hunter 29-3*, 29-4, 29-5	Dunham, J.I. 23-3*
Alberts, Erik C. 31-7	Boyer, Diana L. 20-6*	Bozdog, G. Nicholas 19-1, 19-2*, 32-2	Chowens, Timothy M. 18-13, 27-6*	Dutton, Andrea 29-13
Aleinikoff, John N. 28-3	Bredhoeft, Keila E. 30-8, 36-11	Bradley, Philip J. 11-12, 11-13, 28-12*, 28-13	Churnet, Habte G. 11-8	Dyar, M. Darby 8-1
Alley, Heather N. 36-7	Bramblett, Jeremy L. 10-7*	Bradley-Lewis, Neeshell 6-1*	Clendenning, Ronald J. 19-3	Dygert, Nicholas J. 31-9*
Almatari, Abraham L. 37-8*	Bream, Brendan R. 13-3	Bramblett, Jeremy L. 10-7*	Coggan, William 37-14	
Amorosi, Alessandro 4-1	Breit, George N. 21-7	Brenner, Julia 33-6	Colburn, Ross E. 29-12	E
Anderson, Laurie C. 24-9	Brenner, Julia 33-6	Brett, Carlton E. 1-3	Cole, Selina R. 30-5*	Eberli, Gregor P. 29-13
Anderson, Peter M. 30-12*	Brown, Summer J. 11-22	Brown, Terri 14-8	Colip, Grant 29-8, 29-9*	Eckert, James O. Jr. 2-2*
Anderson, Victoria 37-9	Brown, Terri 14-8	Brun, Jose 5-3	Compton, Brian 15-6, 30-7	Edgar, Lauren A. 5-5
Anderson, William P. Jr. 37-2	Brun, Jose 5-3	Brundin, Justin Nathaniel 15-9*	Congleton, John 16-2	Edgar, Sedona 11-13
Antonnaci, Vince 19-3	Bryan, Jonathan R. 1-1*	Bryan, Jonathan R. 1-1*	Cooke, Kimberly A. 15-8	Edgett, K.S. 5-5, 5-6
Arellano, David 22-5	Bulinski, Katherine V. 20-4, 20-5	Buonagione, Joy 23-8*	Coolley, Susannah 37-14*	Edgett, Kenneth 17-4
Armbruster, Jonathan W. 14-2	Burnett, Justin 23-10	Burnett, Justin 23-10	Corcoran, Kyle 9-7*	Edwards, Brad M. 27-6
Aronoff, Ruth F. 11-10, 11-21	Burr, Devon M. 5-10, 5-11, 17-1, 19-5, 19-6, 19-7, 19-8	Burstein, Jacob T. 11-12	Corradino, Julia 25-11	Edwards, Cole T. 18-16, 18-17
Ashley, Aaron Wolfgang 21-5*	Burstein, Jacob T. 11-12	Burstein, Joshua A. 11-12	Coté, Gary 29-5	Edwards, Nicholas P. 20-13
Ashwood, Loka 8-8	Burstein, Joshua A. 11-12	Burton, William C. 2-9	Cottingham, Kevin 11-1*	Egerton, Victoria M. 20-13
Ayala, Breanne N. 14-2	Bechtel, Randy 10-8*	Bush, Rachel 31-8	Coulson, Graeme 4-10	Elam, W.T. 23-10
Aylor, Joseph Jr. 21-8*	Bechtol, Cailey 18-20*	Buzon, Marian E. 16-2	Cowan, Ellen A. 6-1	Elliott, W. Crawford 34-4
Azzarone, Michele 4-1	BeDell, Tristan 28-5*	Byerly, Don 1-8*	Craig, Taylor D. 2-3	Ellis, Kelsey N. 16-3
			Cramer, Chris 22-4*, 22-5*	Emery, Joshua P. 5-11
B			Crawford, Thomas J. 18-13	Emmons, R.V. 7-2*
Babineaux, Claire E. 16-8			Cribb, Alison T. 20-1, 30-1*	Engel, Annette Summers 14-1, 14-2*, 24-9
Baedke, Steve J. 20-11			Crone, Erin 37-1*	Engle, Mark A. 3-4
Bagley, M. Evan 16-8			Crowe, Cheyenne 30-8	Entrekin, Sally A. 3-1*
Bailey, Christopher M. 2-8*, 21-3, 21-4			Cruz, Francisco W. Jr. 14-3	Epperson, Erin E. 34-4*
Balascio, N.L. 37-20, 37-21			Culver, Stephen 20-10	Eppes, Martha Cary 18-12
Barbeau, David L. Jr. 13-1*, 25-5*			Culver, Stephen J. 36-1	Erhardt, Andrea 18-14
Barineau, Clinton I. 2-5*, 28-7*			Cyr, Howard J. 1-2	Erhardt, Andrea M. 18-20, 37-18
Barnes, Samuel L. 9-8			Czwartacki, Brooke J. 27-2	Ettensohn, F.R. 36-9
Basile, Sarina 11-15				Ettensohn, Frank R. 13-2*, 18-14, 30-6
Bauer, Jennifer E. 16-10, 20-7, 24-2, 24-3*			D	Evans, Cameron 11-7*
Beale, Jacob N. 22-1			D'Andrea, William J. 37-21	Evans, Sarah G. 8-3
Beard, James S. 21-8			Daley, Gwen M. 15-10*	
Bechtel, Randy 10-8*			Darroch, Simon A.F. 15-5*, 20-1, 30-1, 30-2	F
Bechtol, Cailey 18-20*			Das, Raja 35-5*	Fagan, Amy 11-1, 11-3
BeDell, Tristan 28-5*			Date, Swapneeta 12-1*	Fagan, Amy L. 11-2
Beebe, D. Alex 20-14, 29-12			Dattilo, Benjamin 15-1	Falia, Anthony M. 3-6, 3-7, 23-8
Behr, Whitney M. 31-9			Davies, Michael 32-10*	Faller, Tim 35-4
Beitel, Hayley R. 11-8*, 11-17			Davidson, Bart 3-5	Fan, Qi-Cheng 26-1
Bell, Nicole E. 18-18*			Davis, Jordan Marisa 12-3*	Farmer, Bethany C. 18-6*
Berg, Christopher A. 11-6, 16-2			Deans, Austin Michael 20-8*	Farmer, Samantha 29-3, 29-5*
Bernard, Rachel E. 31-9			Deans, Jeremy R. 16-8	Farrell, Kathleen M. 18-2, 20-10, 27-1*, 32-9*, 36-1
Berquist, C.R. Jr. 32-6, 34-5			Death, Clare 4-10	Fassett, Caleb I. 17-1
Bess, Maddie 10-1*			DeBruyn, Jennifer M. 15-7, 33-5	
Betka, Paul 25-1			Deline, Bradley 24-1*, 24-5, 36-7, 36-8	
Bible, Gary G. 32-5				
	C			
	Calhoun, Zachary A. 18-5*			
	Campbell, Barbara J. 24-9			
	Campbell, Ted 37-13			
	Campan, Richard 8-1			
	Carberry, Jade-Ashley 11-10*			
	Carlson, Charles 9-1*, 9-2			
	Carlson Mazur, Martha 37-1			

Fedders, Emily R. 37-2
 Fedo, Christopher M. 5-5*, 17-4, 18-9
 Ferriero, Nicholas 23-6
 Ferry, Veronica 9-6*
 Finnen, D.C. 7-2
 Finnerty, Patrick 28-10
 Fitzgerald, Kathleen S. 8-6
 Fleishour, Nicholas P. 37-17*
 Forcino, Frank L. 10-5, 10-6
 Ford, Joshua Alexander 35-2*
 Ford, William I. III 37-18
 Fornash, Katherine 34-1
 Fortner, Allison M. 1-6
 Foster, Carleton 18-3, 36-3*
 Foster, David A. 31-4
 Fraeman, Abigail A. 5-5
 Freeman, Rebecca L. 10-2, 15-1*
 French, Joseph 29-1*
 Freyermuth, Mitchell 29-11*
 Friedman, Abby 37-11*
 Fryar, Alan E. 10-2*

G

Gannon, J.P. 9-6, 9-7, 37-3, 37-4, 37-16
 Garcia, Raeann 34-3
 Garihan, J.M. 28-8*, 28-9*
 Garnick, Sarah 4-10
 Gaudin, Timothy J. 10-7
 Geeza, Thomas J. 3-2*
 Gehrels, George E. 25-9
 Geissberger, Thomas G. 37-7
 Georgen, Jennifer 9-1, 9-2
 Gibson, Brandt M. 30-2*
 Gignac, Paul M. 4-7
 Gilbert, David J. 28-7
 Gilliam, Gary 37-12
 Gilliam, William 13-2
 Gillikin, David P. 3-2
 Golder, Keenan B. 19-8*
 Gomez, Fernando J. 1-4
 Good, Noline 18-8*
 Gosselin, Greg 29-8, 29-9
 Govert, Daniel J. 18-17*
 Graham, David 33-1
 Grambling, Nadine L. 25-7
 Grambling, Tyler A. 25-7*, 28-15*
 Gregg, Tracy K.P. 5-8, 5-9*, 19-9, 19-10, 19-11
 Griffin, Kayla M. 26-5*
 Groce-Wright, Nigel 9-5*, 18-1
 Gross, Megan R. 11-13*
 Grotzinger, John P. 5-5, 17-4
 Gu, Baohua 33-1
 Gu, Chuanhui 8-3
 Guenther, William R. 11-22
 Gunnin, R. Davis 30-7, 36-11*
 Gupta, Sanjeev 5-5
 Gwizd, Samantha 5-5, 17-4*

H

Hale, Rip P. 29-16
 Hall, M. Sierra 20-4*
 Hall, Madi 11-1
 Hall, Susan M. 21-7*, 21-8
 Hames, Willis E. 2-4*, 25-4, 26-5, 31-4
 Hamid, Zack A. 11-17
 Hammond, Nicholas 8-3*
 Han, Amber 31-8
 Hancock, Gregory 22-2
 Hanley, Carol 10-2
 Hanna, Heather D. 28-12, 28-13
 Hanson, Kathryn E. 36-8*
 Harder, Steven 31-6
 Harmon, Abigail 24-9
 Harris, Ann W. 30-6*
 Harris, Clay D. 18-10*
 Harris, Felicia 11-6*
 Harris, Felicia F. 36-7*
 Harris, Felicia R. 27-6
 Harris, M. Scott 27-5, 29-15
 Harris, Randa R. 16-2*
 Harris, Thomas H.S. 32-10
 Harrison, A. Alex 20-8
 Hart, Evan A. 37-17
 Hart, Pamela B. 14-2
 Hasan, M. Aziz 8-7
 Hatcher, Robert D. Jr. 2-11, 13-3, 13-4, 13-11*, 31-1, 32-5
 Haugrud, Shawn 15-6
 Hauswald, Cassie 37-1

Hawman, Robert B. 31-7*
 Haynes, John T. 20-2
 Haywick, Douglas W. 29-7
 Hazen, Terry C. 8-6
 Hearty, Paul J. 32-7
 Heckert, Andrew B. 10-7, 20-8
 Heikoop, Jeff 33-1
 Heitmuller, Franklin T. 16-8*
 Heller, Matthew J. 22-2
 Hemming, Sidney R. 25-5
 Henderson, Miles A. 1-4*
 Hendricks, Jessica Kendall 29-15*
 Hendrix, Amanda 20-8
 Herbert, Betsy 18-14, 36-9*
 Herbert, Lisa 23-8
 Herman, David J. 11-12, 11-13, 31-2, 31-3*
 Herrera Ventura, Albert 28-5
 Herrmann, Achim D. 20-2
 Hessler, Angela 25-6
 Hibbard, James 31-2
 Hibberts, Stephanie J. 29-17*
 Hier, Donovan P. 11-3
 Hiett, Christy 8-8
 Hill, Jesse S. 31-10*
 Hill, Joseph C. 13-9*
 Hill, Tina R. 5-3
 Hillis, Kayla R. 36-6
 Hoar, Rachel M. 11-22
 Hodelka, Bailee 14-3, 18-14
 Hoffmann, Sharon S. 18-18
 Hogg, Colin 35-6
 Hojnacki, Victoria 29-8, 29-9
 Holland, Mark E. 25-7
 Holm-Denoma, Christopher S. 2-5, 28-3, 28-14
 Horn, Sally P. 1-2, 16-3
 Horton, Albert 19-3
 Horton, Newsom 5-3
 Horton, Stephen P. 22-5
 Hossain, Azad A.K.M. 11-8, 11-17, 35-3*
 House, Christopher H. 5-5
 Howard, C. Scott 13-1
 Howard, Scott 27-5
 Huebner, Matthew T. 2-11*, 13-3
 Hughes, Cameron 28-15
 Hughes, Cameron A. 13-7*, 13-8
 Hughes, Matthew 27-5, 29-15
 Hurdling-Jones, Holly 10-6*
 Hurst, Eliza 37-4*
 Hutt, Sheila 9-1, 9-2*

I

Ibanez-Mejia, Juan C. 25-9
 Ibanez-Mejia, Mauricio 25-9
 Ingram, Kenya J. 11-3*
 Ingram, Stanton III 13-5
 Isard, Sierra J. 19-1, 19-2, 32-2
 Isiorho, K. Solomon 16-6*
 Ivey, Zack 35-4

J

Jackson, Matthew G. 21-5
 Jackson, Rebecca L. 20-6
 Jackson, William T. Jr. 25-6, 29-1
 Jacobsen, Robert E. 19-7*
 Jagadamma, Sindhu 33-3
 Jaret, Steven J. 5-2*
 Jerden, Marissa L. 21-6
 Jessup, Micah 28-15
 Jessup, Micah J. 13-7, 13-8*
 Jiang, Nannan 12-1, 23-9*
 Jimenez, Juan 22-5
 Johnson, Bradley G. 37-5, 37-6, 37-14
 Johnson, Harold E. II 25-4
 Johnson, Jarrett 14-7
 Johnson, Michael M. 20-12*
 Johnson, Sarah 35-4
 Johns, Alexander 12-1
 Jones, Michael L. 30-9*
 Jordan, Sarah 37-11
 Jovanelly, Tamie 18-1
 Jovanelly, Tamie J. 7-4, 9-5, 10-1, 10-4
 Joyner, Andrew T. 35-9
 Jubb, Aaron M. 3-4

K

Kah, L.C. 5-5, 5-6, 17-3, 23-3, 23-4
 Kah, Linda C. 1-4, 1-5, 1-6
 Karlstrom, Karl E. 25-7

Karnes, Molly E. 36-5*
 Kath, Randy L. 18-13
 Keenan, Sarah W. 15-7*, 33-5*
 Kelly, Elizabeth 8-5*
 Kelleher, Christa 37-16
 Kellett, Ryan 11-12
 Kelley, Patricia H. 15-8*
 Kellogg, James N. 31-5
 Kelly, Bridget T. 15-8
 Kelly, Jacque L. 9-3, 32-8
 Kenchington, Charlotte G. 30-1
 King, David T. Jr. 5-2, 29-7
 King, Matt 37-15
 Kinner, David 37-13
 Knapp, James H. 11-12, 11-13, 31-2*, 31-3
 Knoll, Martin A. 18-8
 Knox, Larry W. 24-8*, 29-6, 36-6*
 Kok, Jasper F. 5-11
 Kokesch, Broc S. 24-9
 Kowalewski, Michal 4-1
 Kowalewski, Michal 15-3, 36-4
 Kriscautsky, Agustin 1-5*
 Kromann, Jenna S. 3-5
 Kranyak, R.E. 5-5, 5-6*, 17-3
 Kuhajda, Bernard R. 14-2
 Kunk, Michael J. 32-3
 Kusnerik, Kristopher M. 4-1
 Kyle, J. Richard 1-7*, 34-3*

L

Lafamme, Marc 30-2
 Lamb, William A. 18-16*
 Lamsdell, James C. 24-7*
 Land, Timothy Warren 35-9*
 Lane, Christopher J. 11-16*
 Lang, Katherine E. 21-3*
 Langille, Jackie 25-11*
 Larrimore, Emily 10-4
 Larson, E.B. 7-2, 7-3, 29-2
 Lasley, Camille 11-14*
 Lawson, Haley 14-8*
 Lazar, Kelly Best 29-17
 Leckie, R. Mark 20-11
 LeDoux, St. Thomas Majeau 3-6
 LeDuc, Kayla M. 11-3
 Lee, David F. 34-2
 Lee, Ming-Kuo 8-8
 Lee, Peter A. 8-1
 Leesburg, J.N. 29-2*
 Lemiszki, Peter J. 19-3*, 32-5
 Leslie, Stephen A. 20-2, 20-11
 Lester, Rachel 36-8
 Levandowski, Will 22-3
 Levine, Jamie S.F. 2-3*, 28-5, 28-6
 Levy, Joseph S. 5-10
 Lewis, Caleb 20-8
 Li, Lidong 33-4*
 Liang, Junyi 33-3
 Ligush, John Paul 35-6
 Lim, S. Jean 24-9
 Limbeck, Maggie R. 16-10, 24-5*
 Lin, Qianying 31-4
 Linton, Whitney 10-5*
 Little, Dakota 9-6
 Liu, Chunyu 35-7*
 Liu, Xin-Chen 5-3
 Lizarralde, Dan 31-6
 Lloyd, Karen 37-8
 Lloyd, Karen Grayson 23-8
 Lockwood, Rowan 36-2
 Loeffler, Frank E. 12-1
 Löffler, Frank E. 23-9
 Long, Brooke L. 24-9
 Long, Nathan T. 20-2*
 Lopez, Carla L. 33-6
 Lord, Mark 37-13
 Lord, William 34-1*
 Lucas, Kaitlyn A. 23-2*
 Lucas, Spencer G. 20-8
 Luciano, Katherine 27-2, 27-5*, 29-15
 Luffman, Ingrid 3-8, 35-1, 37-9
 Lupo, Mary Elizabeth 21-1*
 Lynn, Ashley Sara 36-1*
 Lyon, Eva 18-14

M

Ma, Chong 31-4*
 Maas, Carly M. 37-2*
 Madden, Jeffrey R. 13-5
 Magno, Melissa A. 3-8*

Malinconico, MaryAnn L. 2-10
 Mallinson, David 20-10
 Mallinson, David J. 36-1
 Maloney, Katie 30-2
 Mann, Aras 37-4
 Manning, Phillip L. 20-13
 Manning-Berg, A.R. 23-4*
 Marlor, Don 37-4
 Martin, Anthony J. 4-5*, 29-14
 Martin, Claire P. 2-3, 28-6
 Martin, Steven L. 32-4*
 Martin, Thomas 9-7
 Martinez-Sacristan, Hernando 7-1*
 Marzen, Rachel E. 31-6*
 Mase, Heather 37-5*, 37-6
 Mason, Patricia H. 20-9
 Matthews, David 29-9
 Maue, Anthony D. 5-10*
 Mauz, Barbara 18-19, 27-4
 May, Michaela 20-15*
 Mayer, James R. 16-2
 Mayes, Melanie 3-6, 33-3, 33-6, 33-7
 Maynard, Shannon Marie 37-19*
 Mazurek, Renee 16-5*
 McAleer, Ryan J. 2-9*, 28-3, 32-3
 McBride, Kathryn 8-6
 McCall, Linda J. 15-4*
 McCallister, S. Leigh 8-5
 McCanta, Molly C. 11-5
 McClellan, Elizabeth 11-11, 28-4*
 McConnell, Nicholas Ray 35-1*
 McFarlane, Christopher R.M. 26-6
 McGlue, Michael M. 14-3*
 McKay, Larry D. 1-2, 8-6, 12-4, 16-3*, 37-7
 McKay, Matthew P. 25-6*
 McKinley, Jessica C. 3-4*
 McLain, Matthew A. 36-14
 McNamee, Brittani D. 11-7
 McSween, Harry Y. Jr. 5-1*
 Mead, Jim 15-6, 30-7
 Means, Guy 1-1
 Medlin, Lawrence J. 11-12
 Mennen, Nathan 10-4*
 Merschat, Arthur 13-3*, 13-4, 28-3*
 Meyer, Brian K. 9-3, 32-8
 Meyers, Mason C. 37-7*
 Mies, Jonathan W. 11-8, 11-17
 Miklusick, N.B. 5-6, 17-3*
 Mikucki, Jill A. 8-1, 23-10
 Milam, Keith A. 11-4
 Miller, Barry W. 19-3
 Miller, Jerry R. 9-7
 Miller, Nathan R. 34-3
 Misra, Saumitra 5-3
 Mitchell, Garrett 29-1
 Mobasher, Katayoun 16-9
 Moecher, D.P. 2-1*, 25-2
 Moersch, Jeffrey E. 18-9
 Molofsky, Lisa J. 3-5
 Monami, Shifat 18-11*
 Montante, William M. 4-2
 Moore Torres, Jessie C. 29-14*
 Morgan, John C. 11-3, 37-16*
 Morrow, Robert H. IV 13-1, 28-10
 Moulton, Dedrick E. 11-21*
 Moye, Robert J. 34-2
 Moysey, Stephen M. 29-17
 Mucyo, Sylvie 37-10
 Mueller, Paul A. 25-3, 31-4
 Muhlbauser, Jason G. 18-9*
 Mullen, Lauren Ashley 23-6*
 Murphy, Steppen 16-4*
 Murray, Patrick James 8-4, 23-6
 Myers, Carl W. 22-6*

N

Nachon, M. 5-6
 Nandi, A. 35-9
 Nandi, Arpita 3-8, 35-1, 35-5, 37-9
 Nathan, Erica 5-10
 Nawrot, Rafal 4-1*
 Nazeem, Nima 22-5
 Neal, Donald 18-7*
 Neiswander, Carter L. 37-12*
 Nelson, Daren T. 9-8
 Newell, Dennis L. 13-7, 13-8, 28-15
 Nickerson, Brandon T. 10-3*
 Nield, Emily Victoria 5-11*
 Niemiller, Matthew L. 14-1*, 14-2, 14-5
 Niles, Jacob D. 11-13
 Nolan, Jack T. 28-10
 Nord, Julia Ann 11-9

Norton, Rebecca 16-7*
Noto, Christopher 30-10
Novello, Valdir Felipe Sr. 14-3
Nshimiylimana, Francois Xavier 37-10
Nypaver, Cole 17-1*

O

O'Malley, Paul W. 17-2*
O'Neal, Donald W. 22-7*
O'Neill, Lainey N. 29-13*
Oberg, Danielle 30-8
Occhi, Marcie 32-6*
Ogden, Albert 31-8
Ogweno, Luke Phillip 22-5
Olson, Roger 35-4
Ortega-Ariza, Diana 18-15
Osborne, Cesalea N. 14-4*
Osborne, W. Edward 25-3
Ottinger, Sarah Louise 8-2*
Owens, Brent E. 21-4, 26-3, 26-4*, 28-14, 34-5

P

Page, Michael 29-14
Palmore, C. Dianne 29-7
Paradise, Chris 37-5, 37-6
Parker, Audrey N. 16-10*
Parker, E. Horry Jr. 31-7
Parker, Mercer 28-1
Parker, Sheena M. 29-12*
Parks, Jerry M. 12-1
Parks, Ryan D. 11-22*
Parris, T. Marty 3-5
Parrott, Forrest 37-5, 37-6
Parsley, Ronald 30-3*
Paterson, Audrey 24-9*
Paton, Timothy 1-3*, 30-4*
Patterson, Amber B. 5-7
Patterson, Justyn A. 7-4*
Peach, Brandon T. 11-12, 11-13, 28-10, 28-12, 28-13*
Peel, Samantha E. 19-6*
Peeler, Mitchell 37-3
Perilla-Castillo, Paula J. 1-2*
Peslier, Anne H. 21-5
Peterson, Holly E. 37-10
Petsios, Elizabeth 15-3*, 36-4
Pezeshk, Shahram 22-5
Pliffner, Susan 37-8
Philben, Michael 33-1*
Phillips, Keith 14-7*
Phillip, Ryan Eli 27-4*
Phillips, Jana 33-6
Phillips, John G. 14-6*
Pierce, Timothy D. 15-10
Pledger, Jacqueline R. 20-14*
Portell, Roger W. 4-1, 15-3, 36-4
Potter, Christopher J. 2-10*, 21-8
Potter, Donald B. 18-8
Powell, Christine 22-3*
Powell, Christine A. 31-1*
Powell, Nicholas E. 28-6*
Pracheil, Brenda M. 1-6
Prutzman, William J. 9-8*
Pugsley, E. 37-21*
Pullen, Alex 25-9*
Putt, Andrew D. 8-6*

Q

Qualls, Logan M. 24-2*
Quinn, Ryan K. 33-6*

R

Racicot, Rachel 30-2
Rahl, Jeffrey M. 2-3
Rahman, Imran A. 30-2
Rahman, Md Mahtfujur 8-7*
Ramsey, Ashley 3-7*
Ramsey, Kelvin W. 34-5, 36-2
Ramsey, Sierra 11-2*, 37-3*
Rankin, Douglas W. 28-3
Ranson, William A. 11-14, 11-15*, 11-16
Rasiak, Sophia 11-11*
Ratchford, Rebecca A. 20-9*
Ray, Daniel 26-3*
Recchuiti, Erin M. 11-3
Reeder, Adrienne 11-11
Regan, Sean P. 2-9

Rehrer, Justin R. 2-11
Reichard, James S. 9-3*, 32-8
Reid, Jeffrey C. 22-6, 34-2*
Reimann, Tony 25-10
Reis, Alex J. 18-14*
Renner, James F. 27-6
Repetski, John E. 21-1
Reside, Anna 4-10
Reynolds, Valerie S. 10-3
Rice, Aaron K. 28-10*
Rice, Andrew 20-3*
Rich, Frederick J. 32-8
Richardson, Andrea E. 11-18*, 19-4
Richardson, Loren 29-8*, 29-9
Richardson, Stephen D. 3-5
Richter, Lea 29-15
Ripple, Brandon 29-1
Rivera-Hernandez, Frances 17-4
Rivkina, Elizaveta 37-8
Robbins, John Tyler 20-6
Roberson, R. Philip 36-5
Roberts, Sarah E. 11-5
Rodemer, Franklin E. 26-2*
Rodewald, Beatrice M. 20-1*
Roenker, Benjamin Thomas 35-4*
Rogers, Ryan L. 26-6*
Romanek, Christopher S. 29-11
Rooney, Laura 24-10*
Roop-Eckart, Kenneth J. 28-7
Rosalsky, Jeff 23-6
Rosenberg, Christiana Destry 11-19*
Ross, Aubree 11-1
Royalty, Taylor Michael 23-7*
Ruefer, Anna 29-8, 29-9
Russo, Aeon 12-5*

S

Sadler, Kendra 20-5*
Sakimoto, Susan E.H. 5-8*, 5-9
Samson, S.D. 2-1, 25-2
Samuels, Jake 11-1
Samuels, Joshua X. 24-10, 36-12, 36-13
Samuels, Joshua Xavier 30-8*
Sandlin, Wesley 18-3, 36-3
Sanger, Denise 27-5
Santos, Rudney de Almeida 14-3
Sare, Hadarou 19-11*
Saunders, Autumn Kimberly 4-11*
Sause, Erin E. 15-5
Savrd, Charles E. 15-9, 18-3*, 36-3
Saxton, Thomas 37-12
Scarponi, Daniele 4-1
Schaeffer, Sean M. 33-2*, 33-4
Schap, Julia 30-8
Schap, Julia A. 36-12*
Schieber, Juergen 5-5
Schiff, Nicholas L. 19-10*
Schmidt, Rebecca Lynn 11-9*
Schmitz, Darrel W. 16-8
Scholtz, Elinor 4-9*, 4-10
Schubert, Blaine 15-6, 36-13
Schubert, Blaine W. 30-7*, 30-8, 36-11
Schuler, Caleb G. 23-10*
Schultz, Art 28-1*
Schwartz, Joshua J. 13-5
Schwimmer, David R. 4-2*
Seckinger, Clay 18-14
Secor, Donald T. Jr. 13-1
Seminack, Christopher T. 27-3
Sen, Pragnyadiptra 11-20
Seramur, Keith C. 6-1
Sethi, Parvinder 16-7, 20-15, 29-3, 29-4, 29-5
Seward, Gareth G.E. 25-11
Sexton, Jubal 13-1, 28-11*
Shabazz, Malcolm X. 23-6
Sharp, Emily 11-18, 19-4
Sharpe, Dalton 18-1*
Shaver, Stephen A. 34-1
Shaw, Colin A. 13-7, 13-8, 28-15
Shear, William A. 14-1
Sheffield, Sarah L. 15-2*
Shen, Zhixiong 18-19*, 27-4, 29-10
Sherman, Amanda R. 10-2, 18-14
Shillington, Donna J. 31-6
Shmelkina, Iana 5-9
Shmorhun, Nina M.E. 20-10, 36-1
Shockley, Isaac B. 37-9*
Shoup, Bryce O. 9-4
Siebach, Kirsten L. 5-5
Sikder, Arif M. 5-3*, 8-5

Simpson, Emily M.B. 36-10*
Simpson, Emily N. 11-4*
Sincavage, Ryan 16-7, 25-1*, 25-10
Singbe, Dorothy 23-1
Singh, Shikha 33-3*
Skeen, Evan 11-3, 37-4
Sklute, Elizabeth C. 8-1
Smath, Richard A. 3-5
Smith, Ann P. 3-5
Smith, Christopher E. 20-7*
Smith, Gregory J. 4-8*, 4-10
Smith, J.K. 5-11
Smith, Michael S. 18-6, 26-2
Snyder, Ivan 36-14
Snyder, Keith 36-14*
Soiles, Thomas Taylor 37-10*
Song, Yang 33-7*
Sonsteng, Anthony K. 27-3*
Sontag, Phil 8-4
Soto Perez, Jennifer 12-2*
Southworth, Scott 2-7*, 28-3, 32-1*
Spears, David B. 2-9, 22-2
Speetjens Gilley, Sara Elizabeth 26-1*
Sperling, Erik A. 1-4
Spirina, Elena 37-8
Springer, Hannah H. 35-3
Sprinkle, James 4-4, 24-6*
St. John, Kristen 29-8, 29-9
St. John, Kristen E. 20-11
Stadelman, Steve A. 10-8
Steen, Andrew D. 8-4, 16-3, 23-6, 23-7
Stein, Nathaniel 17-4
Stephen, Charles D.R. 14-1
Stephenson, George C. 29-3, 29-4, 29-5
Stewart, Jason L. 11-13
Stewart, Kevin G. 31-10
Stocker, Michelle R. 24-11*
Stone, Michael S. 20-11*
Stowell, Harold H. 13-5*, 25-8, 26-6, 28-2
Streicher, Mitchell 37-3
Sullivan, Veronica F. 11-20*
Suminski, Molly 11-1
Summerlin, Tonya 20-5
Sumpter, Mathew 29-10*
Sumrall, Colin 30-3
Sumrall, Colin D. 15-2, 16-3, 20-7, 24-1, 24-2, 24-3, 24-5, 30-4
Sumrall, J.B. 7-3, 29-2
Sun, Yu 27-3
Suter, Patrick F. 19-9*
Sutton, Collin R. 8-8*
Sutton, Seth R. 20-10*
Sutton, Stephen L.F. 5-11
Swalom, Meredith 11-22
Swezey, Christopher S. 32-11*
Szulczewski, Melanie 37-11
Szynkiewicz, Anna 3-6*, 3-7, 23-8

T

Tacker, R.C. 21-6*
Tate, Garrett W. 11-18, 19-4*
Tatum, Joshua Michael 37-3
Taylor, Charles J. 3-5
Taylor, Ellen 8-1*
Taylor, Kenneth B. 13-10*
Taylor, Kenneth J. 27-3
Tefend, Karen S. 16-2
Tennakoon, Shamindri D. 36-4*
Thigpen, J. Ryan 11-22, 13-4*
Thomas, William A. 13-6*, 25-3*, 31-1
Thompson, Carmi Milagros 36-2
Thompson, Grant B. 20-13*
Thompson, Jacob T. 25-4*
Thomson, Bradley J. 5-4*, 17-1
Thornton, Erik 18-2*, 27-1
Thorson, Haley 18-8
Tibbits, Matthew A. 4-3*
Tohidi, Hamed 22-5
Tohver, Eric 2-1
Tollo, Richard P. 28-3
Toran, Marta L. 10-7
Tormey, Blair R. 32-7*
Tran, Liam 12-4
Tucker, Nicholas M. 15-10
Tuite, M.L. Jr. 23-4
Tull, James F. 2-5, 2-6*, 21-1
Turner, Joseph B. McGee 5-3
Tweel, Andrew 27-5
Tyler, Carrie L. 15-3, 36-4

U

Uddin, Ashraf 18-5, 18-11

V

Valery, Catherine Anne 21-4*
Van Arsdale, Roy B. 22-5
Van Hook, J.J. 37-20*
Van Iten, Heyo 20-3, 35-2
Vance, R. Kelly 9-3, 32-8*
VanCleave, Samantha Ashley 23-5*
Vasavada, A. 5-5
Vascik, Bryce 37-13*
Vaughan, Aubrey 2-8
Verellen, Devon N. 31-7
Visaggi, Christy C. 15-8
Vishnivetskaya, Tatiana 37-8
Volk, Natalie Ann 25-3
Vulava, Vijay M. 12-3
Vyverberg, Karen L. 29-13

W

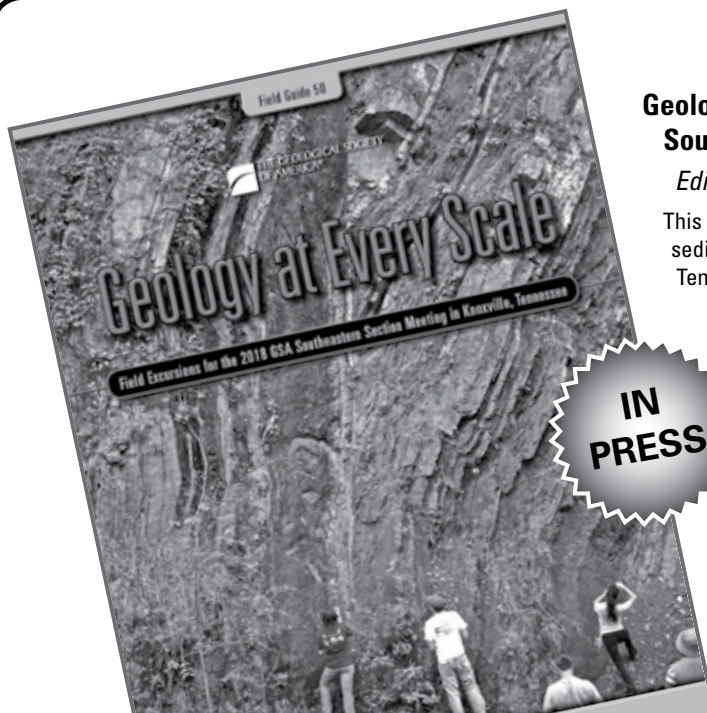
Wallace, Steven C. 15-6, 30-8
Wallinga, Jakob 25-10
Walsh, Gregory J. 13-3
Wang, Gangsheng 33-3, 33-7
Wang, Hongmei 35-4
Warner, Nathaniel 3-2, 3-3*
Warrell, Kathleen F. 2-10
Waters, Johnny 24-4*
Waters, Johnny A. 24-3
Watson, Zachary A. 29-6*
Watts, Chester F. 16-7
Weathers, Taylor 22-5
Weaver, Hannah G. 29-16*
Webb, Fred Jr. 28-1
Webb, Steven E. 3-5
Wehrmann, Laura 23-8
Wenhold, Leah 12-4*
Whitehouse, Peter 37-5, 37-6*
Whitelaw, Michael J. 35-9
Whiteman, John 29-8, 29-9
Whitcar, G. Richard 9-4*
Wickler, Stephen 37-21
Widga, Chris 15-6*, 15-7, 30-9
Widga, Christopher C. 30-7, 30-8
Wiedman, Nicholas 23-1*
Wilberg, Eric W. 4-6
Williams, Daniel 37-8
Williford, K.H. 23-4
Wincele, Lily 11-20
Winebrenner, Dale P. 23-10
Winkle, Garrett T. 29-6
Witherspoon, William D. 16-9*
Witt, Anne C. 22-2*
Wittmer, Jacalyn M. 4-1
Wogelius, Roy A. 20-13
Wolak, Jeannette M. 5-7*, 29-6
Wood, R. Seth 1-6*, 11-5*
Wooten, Richard M. 19-1, 19-2, 32-2*
Worthington, Eleanor Nucup 34-5*
Wright, David F. 30-5
Wright, Eric 18-19, 27-4
Wullschlegler, Stan 33-1
Wunderlich, Andrew L. 32-5

Y

Yan, Jun 23-9
Yang, Xiaojuan 33-7
Yankech, Matthew R. 18-12*
Yann, Lindsey T. 4-10
Yao, Qiuming 33-7
Yates, Zach 29-4*
Yelverton, James W. Jr. 26-6
Young, Holly A. 37-18*
Young, Lonie C. 37-17

Z

Zachos, Louis G. 4-4*
Zakrzewski, Richard J. 30-8
Zhao, Yuanlong 30-3
Zheng, Jianqiu 33-1
Zhu, Junfeng 3-5*
Zielinski, Robert A. 21-7
Zigler, Kirk S. 14-1, 14-2
Zoramthara, C. 25-1
Zotto, Steven C. 18-14, 25-2*
Zou, Haibo 26-1



Geology at Every Scale: Field Excursions for the 2018 GSA Southeastern Section Meeting in Knoxville, Tennessee

Edited by Annette Summers Engel and Robert D. Hatcher Jr.

This guidebook contains nine field trips that highlight the spectacular sedimentary and structural geology within, and surrounding, Knoxville, Tennessee. One guide focuses on the East Tennessee marble industry from the vantage point of the Three Rivers Rambler excursion train in Knoxville, and another guide features limestone-centric lessons for STEM educators. Three guides explore the region's karst landscape and geological curiosities in the Great Smoky Mountains National Park and Tuckaleechee Cove, the Flynn Creek impact structure, and the Gray Fossil Site, for which that guide also provides training in nutrient hotspots at the Body Farm—the University of Tennessee Anthropological Research Facility. The last four guides examine regional structural geology and tectonics, including of the eastern Tennessee seismic zone, the Nashville dome in central Tennessee, and the Blue Ridge and Inner Piedmont belts of the Carolinas and Georgia.

FLD050, 209 p., ISBN 9780813700502 | IN PRESS



THE GEOLOGICAL SOCIETY
OF AMERICA®

BUY ONLINE ▶ <http://rock.geosociety.org/store/>

toll-free 1.888.443.4472 | +1.303.357.1000, option 3 | gsaservice@geosociety.org

FULL-COLOR POSTER

Geologic Time Scale Poster v. 4.0

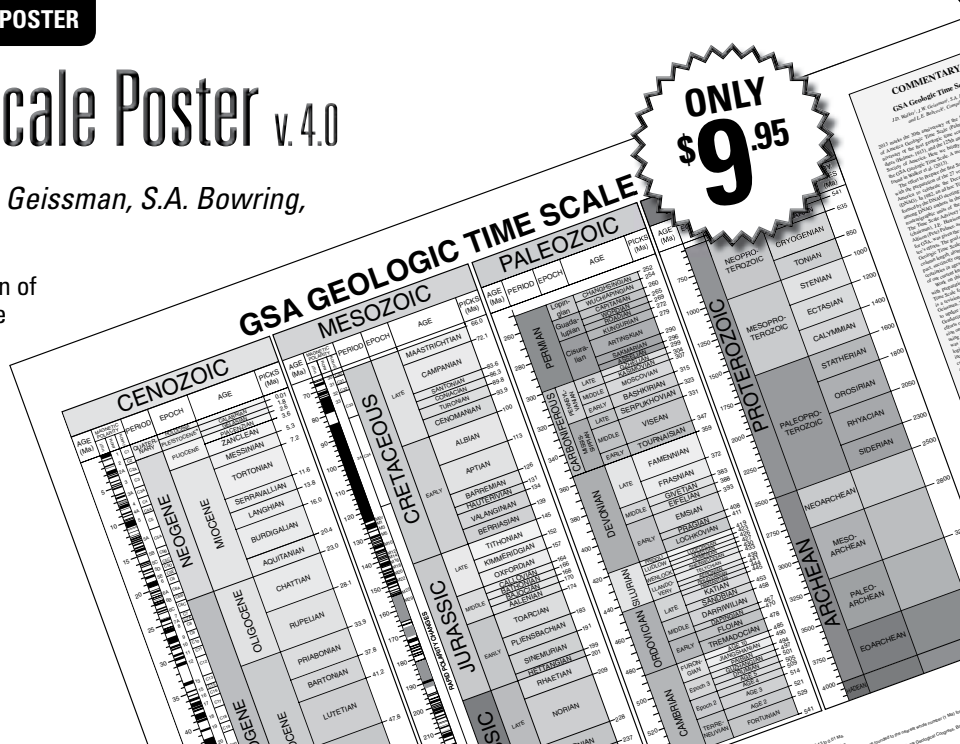
*Compiled by J.D. Walker, J.W. Geissman, S.A. Bowring,
and L.E. Babcock, 2012*

Use this colorful, poster-size version of GSA's updated Geologic Time Scale (v. 4.0) to decorate your office or classroom. Includes an explanation of the chart's history and updates.

GTSP05 | 18" × 27.5" | **\$9.95**



THE GEOLOGICAL SOCIETY
OF AMERICA®



BUY ONLINE ▶ rock.geosociety.org/store/

gsaservice@geosociety.org | toll-free +1.888.443.4472
+1.303.357.1000, option 3

CODE OF CONDUCT AT GSA EVENTS



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:

- Harassment, intimidation, or discrimination.

- 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 being harassed, notice that someone else is being harassed, or have any other concerns, please locate a GSA Staff Member or GSA Leader (see page 2) with a GSA RISE button. You may also email GSA at gsa-eventscode@gmail.com.

Always remember that if it is a life-threatening emergency, dial 9-1-1. If you are within the meeting venue or hotel, it is helpful to have someone notify a staff member or building employee if possible to avoid delays with emergency responders.

Add New Layers to Your Quaternary Research

- ✓ $\delta^{18}\text{O}$ now included **free** with ^{14}C on carbonate and water/ice
- ✓ $\delta^{13}\text{C}$ measured directly on the sample via IRMS
- ✓ Maximize your budget with free consultation and cancellation

— Since 1979 —
Radiocarbon Dating
Consistent Accuracy, Delivered on Time



Beta Analytic
www.radiocarbon.com