

2019

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No. 3

PROGRAM



Southeastern Section Meeting

28–29 March

Charleston, South Carolina, USA

www.geosociety.org/se-mtg



**THE GEOLOGICAL SOCIETY
OF AMERICA®**

Robert James Tracy 1944–2019

Few could argue to have lived the life of a petrologist better than Robert James (Bob) Tracy. Bob died on January 6, 2019, at his home in Blacksburg, Virginia, and is survived by his precious wife of 50 years, Patricia.

Bob was born in Washington, D.C., on October 2, 1944, and obtained an A.B. degree from Amherst College in 1967 followed by a M.S. from Brown University in 1970. Bob's Ph.D. (1975) was from the University of Massachusetts at Amherst under the supervision of Peter Robinson. He then moved to Harvard as a Research Fellow under supervision of J.B. Thompson. Bob moved to Yale in 1978 as an Assistant and then Associate Professor, and moved to Virginia Tech in 1986 as Professor. Bob served as Department Chair from 2005 to 2008 and as Associate Chair from 2012 to 2018, the Director of the Virginia Tech Mineral Museum, and the Virginia Tech electron microprobe facility. Bob co-authored the landmark text "Petrology: Igneous, Sedimentary, and Metamorphic". Bob was also a dedicated member of the Geological Society of America. He co-convened a Penrose Conference in 1986, served as associate editor of GSA Bulletin from 1989-1995, was elected GSA Fellow in 2011, and served on Council from 2011-2014. Bob also co-chaired two successful SEGSA meetings in Blacksburg, in 1994 and 2014, and held several positions on the SE Section Board from 2013-2018, including Chair. He was on several GSA committees, including GSA's Geology and Public Policy Committee since 2016.



Bob's primary research field was metamorphic petrology. His work improved understanding of the measurement and significance of chemical zoning in metamorphic minerals, metamorphic phase equilibria, processes of crustal melting and the mineralogy of residual rocks, the behavior of sulfur during metamorphism, microprobe dating of monazite, and of the tectono-metamorphic evolution of New England and the Western Blue Ridge province. A day with Bob in the field, in front of an optical microscope, or on an electron microprobe was a day in the company of a true renaissance talent. Bob freely gave his time as a generous colleague, an enthusiastic teacher, and a fiercely loyal friend to the petrologic community.

Bob was a walking encyclopedia of mineralogy, petrology, optical and electron microscopy, sample preparation, wine, French cuisine, European and American political history, fishing, barbecue (partial listing). Bob liked nothing more than using this information to help people, and students in particular, generally espousing his wisdom with a carefully pointed wit. His generosity in terms of sharing his time, knowledge, ideas, data and opinion are difficult to equal.

"Mangia bene, ridi spesso, ama molto!"

Remembering Dr. Robert Tracy

Friends of Bob Reception, 7–9 p.m., Parkview Room, Fox Swamp Restaurant.

A Remembrance Talk, 4:40–5 p.m., Pinckney Room, Francis Marion Hotel, immediately following T14. Origin and Significance of Ultramafic Bodies in Suture Zones from the Appalachians and Beyond

FINAL PROGRAM
FOR
ABSTRACTS WITH PROGRAMS
68th Annual Meeting
SOUTHEASTERN SECTION, GEOLOGICAL SOCIETY OF AMERICA
28–29 March 2019

Francis Marion Hotel, Charleston, South Carolina

***Southeastern Hospitality in the Geosciences:
From Ancient Systems to Modern Resiliency***

Hosted By

The College of Charleston - Department of Geology and Environmental Geosciences
SC Department of Natural Resources - Geological Survey

Guideline Geo

Virginia Institute of Marine Science

Western Carolina University

NASA



Southeastern Section GSA Officers for 2018-2019

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Field Trip Co-Chairs John Chadwick, Steven Jaumé
Student Volunteer Chair Cynthia Hall
Exhibits Chair Blair R. Tormey
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SPONSORS

We are thankful to sponsors who made substantial contributions that enhanced this meeting. Their names will be prominently displayed throughout the meeting space. Sponsors as of press time include:

Guideline Geo Americas
Geophysical Survey Systems, Inc. (GSSI)
College of Charleston—Archaeology
South Carolina Department of Natural Resources—South Carolina Geological Survey

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 37). If you have any concerns about behavior that may violate the Code, please contact:

GSA Executive Director, Vicki McConnell, vmconnell@geosociety.org

GSA Ethics and Compliance Officer, Nan Stout, gsaeventscode@gmail.com

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



General Information



Welcome

The Local Organizing Committee and Section Officers welcome you to the 2019 meeting of the Southeastern Section of the Geological Society of America, located in historic downtown Charleston, South Carolina. Among other organizations, the meeting is hosted by the Department of Geology and Environmental Geosciences at the College of Charleston, a short walk from the meeting location at the Francis Marion Hotel. We welcome you to Charleston and invite you to enjoy the best the city and region have to offer!

Location

The 68th annual meeting of the Southeastern Section of GSA is set in the coastal city of Charleston, South Carolina, recently named the best small city in the United States by Condé Nast and recipient of repeated top honors as one of the premier destination cities in the world. Located at the confluence of the Ashley, Cooper, and Wando Rivers, the city is renowned for its coastal setting, historical architecture, delicious cuisine, deep history, and friendly locals. The Francis Marion Hotel, situated in the heart of Charleston's historic peninsula, is steps away from historic attractions, public parks, and eateries and is conveniently located for attendees to easily access the heart of the city on foot.

Founded in 1670, Charleston has evolved over the centuries from a walled colonial seaport to a thriving metropolitan area. In 1861, the city was the site of the first shots of the Civil War, as Confederate soldiers fired on Union-occupied Fort Sumter in Charleston Harbor. In 1886, an estimated 6.9-7.3 magnitude earthquake with an epicenter in nearby Summerville, SC became the most powerful and destructive in recorded history in the southeastern United States. Although Charleston was slow to recover from these events, much of the city's historically significant architecture was preserved as a result. Charleston today is a tourist mecca, drawing approximately 7 million visitors annually. A seaport since its earliest days, Charleston today also operates a thriving commercial port. Annual events, including the Cooper River Bridge Run, Spoleto Festival USA, the Southeastern Wildlife Exposition, Charleston Food and Wine Festival, and Charleston Fashion Week, speak to the cultural depth of the city.

Geologically, Charleston is located within the classic mesotidal, mixed-energy barrier coastline of the South Atlantic Bight. As such, the surrounding area presents unparalleled opportunity for exploring topics from Quaternary coastal geomorphology and coastal response to sea level changes, to paleoenvironmental research and earthquake hazards. The city is also situated within close range of the South Carolina

Piedmont, Sandhills, and Blue Ridge. The Technical Program, Field Trips, and Short Courses that have been developed for this meeting reflect this, covering a diverse range of topics that include offshore research, marine vertebrate paleontology, geoarchaeology, geologic hazards past and present, new technologies for mapping, hydrologic processes and applications in the Coastal Plain, limnogeology, terrane accretion, and faults and shear zones, among others.

Climate

The spring months in Charleston bring variable temperatures generally ranging from 58° F to 72° F. Participants in any of the meeting's field trips, particularly any boat-based excursions, should be prepared with warmer layers.

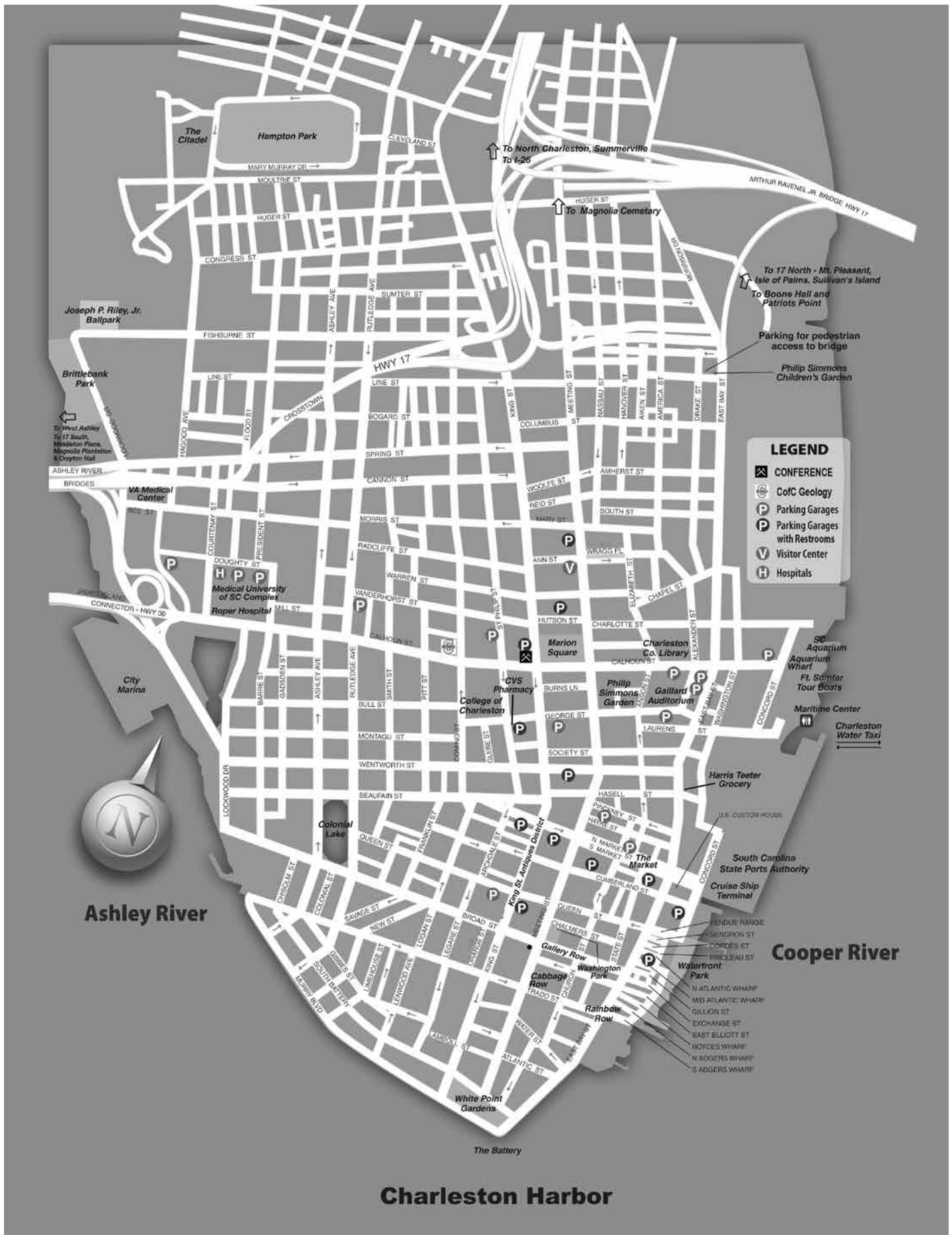
Transportation and Directions

Charleston is situated at the eastern terminus of I-26 and is also located along U.S. Route 17 (Hwy 17), making it a convenient driving destination for most attendees. The city is also served by the Charleston International Airport (CHS), and an Amtrak train station. Taxi or ridesharing fare from the airport to downtown is approximately \$20-\$30. Car rental is also available through most major providers, and is located across from the airport baggage claim.

The historic downtown area is easily accessible on foot from the Francis Marion Hotel. For transportation downtown, the Charleston Downtown Area Shuttle (DASH) is free and stops at five locations in the historic downtown area, including the South Carolina Aquarium and Charleston Visitor Center. The Charleston Area Regional Transportation Authority (CARTA) also operates bus routes to other areas of the city and region. Schedules and routes are available at <https://www.ridecarta.com/maps-schedules/>, and via the meeting transportation web application. Hourly and daily bike rentals are also available through Holy City Spokes at several locations close to the meeting venue: <https://charlestonbikeshare.com/>.

The Francis Marion Hotel is located at 387 King Street, Charleston, South Carolina 29403. The Hotel is on the southwest corner of Calhoun and King Streets. Guests may pull up to the front door on King Street for unloading and check-in.

Driving from the Northwest (Greenville, South Carolina; Columbia, South Carolina; Western North Carolina; Tennessee): Take I-26 E towards Charleston. Take Exit 221B for Meeting Street towards Visitor Center, turn right on Meeting Street. Continue driving south on Meeting Street until reaching Calhoun Street, take a right on Calhoun Street. The hotel is located a block down Calhoun Street;



take the right onto King Street and the parking garage for the hotel will be on the left, about half-way down the block.

Driving from the West (Atlanta, Georgia; Alabama): From Atlanta, take I-20 E towards Aiken to SC-39 S/State Highway 39S. Take Exit 33. Highway 39 S will become SC-394 and then SC-172. Take the exit for I-26 E. Follow signs for Charleston, and take Exit 221B for Meeting Street. Continue driving south on Meeting Street until reaching Calhoun Street, take a right on Calhoun Street. The hotel is located a block down Calhoun Street; take the right onto King Street and the parking garage for the hotel will be on the left, about half-way down the block.

Driving from the North (central North Carolina; Virginia): Take I-95 S towards Florence, South Carolina. Take Exit 86A for I-26 E towards Charleston. Continue on I-26 E, and take Exit 221B for Meeting Street. Continue driving south on Meeting Street until reaching Calhoun Street, take a right on Calhoun Street. The hotel is located a block down Calhoun Street; take the right onto King Street and the parking garage for the hotel will be on the left, about half-way down the block.

Driving from the Northeast (Myrtle Beach, South Carolina; Wilmington, North Carolina; Outer Banks): Take US Highway 17 South through northern coastal South Carolina. After passing through Mt. Pleasant, South Carolina on the Ravenel Bridge, use the right lane to take the Morrison Drive ramp onto East Bay Street. At the bottom of the ramp, use any lane to turn left onto Morrison Drive; continue on as it turns into East Bay Street. Continue straight on East Bay Street until reaching Calhoun Street. Take a right. The hotel is located three blocks down Calhoun Street; take the right onto King Street and the parking garage for the hotel will be on the left side of the street, about half-way down the block.

Driving from the South (Beaufort, SC; coastal Georgia; Florida): Follow I-95 north until Exit 33 (US Highway 17 North). Once on US-17 N, follow it through West Ashley, over the Ashley River Bridge into downtown Charleston, using the right lane to take the Lockwood Drive exit toward the Visitor's Center. Merge onto Lockwood Drive, staying in the left-hand lane. Turn left onto Calhoun Street. Continue onto Calhoun Street until reaching King Street; take a left on King Street. The parking garage for the hotel will be on the left side of the street, about half-way down the block.

By Train: Charleston has Amtrak train service connecting the city to large metropolitan areas within the Southeast (Richmond, Washington DC, Atlanta). For schedules and fares, please refer to <http://www.amtrak.com/home>. The station is located at 4565 Gaynor Avenue, North Charleston, South Carolina 29405. Once at the station, the Francis Marion Hotel is a 15-20 minute drive by car.

By Air: Charleston International Airport (CHS) is located approximately 12 miles northwest of downtown Charleston, and is served by Alaska Airlines, Allegiant, Delta Airlines, JetBlue, American Eagle, Frontier Airlines, United, and Southwest. Non-stop service on these carriers is available between Charleston and major metropolitan areas within the Southeast including Charlotte (CLT), Washington DC (DCA and IAD), Miami (MIA), and Atlanta (ATL). The

hotel does not provide shuttle services. Once at the airport, the Francis Marion Hotel is a 15-20 minute drive by car.

Accommodations

A block of rooms has been reserved at the Francis Marion Hotel (387 King Street, Charleston, SC, 29403). The meeting rate is US\$219 per night plus tax. The deadline to qualify for this rate was 26 February, 2019, and there may still be some rooms available. Reservations can be made by calling +1-843-722-0600. Please be sure to let them know that you are attending the GSA Southeastern Section Meeting. We strongly encourage all meeting attendees to reserve rooms at the Francis Marion Hotel, the meeting venue.

Parking

Parking is available in the Marion Square Garage, next door to the Francis Marion Hotel, at 399 King Street, Charleston SC, 29403. Parking is \$20 per day for self-parking, payable to the garage attendant by MasterCard, Visa, or cash. Valet parking is available at a \$25 per day, with the fee automatically charged to your room bill.

Registration

Registration is required to participate in all events associated with the meeting, including technical sessions, field trips, short courses, 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 reduced rates.

Registration Schedule

On-site registration and badge pick-up is located on the Mezzanine Level of the hotel, on the following schedule:

Wednesday, 27 March: 3:30–7 p.m.

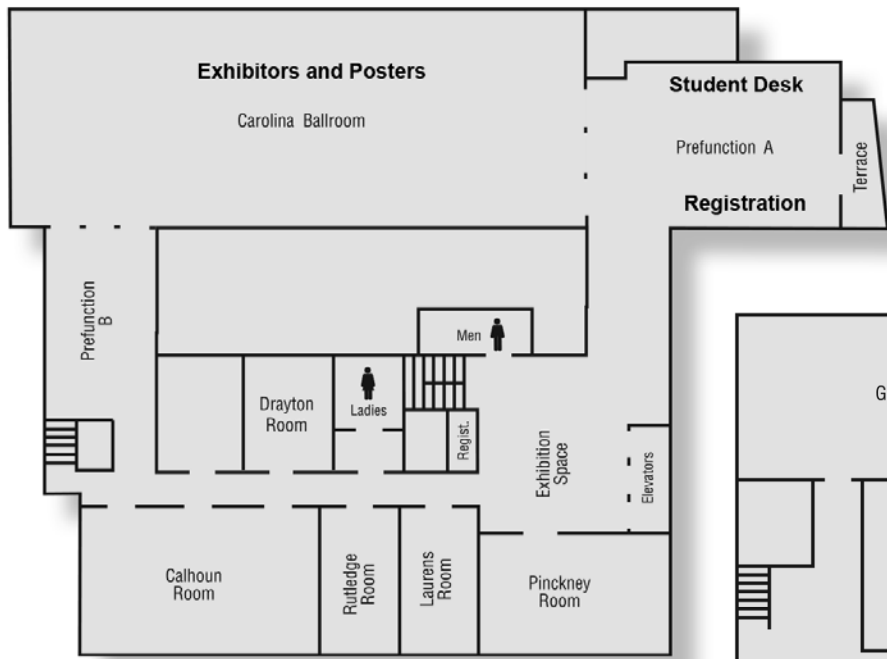
Thursday, 28 March: 7 a.m.–5 p.m.

Friday, 29 March: 7 a.m.–2 p.m.

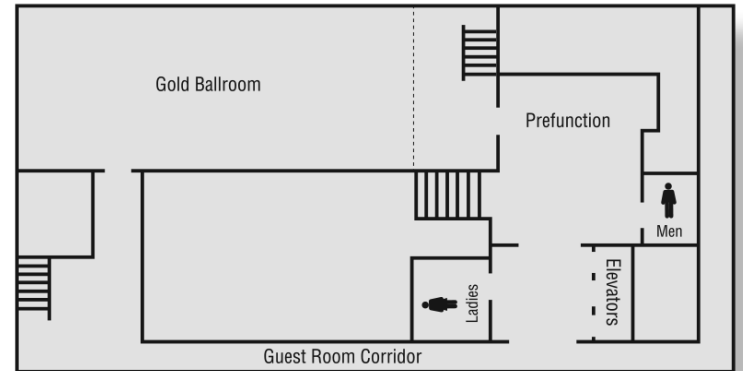
On-Site Registration Fees:

	Full Meeting	One Day
Professional Member.....	\$250	\$170
Professional Nonmember.....	\$275	\$190
Early Career Prof Member.....	\$185	\$125
Student Member.....	\$100	\$80
Student Nonmember.....	\$130	\$110
K-12 Professional.....	\$55	\$50
Guest.....	\$40	n/a
Field Trip/Workshop only.....	\$40	n/a

Guest registration is intended for non-geoscientist spouses or friends, and does not include attendance at technical sessions, field trips, or short courses. A registered professional, student, or K-12 attendee must accompany guest registrants.

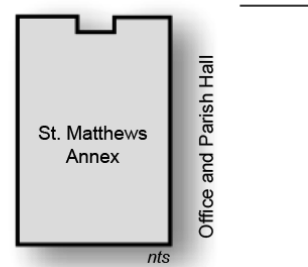


Mezzanine/Meeting Level

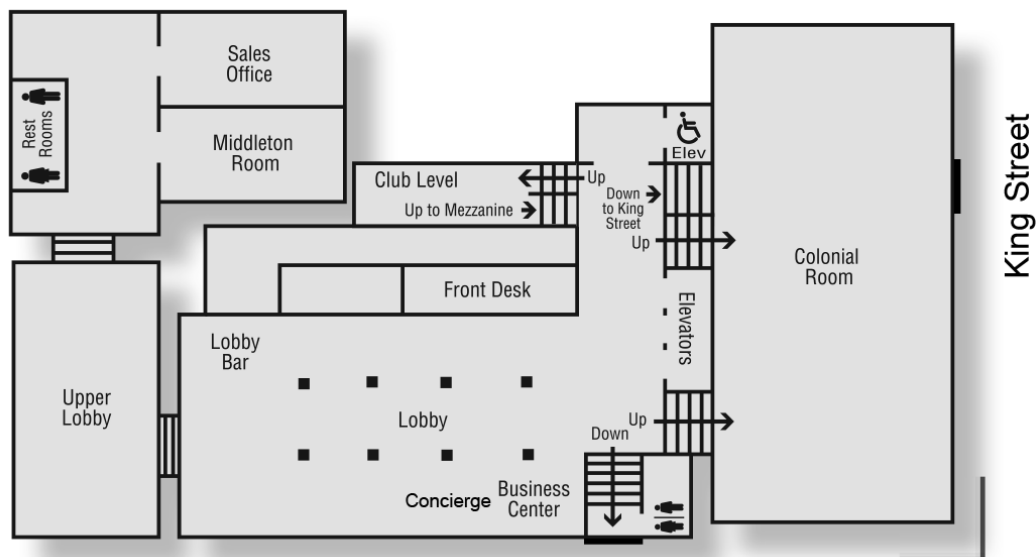


The Gold Ballroom/Second Floor

Vanderhorst Street



St. Matthews Church



Calhoun Street

The Colonial Room/Lobby Level

Students and K–12 professionals must show a current photo ID at registration to obtain applicable rates.

Cancellations, Changes, and Refunds

Requests for additions, changes, and cancellations must have been made in writing to GSA Headquarters, in writing, by 25 February. No refunds will be made on cancellation notices received after this date. GSA cannot provide refunds for on-site registration or event ticket sales. 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.

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/2019SE/meetingapp.cgi>.

Accessibility

GSA is committed to ensuring full participation for all conference attendees. You may indicate special requirements on your registration form; please inform the local organizing committee of these requirements at least one month prior to the meeting. Accessible rooms at the hotel are available and can be reserved.

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.

Special Events and Activities

Wednesday, 27 March

Birdsall-Dreiss Lecture. 4:30–5:30 p.m., Colonial Ballroom. Join us as Dr. Laura Crossey of the University of New Mexico, GSA Hydrogeology Division's 2019 Birdsall-Dreiss Distinguished Lecturer, presents a lecture entitled **Hydrochemistry and Geoscience Education at Grand Canyon and Beyond: Who Knew Groundwater Hydrology Could Be So Complicated?**

Welcoming Reception. 5–7 p.m., Carolina Ballroom. Join us to visit with friends and colleagues and officially kick off the meeting. Exhibits will be open, and hors d'oeuvres and one commentary drink are included with each registration. A cash bar will also be available.

Thursday, 28 March

Session Chairs Orientation. 7–7:30 a.m., Calhoun Room. Coffee and pastries will be served.

Southeastern Section Management Board Business Meeting and Breakfast. 6:30–8 a.m., Laurens Room.

Shlemon Mentors Student Luncheon. Noon–1:30 p.m., Gold Ballroom.

Keynote Address. 5:15–6:15 p.m., Colonial Ballroom. Join us as Dr. John Lane, Chief of the USGS Hydrogeophysics branch, presents **In Search of X-ray Vision: Perspectives on the (r)Evolution of Hydrogeophysics.**

Remembering Dr. Robert Tracy—Friends of Bob Reception. 7–9 p.m., Parkview Room, Fox Swamp Restaurant. Join us at this event in remembrance of the life of Dr. Robert Tracy, metamorphic petrologist, dedicated member of GSA, and beloved Virginia Tech professor. Light hors d'oeuvres and a cash bar will be available. A remembrance talk is also scheduled from 4:40 – 5 p.m., at the end of session T14. **Origin and Significance of Ultramafic Bodies in Suture Zones from the Appalachians and Beyond** (Pinckney Room, Francis Marion Hotel).

Friday, 29 March

Session Chairs Orientation. 7–7:30 a.m., Calhoun Room. Coffee and pastries will be served.

GSA Campus Representative Appreciation Breakfast. 7–8 a.m., Laurens Room. This complimentary breakfast for Campus Reps is held to say Thank You. If you are a campus representative or are interested in becoming one please plan to attend this celebratory event.

Town Hall Session: GSA Strategic Planning Initiative. Noon–1 p.m., Colonial Ballroom. Please join GSA Executive Director Vicki McConnell for an update on GSA's Strategic Planning. This is an opportunity to interact with leadership and ask questions about the future plans for GSA.

Mann Mentors Student Luncheon. Noon–1:30 p.m., Gold Ballroom.

Geology Club Officer Meet-Up. 2–3 p.m., Laurens Room. Chat with other representatives about their activities, goals, and accomplishments.

Opportunities for Students

Roy J. Shlemon Mentors Program in Applied Geoscience. Thursday, 28 March, noon–1:30 p.m., Gold Ballroom. Jennifer Nocerino, jnocerino@geosociety.org. The Shlemon Mentors Program is designed to extend the mentoring reach of individual professionals from applied geology to students and early career professionals attending GSA section meetings. Over free lunches, mentors and attendees discuss real-life issues including professional opportunities and challenges. Space is limited; first come, first served.

John Mann Mentors Program in Applied Hydrogeology. Friday, 29 March, noon–1:30 p.m., Gold Ballroom. 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 attendees and mentors. Space is limited; first come, first served.

GSA Career Workshops

Geoscience Career Program Workshop Part 1: Career Planning and Informational Interviewing. Thurs., 28 March, 9–10 a.m., Laurens Room. Your job hunting process should begin with career planning, not when you apply to jobs. This workshop will help you begin this process and will introduce you to informational interviewing. This section is highly recommended for freshman, sophomores, and juniors. The earlier you start your career planning the better.

Geoscience Career Program Workshop Part 2: Geoscience Career Exploration. Thurs., 28 March, 10–11 a.m., Laurens Room. What do geologists in various sectors earn? What do they do? What are the pros and cons to working in academia, government, and industry? Workshop presenters and professionals in the field will address these issues.

Geoscience Career Program Workshop Part 3: Cover Letters, Résumés, and CVs. Fri., 29 March, 9–10 a.m., Laurens Room. How do you prepare a cover letter? Does your résumé need a good edit? Whether you are currently in the market for a job or not, learn how to prepare the best résumé possible. You will review numerous résumés helping you to learn important résumé dos and don'ts.

Geoscience Career Program Workshop Part 4: Professional Geologist Licensure. Fri., 29 March, 10–11 a.m., Laurens Room. Are you aware that geologists require a license to conduct professional practice in 32 states and Puerto Rico? Did you know that there is testing as part of the licensing requirement, that should be taken right after you finish your undergraduate degree? Many employers in the engineering and environmental services sectors seek to hire geoscientists with this credential. This workshop will inform students and early career professionals on the importance of the licensure process.

Student Volunteers

Students accepted as meeting volunteers must check in at the Student Volunteer Desk, located at the student registration booth on the Mezzanine/Meeting Level on the 2nd Floor.

Exhibits

Exhibitors are located in the Carolina Ballroom on the Hotel's second (mezzanine) level. Hours for Exhibits are:

Set up: Wednesday, 27 March, 10 a.m.–5 p.m.

Open: Wednesday, 27 March, 5–7 p.m.

Open: Thursday, 28 March, 9 a.m.–5 p.m.

Open: Friday, 29 March, 9 a.m.–5 p.m.

Tear down: Friday, 29 March, 5–9 p.m.

As of mid-January Exhibitors include:

2020 Southeastern/Northeastern Joint Meeting
American Institute of Professional Geologists (AIPG)
Aurora Fossil Museum
Association for Women Geoscientists (AWG)
Clemson University

Gems and Crystal Unlimited

Geological Society of America Bookstore

Geological Society of America Foundation

Guideline Geo Americas

High-Purity Standards

Martin Microscopes

Mineralogical Society of America

National Association of State Boards of Geology

University of North Carolina at Charlotte

University of North Carolina at Wilmington

Test Your Knowledge

Think you know all there is to know about careers in the geosciences? Come test that knowledge at the GSA Foundation booth in the exhibit hall. Whoever gets the most answers correct over the course of the meeting will win a prize!

Technical Program

Technical sessions begin at 8 a.m., Thursday, 28 March and conclude by 5 p.m. on Friday, 29 March. All technical sessions (oral and poster) are located within the Francis Marion Hotel, or in the additional meeting space next door at St. Matthew's Church Annex (405 King Street, entrance to the presentation room is on Vanderhorst Street across from Kudu Coffee and Craft Beer). Coffee breaks are offered at 10 a.m. and 3 p.m. on Thursday and Friday.

Information for Presenters

Unless otherwise noted, each speaker will be allotted a time of 20 minutes for oral presentations (17 minutes for presentation; 3 minutes for questions, discussion, and transition). Presentations must be prepared using PowerPoint or PDF formats. One laptop with Windows 7 PowerPoint 2013, one LCD projector, and one screen will be provided for all oral sessions. In addition, each room is equipped with a lectern microphone, wireless microphone, wireless computer mouse and PowerPoint advancer, and a speaker timer. All screens will be in widescreen (16:9) format. **Speakers may not use their own laptops for presentation.**

All poster sessions are in the Carolina Ballroom on the Mezzanine level (2nd Floor) in the Exhibits Hall. Authors in the morning sessions are asked to have their posters in place by 7:45 a.m. and taken down at noon. Afternoon posters may be put up at 12:45 p.m. and taken down at 5 p.m. 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.

Poster presenters have one 4'x 8' (1219mm x 2438mm) horizontal "landscape" poster display surface, and numbers on the poster boards correspond to the poster booth numbers listed in the Program. Pushpins will be provided. For student presenters, please discuss the fonts and layout of your poster with your advisor so you can have the highest impact for your visitors.

Speaker Ready Room

All oral session presenters must load their presentation at the Speaker Ready Room located in the Drayton Room, prior to their scheduled session to ensure that their PowerPoint or PDF file is properly configured. Failure to do so may result in presentations being omitted from session sequences. The Speaker Ready Room will be open as follows:

Wednesday, 27 March: 3–7 p.m.

Thursday, 28 March: 7 a.m.–7 p.m.

Friday, 29 March: 7 a.m.–2 p.m.

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) to the Speaker Ready Room for uploading to their session's folder according to the deadlines below. 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.

For Presentation	Upload No Later Than:
Thursday, 28 March, AM	7 p.m., Wednesday, 27 March
Thursday, 28 March, PM	noon, Thursday, 28 March
Friday, 29 March, AM	7 p.m., Thursday, 28 March
Friday, 29 March, PM	noon, Friday, 29 March

Information for Session Chairs

Session chairs are required to attend a Session Chairs Orientation, to be held 7–7:30 a.m., in the Calhoun Room on Thursday, 28 March and Friday, 29 March. Session chairs are requested to adhere to the schedule and to encourage the strict time limits provided to speakers.

Technical Program Sessions

Theme Sessions

T1. Behavior of Animals, Dead or Alive: Neoichnology Informing Ichnology. *Paleontological Society*. Patricia Kelley, Univ. of North Carolina–Wilmington; Anthony J. Martin, Emory Univ.

T3. Gondwana vs. Laurentia: Terrane Accretion and Crustal Growth in the Southeastern United States. *GSA Mineralogy, Geochemistry, Petrology, and Volcanology Division; GSA Geochronology Division; GSA Structural Geology and Tectonics Division*. Paul A. Mueller, Univ. of Florida; James Tull, Florida State Univ.; Jim Knapp, Univ. of South Carolina.

T4. Marine Vertebrate Paleontology of the Atlantic and Gulf Coastal Plains. *Paleontological Society; GSA Geochronology Division*. Robert W. Boessenecker, College of Charleston; Rachel A. Racicot, Claremont College; Sarah J. Boessenecker, College of Charleston; Matthew L. Gibson, Charleston Museum; N. Adam Smith, Clemson Univ.

T5. A Window into Regional Deformation and Sedimentation through Geo-, Thermo-, and Petrochronology. *Mineralogical Society of America; GSA*

Mineralogy, Geochemistry, Petrology, and Volcanology Division; GSA Geochronology Division; GSA Structural Geology and Tectonics Division. David L. Barbeau, Jr., Univ. of South Carolina; Alex Pullen, Clemson Univ.; Andrew L. Leier, Univ. of South Carolina.

T6. Limnogeology: Sedimentary Records from Modern and Ancient Lakes. *GSA Limnogeology Division; GSA Geochronology Division; GSA Quaternary Geology and Geomorphology Division*. Michael McGlue, Univ. of Kentucky; Eva Lyon, Univ. of Kentucky.

T7. Past and Future Coastal Evolution in Response to Sea-Level Changes and Storm Impacts. *GSA Quaternary Geology and Geomorphology Division; GSA Geology and Society Division*. Michael Fenster, Randolph-Macon College; Duncan FitzGerald, Boston Univ.

T8. Innovations in Earth-Science Education. *GSA Energy Geology Division*. Cynthia Hall, College of Charleston; Rodney Moore, Charleston County School District; Gina Boyd, Berkeley County School District.

T9. Offshore Research on the Mid- and South-Atlantic Continental Shelf. *GSA Energy Geology Division*. Katie Luciano, South Carolina Geological Survey; William Lassetter, DMME-DGMR; D. Reide Corbett, East Carolina Univ.; Clark Alexander, Skidaway Institute of Oceanography; David Mallinson, East Carolina Univ.; Scott Howard, South Carolina Geological Survey; Scott Harris, College of Charleston.

T10. Sedimentary Systems of the Post-Alleghanian Eastern U.S. Atlantic Margin: Implications for Geologic Evolution, Resource Potential, and Carbon Sequestration. *GSA Energy Geology Division; GSA Geology and Society Division*. Andrew Parent, Virginia Tech; Cody Mason, Univ. of West Georgia.

T11. UAV/Drone Technology and Spatial Metrics for the Coastal Zone. *GSA Quaternary Geology and Geomorphology Division*. Narcisa Pricope, Univ. of North Carolina–Wilmington; Joanne Halls, Univ. of North Carolina–Wilmington.

T12. Natural Hazards Prediction. *GSA Mineralogy, Geochemistry, Petrology, and Volcanology Division; GSA Quaternary Geology and Geomorphology Division; GSA Geology and Society Division; GSA Karst Division*. Antonios E. Marsellos, Hofstra Univ.; Katerina Tsakiri, Rider Univ.; Bret Bennington, Hofstra Univ.; Jase Bernhardt, Hofstra Univ.; Menas Kafatos, Chapman Univ.

T13. Reconstructing Paleo-Environmental Changes. *GSA Limnogeology Division; GSA Soils and Soil Processes Division; GSA Mineralogy, Geochemistry, Petrology, and Volcanology Division*. Theodore Them, College of Charleston; Benjamin Gill, Virginia Tech; Jeremy Owens, Florida State Univ.; Seth Young, Florida State Univ.

T14. Origin and Significance of Ultramafic Bodies in Suture Zones from the Appalachians and Beyond. *GSA Mineralogy, Geochemistry, Petrology, and Volcanology Division; GSA Structural Geology and Tectonics Division*. Céline Martin,

Univ. of North Carolina—Charlotte; Christopher M. Bailey, College of William & Mary.

T15. Geologic Studies of the U.S. Atlantic Coastal Plain.

GSA Soils and Soil Processes Division; GSA Geochronology Division; GSA Quaternary Geology and Geomorphology Division. William R. Doar III, South Carolina Geological Survey; Christopher S. Swezey, U.S. Geological Survey.

T16. Undergraduate Research (Posters).

Council on Undergraduate Research Geosciences Division; GSA Limnogeology Division; GSA Energy Geology Division; GSA Quaternary Geology and Geomorphology Division; GSA Structural Geology and Tectonics Division. Lee Phillips, Univ. of North Carolina—Greensboro; Jeff Ryan, Univ. of South Florida.

T17. Recent Advances and New Approaches in the Study of Faults and Shear Zones in Orogenic Systems.

GSA Structural Geology and Tectonics Division. Jackie Langille, Univ. of North Carolina—Asheville; Timothy Diedesch, Georgia Southern Univ.

T18. Hydrological Processes and Problems across the Southeastern United States.

GSA Soils and Soil Processes Division; GSA Quaternary Geology and Geomorphology Division; GSA Geology and Society Division; GSA Karst Division. JP Gannon, Western Carolina Univ.; Mark Lord, Western Carolina Univ.; David Kinner, Western Carolina Univ.

T19. Recent Advances in Saltmarsh Evolution, (Eco) Geomorphology, and Sustainability.

GSA Soils and Soil Processes Division; GSA Quaternary Geology and Geomorphology Division; GSA Geology and Society Division. Carol Wilson, Louisiana State Univ.; Zoe Hughes, Boston Univ.; Alejandra C. Ortiz, North Carolina State Univ.

T20. The Science, Environmental Impacts, and Policy of Beach Nourishment.

GSA Quaternary Geology and Geomorphology Division; GSA Geology and Society Division. Robert S. Young, Western Carolina Univ.; Andrew Coburn, Western Carolina Univ.

T21. Mesozoic to Cenozoic Tectonics and Magmatism of the Southeastern United States.

GSA Mineralogy, Geochemistry, Petrology, and Volcanology Division; GSA Geochronology Division; GSA Structural Geology and Tectonics Division. Erin Beutel, College of Charleston; John Chadwick, College of Charleston.

T22. Applications of Hydrology and Biogeochemistry to Stormwater Management.

GSA Limnogeology Division; GSA Geology and Society Division; GSA Karst Division. James J. Connors, James J. Connors & Associates LLC; Barbara A. Beckingham, College of Charleston; Vijay M. Vulava, College of Charleston; Timothy J. Callahan, College of Charleston; M. Richard DeVoe, South Carolina Sea Grant Consortium.

T23. Technology and Mapping in the 21st Century.

GSA Structural Geology and Tectonics Division. Norman S. Levine, College of Charleston; K. Adem Ali, College of Charleston; M. Scott Harris, College of Charleston; Leslie R. Sautter, College of Charleston.

T24. Geoarchaeology.

GSA Soils and Soil Processes Division; GSA Quaternary Geology and Geomorphology

Division; GSA Geoarchaeology Division. Ervan Garrison, Univ. of Georgia; Jessica Cook Hale, Univ. of Georgia.

Field Trips

All field trips meet and depart from the King Street Entrance of the Francis Marion Hotel.

Pre-Meeting

FT1. A Walking Tour of Earthquake Damage in Historic Charleston.

Wed., 27 Mar., 1–4 p.m. Cost: US\$10. Maximum 25 participants. Leaders: Steven C. Jaumé, College of Charleston, jaumes@cofc.edu; Norman Levine, College of Charleston, levinen@cofc.edu.

Description: This two- to three-hour walking tour of historic Charleston will highlight visible damage from the 1886 M=7 earthquake.

FT2. Rerouting Water: Understanding and Managing Urban Hydrology in Historic Charleston.

Wed., 27 Mar., 1–4 p.m. Cost: US\$25. Maximum 30 participants. Leaders: Guinn Wallover, Clemson Univ. Cooperative Extension Service, cggarre@clemson.edu; Timothy Callahan, College of Charleston, callahant@cofc.edu; Amy Scaroni, Clemson Univ. Cooperative Extension Service, ascaron@clemson.edu; Kim Morganello, Clemson Univ. Cooperative Extension Service, kcounts@clemson.edu.

Description: How do you balance economic and preservationist constraints on stormwater management when faced with urbanization, sea-level rise, and hurricane threats? This trip will explore how hydrology has shaped Charleston and how engineers, public officials, and citizens incorporate new technologies in design to increase community resiliency.

Post-Meeting

FT4. Neoichnology of Edisto Island: Eat, Prey, Love, Burrow.

Sat., 30 Mar., 8 a.m.–5 p.m. Cost: US\$45. Maximum 20 participants. Leaders: Anthony J. Martin, Emory University; Patricia Kelley, University of North Carolina—Wilmington.

Description: This is a one-day field trip to Edisto Island, South Carolina, in which participants will learn how modern traces of invertebrates and vertebrates—tracks, burrows, predation traces, and more—can be applied to better interpret trace fossils made by similar animals in near-coastal environments.

FT5. A Walking Tour of Earthquake Damage in Historic Charleston.

Sat., 30 Mar., 9 a.m.–noon. Cost: US\$10. Maximum 25 participants. Leaders: Steven C. Jaume, College of Charleston, jaumes@cofc.edu; Norman Levine, College of Charleston, levinen@cofc.edu.

Description: This two- to three-hour walking tour of historic Charleston will highlight visible damage from the 1886 M=7 earthquake.

FT6. Paleontology of the “Ashley Phosphate Beds” of Charleston.

Sat., 30 Mar., 10 a.m.–1 p.m. Cost: US\$25. Maximum 30 participants. Leaders: Robert W. Boessenecker, College of Charleston, boesseneckerrw@cofc.edu; Rachel A. Racicot, Claremont College, rachel.racicot@gmail.com; Sarah J. Boessenecker, College of Charleston,

michaliess@cofc.edu; Matthew L. Gibson, Charleston Museum, mgibson@charlestonmuseum.org; N. Adam Smith, Clemson Univ., smith23@clemson.edu.

Description: The “Ashley Phosphate Beds,” mined extensively in Charleston after the Civil War, produced numerous scientifically significant vertebrate fossils in the late 1800s. Northbridge Park on the bank of the Ashley River routinely yields dredged phosphate and fossils of sharks, fish, and marine mammals originating from the Oligocene Ashley Formation.

FT7. The Dynamics of the South Carolina Coast—Barrier Islands, Wetlands, Rivers, and the Delta. Sat., 30 Mar., 7:30 a.m.–Sun., 31 Mar., 7 p.m. Cost: US\$350. Maximum 15 participants. Leaders: Till J.J. Hanebuth, Coastal Carolina Univ., thanebuth@coastal.edu; Zoe Hughes, Boston Univ., zoeh@bu.edu; Joshua H. Long, Coastal Carolina Univ., jhlong@coastal.edu; Duncan M. Fitzgerald, Boston Univ., dunc@bu.edu.

Description: Coastal South Carolina comprises various geomorphic elements, shaped by climatic, hydrodynamic, ecological, and anthropogenic forcing. This two-day boat-based field trip to Cape Romain, the Santee Delta, and the Sampit River, with an overnighting in Georgetown, will target wetland ecogeomorphic feedbacks, barrier-inlet evolution, the history of the delta, and consequences of anthropogenic modification.

Short Courses

All short course participants will meet in the lobby of Francis Marion Hotel at 9 a.m. on Saturday, 30 March.

Post-Meeting

SC1. Earthquakes, Sea-Level Rise, and Fossils, Oh My ... Earth Science Issues from the Lowcountry to Engage Your K–12 Students. Sat., 30 Mar., 9 a.m.–noon. Cost: Free. Maximum 25 participants. Leaders: Cynthia Hall, College of Charleston, hallcr@cofc.edu; Erin Beutel, College of Charleston, beutele@cofc.edu; Sarah Michalies, College of Charleston, michaliess@cofc.edu; Cass Runyon, College of Charleston, runyonc@cofc.edu.

Description: Engage in local issues to excite your students in problem solving. From engineering structures to withstand earthquakes, like that of the 1886 Charleston one, to designing solutions for a community in the path of sea level rise, to understanding changing environments by looking at local transition fossils, educators will get a solid foundation in content, while developing integration strategies.

SC2. Field Geophysics Using ABEM WalkTEM, ABEM Terrameter, and Mala Ground-Penetrating Radar. Sat., 30 Mar., 9 a.m.–noon. Cost: Free. Leaders: Amber Onufer, Guideline Geo (ABEM and Mala), aon@malags.com; Per Westholm, Guideline Geo, per.westholm@guidelinegeo.com.

Description: A presentation on basic theory and application followed by field demonstration of resistivity, time-domain EM, and ground penetrating radar. Highlighting the applications and functionality of each, we plan to use each system to gather data at a local site for evaluation.

Cultural and Recreational Activities

A wide variety of sightseeing, dining, and entertainment options are available within close reach of the hotel. To help you and your guests navigate the historic city with ease, students with the College of Charleston have compiled information on dining, entertainment, sightseeing, and transportation in a set of easily accessible web and mobile applications, available on the meeting website. We will also have various websites, apps, and handouts documenting and directing you to our favorite local cuisine, nightlife, and tourism options. Please look near the Francis Marion Hotel Concierge desk for details.

The Francis Marion Hotel boasts a fitness center and day spa. On the ground floor of the hotel, the Swamp Fox Restaurant serves classic Southern cuisine for breakfast, lunch, and dinner. Starbucks Coffee is also located on the ground floor of the hotel.

Schedule of Events

EVENT	TIME	LOCATION
WEDNESDAY, 11 APRIL		
Exhibits Set-up	10 a.m.–5 p.m.	Carolina Ballroom
FT1. A Walking Tour of Earthquake Damage in Historic Charleston (Field Trip)	1–4 p.m.	Francis Marion Hotel, King Street Entrance
FT2. Rerouting Water: Understanding and Managing Urban Hydrology in Historic Charleston (Field Trip)	1–4 p.m.	Francis Marion Hotel, King Street Entrance
Speaker Ready Room	3–7 p.m.	Drayton Room
Registration	3:30–7 p.m.	Mezzanine Level
Birdsall-Dreiss Lecture	4:30–5:30 pm	Colonial Ballroom
Exhibits	5–7 p.m.	Carolina Ballroom
Welcoming Reception	5–7 p.m.	Carolina Ballroom
THURSDAY, 28 MARCH		
Southeastern Section Management Board Business Meeting and Breakfast	6:30–8 a.m.	Laurens Room
Session Chairs Orientation	7–7:30 am	Calhoun Room
Registration	7 a.m.–5 p.m.	Mezzanine Level
Speaker Ready Room	7 a.m.–7 p.m.	Drayton Room
Morning Oral Technical Sessions		
T1. Behavior of Animals, Dead or Alive: Neoichnology Informing Ichnology	8 a.m.–noon	Pinckney Room
T13. Reconstructing Paleo-Environmental Changes I	8 a.m.–noon	Gold Ballroom
T18. Hydrological Processes and Problems across the Southeastern United States	8 a.m.–noon	St. Matthews Room
T7. Past and Future Coastal Evolution in Response to Sea-Level Changes and Storm Impacts	8:20 a.m.–noon	Colonial Ballroom
T24. Geoarchaeology	8:20 a.m.–noon	Rutledge Room
T15. Geologic Studies of the U.S. Atlantic Coastal Plain	8:40 a.m.–noon	Calhoun Room
Morning Poster Sessions:		
T3. Gondwana vs. Laurentia: Terrane Accretion and Crustal Growth in the Southeastern United States (Posters)	8 a.m.–noon	Carolina Ballroom
T4. Marine Vertebrate Paleontology of the Atlantic and Gulf Coastal Plains (Posters)	8 a.m.–noon	Carolina Ballroom

EVENT	TIME	LOCATION
T6. Limnogeology: Sedimentary Records from Modern and Ancient Lakes (Posters)	8 a.m.–noon	Carolina Ballroom
T8. Innovations in Earth Science Education (Posters)	8 a.m.–noon	Carolina Ballroom
T10. Sedimentary Systems of the Post-Alleghanian Eastern U.S. Atlantic Margin: Implications for Geologic Evolution, Resource Potential, and Carbon Sequestration (Posters)	8 a.m.–noon	Carolina Ballroom
T17. Recent Advances and New Approaches in the Study of Faults and Shear Zones in Orogenic Systems (Posters)	8 a.m.–noon	Carolina Ballroom
T21. Mesozoic to Cenozoic Tectonics and Magmatism of the Southeastern United States (Posters)	8 a.m.–noon	Carolina Ballroom
T23. Technology and Mapping in the 21st Century (Posters)	8 a.m.–noon	Carolina Ballroom
Exhibits	9 a.m.–5 p.m.	Colonial Ballroom
Geoscience Career Program Workshop Part 1: Career Planning and Informational Interviewing	9–10 a.m.	Laurens Room
Geoscience Career Program Workshop Part 2: Geoscience Career Exploration	10–11 a.m.	Laurens Room
Roy J. Shlemon Mentors Program in Applied Geoscience	noon–1:30 p.m.	Gold Ballroom
Afternoon Oral Technical Sessions		
T20. The Science, Environmental Impacts, and Policy of Beach Nourishment	1:40–3 p.m.	Colonial Ballroom
T23. Technology and Mapping in the 21st Century	1:40–4:20 p.m.	Calhoun Room
T8. Innovations in Earth Science Education	1:40–4:40 p.m.	Rutledge Room
T17. Recent Advances and New Approaches in the Study of Faults and Shear Zones in Orogenic Systems	2–3 p.m.	Pinckney Room
T13. Reconstructing Paleo-Environmental Changes II	2–5:05 p.m.	Gold Ballroom
T14. Origin and Significance of Ultramafic Bodies in Suture Zones from the Appalachians and Beyond	3:20–4:40 p.m.	Pinckney Room
T19. Recent Advances in Saltmarsh Evolution, (Eco) Geomorphology, and Sustainability	3:20–4:40 p.m.	Colonial Ballroom
Afternoon Poster Sessions:		
T12. Natural Hazards Prediction (Posters)	1–5 p.m.	Carolina Ballroom
T16. Undergraduate Research I (Posters)	1–5 p.m.	Carolina Ballroom
T18. Hydrological Processes and Problems across the Southeastern United States (Posters)	1–5 p.m.	Carolina Ballroom
T22. Applications of Hydrology and Biogeochemistry to Stormwater Management (Posters)	1–5 p.m.	Carolina Ballroom
T24. Geoarchaeology (Posters)	1–5 p.m.	Carolina Ballroom
Keynote Address: Dr. John Lane	5:15–6:15 p.m.	Colonial Ballroom
Remembering Dr. Robert Tracy—Friends of Bob Reception	7–9 p.m.	Parkview Room, Fox Swamp Restaurant

EVENT	TIME	LOCATION
FRIDAY, 29 MARCH		
Session Chairs Orientation	7–7:30 a.m.	Calhoun Room
GSA Campus Representative Appreciation Breakfast	7–8 a.m.	Laurens Room
Registration	7 a.m.–2 p.m.	Mezzanine Level
Speaker Ready Room	7 a.m.–2 p.m.	Drayton Room
Morning Oral Technical Sessions		
T22. Applications of Hydrology and Biogeochemistry to Stormwater Management	8 a.m.–noon	St. Matthews Room
T3. Gondwana vs. Laurentia: Terrane Accretion and Crustal Growth in the Southeastern United States	8:15 a.m.–noon	Colonial Ballroom
T9. Offshore Research on the Mid- and South-Atlantic Continental Shelf	8:20–11:20 a.m.	Rutledge Room
T5. A Window into Regional Deformation and Sedimentation through Geo-, Thermo-, and Petrochronology	8:20–11:40 a.m.	Pinckney Room
T4. Marine Vertebrate Paleontology of the Atlantic and Gulf Coastal Plains I	8:20 a.m.–noon	Calhoun Room
T6. Limnogeology: Sedimentary Records from Modern and Ancient Lakes I	8:30–11:40 a.m.	Gold Ballroom
Morning Poster Sessions:		
T13. Reconstructing Paleo-Environmental Changes (Posters)	8 a.m.–noon	Carolina Ballroom
T15. Geologic Studies of the U.S. Atlantic Coastal Plain (Posters)	8 a.m.–noon	Carolina Ballroom
T16. Undergraduate Research II (Posters)	8 a.m.–noon	Carolina Ballroom
Exhibits	9 a.m.–5 p.m.	Colonial Ballroom
Geoscience Career Program Workshop Part 3: Cover Letters, Résumés, and CVs	9–10 a.m.	Laurens Room
Geoscience Career Program Workshop Part 4: Professional Geologist Licensure	10–11 a.m.	Laurens Room
Town Hall Session: GSA Strategic Planning Initiative	noon–1 p.m.	Colonial Ballroom
John Mann Mentors Program in Applied Hydrogeology	noon–1:30 p.m.	Gold Ballroom
Afternoon Oral Technical Sessions		
T4. Marine Vertebrate Paleontology of the Atlantic and Gulf Coastal Plains II	1:40–3 p.m.	Calhoun Room
T21. Mesozoic to Cenozoic Tectonics and Magmatism of the Southeastern United States	1:40–3 p.m.	Rutledge Room
T6. Limnogeology: Sedimentary Records from Modern and Ancient Lakes II	2–3 p.m.	Gold Ballroom
T10. Sedimentary Systems of the Post-Alleghanian Eastern U.S. Atlantic Margin: Implications for Geologic Evolution, Resource Potential, and Carbon Sequestration	2–3 p.m.	Pinckney Room
T12. Natural Hazards Prediction	2–3 p.m.	St. Matthews Room
T11. UAV/Drone Technology and Spatial Metrics for the Coastal Zone	2–4:20 p.m.	Colonial Ballroom

EVENT	TIME	LOCATION
Afternoon Poster Sessions:		
T5. A Window into Regional Deformation and Sedimentation through Geo-, Thermo-, and Petrochronology (Posters)	1–5 p.m.	Carolina Ballroom
T7. Past and Future Coastal Evolution in Response to Sea-Level Changes and Storm Impacts (Posters)	1–5 p.m.	Carolina Ballroom
T9. Offshore Research on the Mid- and South-Atlantic Continental Shelf (Posters)	1–5 p.m.	Carolina Ballroom
T11. UAV/Drone Technology and Spatial Metrics for the Coastal Zone (Posters)	1–5 p.m.	Carolina Ballroom
T16. Undergraduate Research III (Posters)	1–5 p.m.	Carolina Ballroom
T19. Recent Advances in Saltmarsh Evolution, (Eco) Geomorphology, and Sustainability (Posters)	1–5 p.m.	Carolina Ballroom
T20. The Science, Environmental Impacts, and Policy of Beach Nourishment (Posters)	1–5 p.m.	Carolina Ballroom
Geology Club Officer Meet-Up	2–3 p.m.	Laurens Room
Exhibits Tear Down	5–9 p.m.	Colonial Ballroom

SATURDAY, 30 MARCH

FT7. The Dynamics of the South Carolina Coast—Barrier Islands, Wetlands, Rivers, and the Delta (Field Trip)	7:30 a.m.–11:55 p.m.	Francis Marion Hotel, King Street Entrance
FT4. Neoichnology of Edisto Island: Eat, Prey, Love, Burrow (Field Trip)	8 a.m.–5 p.m.	Francis Marion Hotel, King Street Entrance
FT5. A Walking Tour of Earthquake Damage in Historic Charleston (Field Trip)	9 a.m.–noon	Francis Marion Hotel, King Street Entrance
SC1. Earthquakes, Sea-Level Rise, and Fossils, Oh My ... Earth Science Issues from the Lowcountry to Engage Your K–12 Students (Short Course)	9 a.m.–noon	Francis Marion Hotel, Lobby
SC2. Field Geophysics Using ABEM WalkTEM, ABEM Terrameter, and Mala Ground-Penetrating Radar (Short Course)	9 a.m.–noon	Francis Marion Hotel, Lobby
FT6. Paleontology of the “Ashley Phosphate Beds” of Charleston (Field Trip)	10 a.m.–1 p.m.	Francis Marion Hotel, 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, 28 MARCH 2019

MORNING ORAL TECHNICAL SESSIONS

SESSION NO. 1

T1. Behavior of Animals, Dead or Alive: Neoichnology Informing Ichnology (Paleontological Society)

8:00 AM, Francis Marion Hotel, Pinckney Room

Patricia Kelley and Anthony J. Martin, Presiding

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|-----|----------|---|
| 1-1 | 8:00 AM | Rindsberg, Andrew K.*: HOW NEOICHOLOGY CAN INFORM ICHNOTAXONOMY |
| 1-2 | 8:20 AM | Neely, Samuel*; Raymond, Anne: LEAF DESTRUCTION BY <i>MELAMPUS COFFEUS</i> IN BASIN AND FRINGE MANGROVE SWAMPS, BARNES SOUND, KEY LARGO, FLORIDA: IMPLICATIONS FOR NUTRIENT-CYCLING WITHIN MANGROVE SWAMPS |
| 1-3 | 8:40 AM | Carroll-Garrett, Lucas M.*; Drumheller, Stephanie K.; Albee, Elizabeth C.; Gignac, Paul M.: COMPARING CONSISTENCY OF PROXIES FOR BITE-FORCE ESTIMATES ACROSS MULTIPLE TAXA |
| 1-4 | 9:00 AM | Schwimmer, David R.*: VERTEBRATE BITES AND SCATS IN MARINE CRETACEOUS DEPOSITS: INFORMATION FROM EXTANT TEETH, MUSCLES, GUTS AND SPHINCTERS |
| 1-5 | 9:20 AM | Foster, Carleton*; Savrda, Charles E.: ICHOLOGY OF THE CLAYTON CHALK (DANIAN CLAYTON FORMATION), MOSCOW LANDING, SUMTER COUNTY, WESTERN ALABAMA: IMPLICATIONS FOR EARLY PALEOCENE SEA-LEVEL DYNAMICS |
| 1-6 | 9:40 AM | Platt, Brian F.*: NEOICHOLOGY OF SOIL MEGAFaUNA IN THE NORTH CENTRAL HILLS PROVINCE OF MISSISSIPPI |
| | 10:00 AM | BREAK |
| 1-7 | 10:15 AM | Daley, Gwen M.*; Beckham, Tira; Moore, Sarah Catherine: BORED TO DEATH: INTERSECTION OF ICHNOLOGY AND TAPHONOMY IN A BEACH DEPOSIT OF <i>SPISULA RAVENELI</i> (CONRAD 1832) |

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|------|----------|--|
| 1-8 | 10:35 AM | DeVore, Melanie L.*; Voegeli, Sandra: DRILLING, SNATCHING, AND CONSERVATION: ASSESSING PREDATION OF QUEEN CONCH BY OCTOPUS USING DRILLING FREQUENCIES |
| 1-9 | 10:55 AM | Casey, Michelle M.*; White, Marie N.: NEOICHOLOGY AS AN INDICATOR OF COMMUNITY HEALTH IN LONG ISLAND SOUND, CT, USA |
| 1-10 | 11:15 AM | Kelley, Patricia H.*; Shadbolt, Evan L.; Cooke, Kimberly A.: SPATIAL AND TEMPORAL VARIATION IN DRILLING PREDATION ON THE GASTROPOD <i>CREPIDULA</i> FROM U.S. ATLANTIC COAST BEACH ASSEMBLAGES, WITH IMPLICATIONS FOR THE FOSSIL RECORD |
| 1-11 | 11:35 AM | Martin, Anthony J.*; Rindsberg, Andrew K.: STORM-WASHOVER FANS AS ICHNOLOGICALLY UNIQUE ENVIRONMENTS, WITH EXAMPLES FROM GEORGIA AND SOUTH CAROLINA |

SESSION NO. 2

T13. Reconstructing Paleo-Environmental Changes I (GSA Limnogeology Division; GSA Soils and Soil Processes Division; GSA Mineralogy, Geochemistry, Petrology, and Volcanology Division)

8:00 AM, Francis Marion Hotel, Gold Ballroom

Theodore Them II, Benjamin C. Gill, Jeremy D. Owens and Seth Young, Presiding

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|-----|---------|--|
| 2-1 | 8:00 AM | Reinhard, Christopher T.*; Planavsky, Noah J.; Ward, Ben A.; Love, Gordon D.; Ridgwell, Andy: OCEAN OXYGENATION, PHOSPHORUS CYCLING, AND THE EXPANSION OF EUKARYOTIC LIFE |
| 2-2 | 8:20 AM | LeRoy, Matthew A.*; Gill, Benjamin C.: A MULTI-BASIN COMPARISON OF IRON SPECIATION RECORDS OF THE CAMBRIAN SPICE EVENT |
| 2-3 | 8:40 AM | Ettensohn, Frank R.*: INTERACTION OF REGIONAL STRUCTURE, TECTONICS, PALEOGEOGRAPHY AND PALEOCLIMATE TO EXPLAIN RAPID CHANGE FROM WARM-WATER TO TEMPERATE-WATER CONDITIONS ACROSS EAST-CENTRAL LAURENTIA AT THE LATE |

- ORDOVICIAN BLACKRIVERIAN–TRENTON (TURINIAN–CHATFIELDIAN; LATE SANDBIAN) TRANSITION**
- 2-4 9:00 AM Lindskog, Anders*; Young, Seth A.; Kozik, Nevin P.; Owens, Jeremy D.: **TRANS-ATLANTIC REDOX RECORDS THROUGH A MID-SILURIAN EXTINCTION EVENT**
- 2-5 9:20 AM Bowman, Chelsie N.*; Young, Seth A.; Kozik, Nevin P.; Owens, Jeremy D.: **GEOCHEMICAL EVIDENCE OF REDOX CHANGES ASSOCIATED WITH THE LATE SILURIAN LAU/KOZLOWSKII EXTINCTION FROM CARBONATE FACIES OF LAURENTIA AND BALTICA**
- 2-6 9:40 AM Tamakloe, Frank M.*; McGlue, Michael M.; Erhardt, Andrea M.: **HIGH-RESOLUTION CHEMOSTRATIGRAPHY OF A LATE PENNSYLVANIAN MUDSTONE SUCCESSION**
- 10:00 AM **BREAK**
- 2-7 10:15 AM Machen, Eldridge G.*; Schoepfer, Shane D.; Xiang, Lei: **LINKS BETWEEN VOLCANISM AND THE END-PERMIAN MASS EXTINCTION IN SHALLOW MARINE ENVIRONMENTS OF THE NANPANJIANG BASIN, SOUTH CHINA**
- 2-8 10:35 AM Cottingham, Kevin*; Schoepfer, Shane; Henderson, Charles: **THE CACHE CREEK TERRANE: A LOOK AT THE OTHER SIDE OF THE PANTHALASSIC DURING THE PTB**
- 2-9 10:55 AM Newby, Sean M.*; Owens, Jeremy D.; Algeo, Thomas J.: **BRIEF OXYGENATION EVENT DURING EXTENSIVE ANOXIA ACROSS THE PERMIAN-TRIASSIC TRANSITION AS REVEALED BY THALLIUM ISOTOPES**

SESSION NO. 3

T18. Hydrological Processes and Problems across the Southeastern United States (GSA Soils and Soil Processes Division; GSA Quaternary Geology and Geomorphology Division; GSA Geology and Society Division; GSA Karst Division)

8:00 AM, Francis Marion Hotel, St. Matthews Room

J.P. Gannon, Mark Lord and David Kinner, Presiding

- 8:00 AM **INTRODUCTORY REMARKS**
- 3-1 8:05 AM Manda, Alex K*; Gullet, John; Crozier, Carl; Rashash, Diana; Gibbs, Andrea; Wood, Al; Brown, Austin; Lennon, Brian: **IMPACT OF ARTIFICIAL CHANNELS ON HYDROLOGIC PROCESSES IN THE COASTAL PLAIN OF NORTH CAROLINA: BLESSING AND CURSE?**
- 3-2 8:25 AM McGill, Samantha*: **AN INVESTIGATION OF SEDIMENT RESUSPENSION'S ROLE IN THE PROLIFERATION OF HARMFUL ALGAL BLOOMS**
- 3-3 8:45 AM Hanebuth, Till J.J.*; Durica, John T; Meyers, Ezekiel W; Zhang, Wenyan; Porz, Lucas: **FEASIBILITY STUDY ADDRESSING THE CHRONIC HARBOR SILTING ISSUE IN GEORGETOWN, SC**
- 3-4 9:05 AM Zamora, P.B.*; Shank, C.: **THE EFFECT OF EXTREME RAINFALL FROM HURRICANE FLORENCE ON GROUNDWATER-SURFACEWATER INTERACTIONS IN THE NORTH CAROLINA COASTAL PLAIN: OBSERVATIONS FROM BARRIER ISLANDS AND A CAROLINA BAY**
- 3-5 9:25 AM Shoup, Bryce O.*; Whittecar, G. Richard: **ROLE OF ACTUAL EVAPOTRANSPIRATION ON GROUNDWATER DOME ASYMMETRY AND HISTORIC POND LEVELS AT CAPE HENRY, VIRGINIA**
- 3-6 9:45 AM Sanders, Colton E.*: **QUANTIFYING HYPORHEIC FLOW IN BEAVER PONDS OF VARYING SIZE AND STREAM MORPHOLOGY**
- 10:05 AM **BREAK**
- 3-7 10:20 AM Wright, Summer*; Deemy, James B.: **EFFECTS OF FALL VEGETATION DIE OFF ON WATER QUALITY PARAMETERS IN THE OLGETHORPE ELEMENTARY SCHOOL WETLAND**
- 3-8 10:40 AM Wenholt, Leah*; McKay, Larry D.: **INVESTIGATIONS OF URBAN FLOODPLAIN DEPOSITIONAL RATES AND INDUSTRIAL CONTAMINATION ALONG THIRD CREEK IN KNOXVILLE, TN**

- 3-9 11:00 AM Ornelles, Adam D.*; Wilcox, Jeffrey D.: **INVESTIGATING POTENTIAL COMPETITIVE ADSORPTION AND FACILITATED TRANSPORT OF CAFFEINE ON MOBILE CLAY MINERALS**
- 3-10 11:20 AM Benton, Joshua R.*; Colby, Randolph; Orndorff, William D.; Scott, Durelle: **DISSOLVED NITROGEN CONCENTRATION GRADIENTS IN KARST WATERS AT CLOVER HOLLOW, GILES COUNTY, VA**
- 3-11 11:40 AM Firkaly-Paciera, Joseph W.*; Dawers, Nancye H.; Anderson, Samuel: **JOINT CONTROLS ON CAVE FORMATION AND MORPHOLOGY: SNAIL SHELL CAVE, TENNESSEE**

SESSION NO. 13

T7. Past and Future Coastal Evolution in Response to Sea-Level Changes and Storm Impacts (GSA Quaternary Geology and Geomorphology Division; GSA Geology and Society Division)

8:20 AM, Francis Marion Hotel, Colonial Ballroom

Michael S. Fenster and Duncan M. FitzGerald, Presiding

- 13-1 8:20 AM Torres, Julie A.*; Kulp, Mark A.; Georgiou, Ioannis Y.; FitzGerald, Duncan M.; Lepper, Kenneth: **BARRIER ISLAND GROWTH RATES FROM AN OPTICALLY STIMULATED LUMINESCENCE-DATED BEACH RIDGE SEQUENCE IN LOUISIANA**
- 13-2 8:40 AM Georgiou, Ioannis*; Beasley, Benjamin; Miner, Michael D.: **COUPLED BARRIER SYSTEM SHORLINE AND SHOREFACE DYNAMICS LOUISIANA, USA**
- 13-3 9:00 AM Wingard, G. Lynn*; Jones, Miriam C.; Bergstresser, Sarah E.; Stackhouse, Bethany L.; Marot, Marci E.: **THE ROLE OF SEA-LEVEL RISE AND STORMS IN FORMATION AND RESILIENCE OF FLORIDA BAY ISLANDS, EVERGLADES NATIONAL PARK**
- 13-4 9:20 AM Mallinson, David J.*; Culver, Stephen J.; Allen, Cody Wayne; Mulligan, Ryan: **STORM IMPACTS ON COASTAL AND INNER SHELF STRATIGRAPHY, PALEOENVIRONMENTAL RECONSTRUCTION, AND SAND RESOURCES: NORTHERN ONSLOW BAY, NORTH CAROLINA, USA**
- 13-5 9:40 AM Wehmiller, J.F.*; Brothers, Laura; Foster, David S.; Ramsey, Kelvin W.: **SOUTHERN DELMARVA BARRIER ISLAND BEACHES: LINKING OFFSHORE AND ONSHORE UNITS USING RACEMIZATION GEOCHRONOLOGY TO INFER SEDIMENT SOURCES DURING SHORELINE MIGRATION**
- 10:00 AM **BREAK**
- 13-6 10:15 AM Fenster, Michael S.*: **THE IMPACT OF CLIMATE CHANGE (SEA-LEVEL RISE AND STORMS) ALONG VIRGINIA'S COASTS**
- 13-7 10:35 AM Shawler, Justin L.*; Hein, Christopher J.; Ciarletta, Daniel J.; Lorenzo Trueba, Jorge: **BEYOND STORMS AND SEA LEVEL: THE IMPRINTS OF ANTECEDENT GEOLOGY AND SEDIMENT SUPPLY ON THE EVOLUTION OF THE VIRGINIA BARRIER ISLANDS**
- 13-8 10:55 AM Shen, Zhixiong*; Phillip, Ryan Eli; Wright, Eric; Mauz, Barbara: **INTERMITTENT GROWTH OF A BARRIER SPIT IN THE US ATLANTIC COAST DRIVEN BY HURRICANE ACTIVITY IN WESTERN NORTH ATLANTIC ON CENTENNIAL TIMESCALES**
- 13-9 11:15 AM Hein, Christopher J.*; Fallon, Andrew R.; Rosen, Peter; Hoagland, Porter; Georgiou, Ioannis Y.; FitzGerald, Duncan; Baker, Sarah; Marino, George B.: **STORM-DRIVEN SHORELINE DYNAMICS ALONG A DEVELOPED RIVER MOUTH BARRIER ISLAND: MULTI-DECADAL CYCLES OF EROSION AND MITIGATION**
- 13-10 11:35 AM Brown, Kallie F*; Hale, Richard P.: **SEASONAL IMPACTS ON SEDIMENT CHARACTERISTICS IN THE GANGES-BRAHMAPUTRA-MEGHNA DELTA**

SESSION NO. 14

T24. Geoarchaeology (GSA Soils and Soil Processes Division; GSA Quaternary Geology and Geomorphology Division; GSA Geoarchaeology Division)

8:20 AM, Francis Marion Hotel, Rutledge Room

Ervan Garrison and Jessica Cook Hale, Presiding

- 14-1** 8:20 AM Leigh, David S.*; Purdy, Barbara A.: **STRATIGRAPHY AND LANDSCAPE EVOLUTION AT THE CCA SITE IN NORTHERN FLORIDA, A PRE-CLOVIS CANDIDATE**
- 14-2** 8:40 AM Cyr, Howard J.*: **DYNAMIC FLOOD REGIMES AND SITE DISTRIBUTION PATTERNS AT THE FOOT OF THE SMOKIES: AN INTEGRATED GEOARCHAEOLOGICAL AND ARCHAEOLOGICAL INVESTIGATION OF THE LITTLE RIVER FLOODPLAIN, EAST TENNESSEE**
- 14-3** 9:00 AM Garrison, Ervan*: **SCOUR NUCLEI, EROSION AND THE POTENTIAL FOR ARCHAEOLOGICAL SITE DISCOVERY**
- 14-4** 9:20 AM Thieme, Donald M.*: **MIGRATION AND 3D TIME SLICING OF GPR DATA FROM THE WEST END CEMETERY IN QUITMAN, GEORGIA, USA**
- 14-5** 9:40 AM Starling, Abigail M.*; Thieme, Donald M.; Cole, George M.; Ward, David; Denizman, Can; Cook Hale, Jessica: **INVESTIGATION OF A POSSIBLE INDIAN MOUND USING LIDAR AND GROUND-PENETRATING RADAR (GPR)**
- 10:00 AM **BREAK**
- 14-6** 10:15 AM Young, James R.*; May, Michaela; Fox, Jake R.; Watts, Chester F.: **MAPPING THE WEST VIEW CEMETERY IN RADFORD, VIRGINIA AND IDENTIFYING POTENTIAL UNMARKED GRAVES USING UNMANNED AERIAL SYSTEMS (UAS)**
- 14-7** 10:35 AM Bobbyarchick, Andy R.*: **TOPOGRAPHIC, RADAR, AND DENSITY PROXY INVESTIGATION OF AN 18TH CENTURY FAMILY CEMETERY IN UWHARRIE NATIONAL FOREST, NORTH CAROLINA**
- 14-8** 10:55 AM Martin, Paul S.*; Tormey, Blair R.; Sullivan, John M.; Schultz, Craig A.: **GEOPHYSICS TO CADAVER DOGS: MULTI-METHOD APPROACH TO SURVEYING HISTORICAL CEMETERIES**
- 14-9** 11:15 AM Isphording, Wayne C.*: **FAULTY STATISTICAL INTERPRETATION OF GEOCHEMICAL DATA: RESULTS CAN BE FATAL IN A COURT-OF-LAW!!**

SESSION NO. 15

T15. Geologic Studies of the U.S. Atlantic Coastal Plain (GSA Soils and Soil Processes Division; GSA Geochronology Division; GSA Quaternary Geology and Geomorphology Division)

8:40 AM, Francis Marion Hotel, Calhoun Room

William R. Doar III and Christopher S. Swezey, Presiding

- 15-1** 8:40 AM Bliley, Daniel*: **MIDDLE COASTAL PLAIN GEOMORPHOLOGY AND STRATIGRAPHY, JOHNSTON COUNTY, NORTH CAROLINA**
- 15-2** 9:00 AM Farrell, Kathleen M.*; Thornton, Erik: **REEXAMINATION OF SEVERAL EARLY (LOWER) PLEISTOCENE FORMATIONS IN THE CONTEXT OF SEQUENCE STRATIGRAPHY, SURRY PALEOSHORELINE COMPLEX, NORTH CAROLINA COASTAL PLAIN**
- 15-3** 9:20 AM DeJong, Benjamin*; Bierman, Paul R.; Hidy, Alan J.: **²⁶AL - ¹⁰BE ISOCHRON BURIAL DATING OF EARLY-MID PLEISTOCENE RIVER GRAVELS OF THE CHESAPEAKE BAY REGION, EAST-CENTRAL UNITED STATES**
- 15-4** 9:40 AM Vance, Robert K.*; Reichard, James S.; Kelly, Jacque L.; Meyer, Brian K.; Rich, Frederick J.: **STRATIGRAPHY AND STRUCTURE OF A GEORGIA BARRIER ISLAND: HYDROLOGIC IMPACTS AND IMPLICATIONS**
- 10:00 AM **BREAK**

- 15-5** 10:15 AM Witt, Anne C.*; Occhi, Marcie E.: **GEOLOGICAL FACTORS EFFECTING SLOPE INSTABILITY IN THE VIRGINIA COASTAL PLAIN: OBSERVATIONS FROM THE 2018 NOTTOWAY LANE ROTATIONAL LANDSLIDE, KING WILLIAM COUNTY**
- 15-6** 10:35 AM Czwartacki, Brooke J.*; Luciano, Katherine: **GROUNDWATER QUALITY IN THE GORDON AQUIFER NEAR CHARLESTON, SOUTH CAROLINA**
- 15-7** 10:55 AM Collins, Emma L.*; Callahan, Timothy J.; Shelley, David C.: **WATER BALANCE ANALYSIS OF A FLOODPLAIN SYSTEM: CONGAREE NATIONAL PARK**
- 15-8** 11:15 AM Hale, Richard P.*; Brown, Kallie; McGill, Samantha: **SEDIMENT DYNAMICS OF THE LOWER JAMES RIVER**

MORNING POSTER TECHNICAL SESSIONS

SESSION NO. 4

T3. Gondwana vs. Laurentia: Terrane Accretion and Crustal Growth in the Southeastern United States (Posters) (GSA Mineralogy, Geochemistry, Petrology, and Volcanology Division; GSA Geochronology Division; GSA Structural Geology and Tectonics Division)

8:00 AM, Francis Marion Hotel, Carolina Ballroom

Authors will be present from 9 to 11 AM

Booth #

- 4-1** 1 Larramendi, Gustavo A.*; Clements, Andrew G.; Hawman, Robert B.: **INVESTIGATION OF THE LATE PALEOZOIC COLLISION IN SOUTHERN GEORGIA BETWEEN GONDWANA AND LAURENTIA AND THE RESULTING DEFORMATIONAL RESPONSE OF THE UPPER MANTLE**
- 4-2** 2 Dietrich, Lynn*; Sen, Pragnyadip; Biggs, Thomas: **3D GEOMETRIC MODEL USING STRUCTURE FROM MOTION (SFM) AND KINEMATIC ANALYSIS OF FOLD-THRUST BELT STRUCTURES EXPOSED IN A QUARRY ON THE EAST BANK OF THE SOUTHERN FORK OF SHENANDOAH RIVER IN PAGE VALLEY, VA**
- 4-3** 3 Cattanach, Bart L.*; Bozdog, G. Nicholas; Isard, Sierra J.; Wooten, Richard M.: **A NEW 1:24,000-SCALE GEOLOGIC MAP OF THE MOUNT MITCHELL 7.5-MINUTE QUADRANGLE, YANCEY AND BUNCOMBE COUNTIES, NORTH CAROLINA**
- 4-4** 4 Cattanach, Bart L.; Bozdog, G. Nicholas; Isard, Sierra J.; Wooten, Richard M.: **A NEW 1:24,000-SCALE GEOLOGIC MAP OF THE SHINGLE HOLLOW 7.5-MINUTE QUADRANGLE, RUTHERFORD AND POLK COUNTIES, NORTH CAROLINA**
- 4-5** 5 Merschat, Arthur*; Webb, Fred; Thompson, Hayley N.; Hooper, Seth I.: **GEOLOGIC MAP OF THE KONNAROCK 7.5-MINUTE QUADRANGLE, VIRGINIA**
- 4-6** 6 Rodemer, Franklin E.*; Smith, Michael S.: **THE CATOCTIN FORMATION: NEW GEOCHEMICAL CONSTRAINTS FOR THE BLUE RIDGE ANTICLINORIUM OF VIRGINIA, MARYLAND AND PENNSYLVANIA**
- 4-7** 7 Roderus, Kelli M.*; Pivarunas, Anthony F.; Meert, Joseph G.; Miller, Scott R.; Katusin, Karastin D.; Craver, Aubrey; Pandit, M.K.; Sinha, Anup K.: **PALEOMAGNETIC INSIGHTS INTO SINGHBHUM CRATON**
- 4-8** 8 Halford, Natalie Carol*; Barineau, Clinton I.: **THE SEARCH FOR IMPACT FEATURES IN PROPOSED TARGET ROCKS OF THE "WOODBURY" STRUCTURE IN THE PINE MOUNTAIN BELT OF SOUTHWESTERN GEORGIA**
- 4-9** 9 Horsman, Eric; Shell, Cody*: **GRAVITY SURVEY OF A BURIED TRIASSIC RIFT BASIN, BERTIE COUNTY, NORTH CAROLINA**

- 4-10 10 Lowery, Sara*; Do, Ivy; Barineau, Clinton I.: **RF/PHI ANALYSIS ON THE KOWALIGA GNEISS: IMPLICATIONS FOR THE BREVARD ZONE IN THE EASTERN BLUE RIDGE OF ALABAMA**

SESSION NO. 5

T4. Marine Vertebrate Paleontology of the Atlantic and Gulf Coastal Plains (Posters) (Paleontological Society; GSA Geochronology Division)

8:00 AM, Francis Marion Hotel, Carolina Ballroom

Authors will be present from 9 to 11 AM

- Booth #
- 5-1 11 Maisch, Harry M.*; Becker, Martin A.; Griffiths, Michael L.: **CHONDRICHTHYANS FROM THE LOWER CLAYTON LIMESTONE UNIT OF THE MIDWAY GROUP (PALEOCENE) NEAR MALVERN, ARKANSAS, USA**
- 5-2 12 Campbell, Matthew R.*: **PLIOCENE FOSSIL NODIPECTEN SCALLOPS FROM SOUTH CAROLINA**
- 5-3 13 Lloyd, Austin*; Recchuiti, Erin M.; Forcino, Frank L.; Stafford, Emily S.: **THE INFLUENCE OF SAMPLE SIZE ON THE PERCEPTION OF FOSSIL COMMUNITY DIFFERENCES BETWEEN IN-PLACE AND SURFACE COLLECTED SAMPLES**
- 5-4 14 Harris, Ann W.*; Etensohn, Frank R.; Carnahan-Jarvis, Jill: **PALEOECOLOGICAL AND STATISTICAL ANALYSIS OF A NEW OPHIUROID (ECHINODERMATA) FROM UPPER MISSISSIPPIAN (CHESTERIAN) SLADE FORMATION OF NORTHEASTERN KENTUCKY**
- 5-5 15 Stafford, Emily S.*; Forcino, Frank L.: **META-ANALYSIS OF FIELD-BASED FOSSIL COLLECTION METHODS**
- 5-6 16 Dixon, Sara P.*; Shope, Dakota P.; Boyer, Diana L.: **A DIMINUTIVE LATE DEVONIAN RECOVERY FAUNA FROM THE CLEVELAND SHALE**
- 5-7 17 Sain, Colby E.*; Coulombe, Julie M.; Smith, Nicholas S.; Sumrall, C.D.: **UNRAVELLING THE PALEOZOIC OPHIUROID MYSTERY: IDENTIFICATION OF MISSISSIPPIAN AGE BRITTLE STAR (OPHIUROIDEA, ECHINODERMATA) VERTEBRAE AND LATERAL ARM PLATES FROM DISARTICULATED OSSICLES**
- 5-8 18 Pellicciotti, Vincent*; Paton, Timothy; Selly, Tara; Schiffbauer, James D.; Sumrall, Colin D.: **A NEW GENUS OF BELEMNOCYSTITID SOLUTE (ECHINODERMATA) FROM THE LEBANON LIMESTONE (UPPER ORDOVICIAN, SANDBIAN) OF CENTRAL TENNESSEE: RECONSTRUCTION USING PHASE-CONTRAST X-RAY MICROTOMOGRAPHY**

SESSION NO. 6

T6. Limnogeology: Sedimentary Records from Modern and Ancient Lakes (Posters) (GSA Limnogeology Division; GSA Geochronology Division; GSA Quaternary Geology and Geomorphology Division)

8:00 AM, Francis Marion Hotel, Carolina Ballroom

Authors will be present from 9 to 11 AM

- Booth #
- 6-1 19 Landolt, Benjamin W.*; Balascio, N.L.; Bailey, Christopher M.: **SINKHOLE DEVELOPMENT IN MAPLE FLATS, VIRGINIA AND ITS POTENTIAL IMPLICATIONS FOR LATE-PLEISTOCENE CLIMATE**
- 6-2 20 Conway, Nicholas William*; Shen, Zhixiong: **USING X-RAY COMPUTED TOMOGRAPHY AND GRAIN-SIZE ANALYSIS OF OXBOW LAKE SEDIMENTS TO REVEAL A CENTENNIAL-SCALE PALEOFLOOD HISTORY OF THE PEE DEE RIVER, SOUTH CAROLINA**
- 6-3 21 Gudmunson, Erik*; Wilson, Jonathan; Harris, Felicia; Denham, Cole; Woolery, Edward; McGlue, Michael; Thigpen, J. Ryan; Brown, Summer J.: **COMBINING CHIRP SEISMIC REFLECTION AND LIDAR DATA TO UNDERSTAND THE STRUCTURAL ARCHITECTURE AND SLIP PARTITIONING OF THE NORTHERN TETON FAULT NEAR JACKSON LAKE, WYOMING**

- 6-4 22 Streib, Laura C.*; Spencer, Brandon M.; Swallow, Meredith L.; Lo, Edward; McGlue, Michael M.; Thigpen, J. Ryan; Woolery, Edward; Brown, Summer J.: **UNDERSTANDING SEDIMENT ACCUMULATION AND DISTRIBUTION IN JACKSON LAKE, WYOMING USING CHIRP SEISMIC SURVEYING**
- 6-5 23 Brannon, McKenzie Ann*; McGlue, Michael M.; Thigpen, J. Ryan; Woolery, Edward: **SEISMIC REFLECTION PROFILES REVEAL POSSIBLE SUB-LACUSTRINE PALEO-DELTA IN JACKSON LAKE (WY)**
- 6-6 24 Lo, Edward L.*; Yeager, Kevin M.; Bergier, Ivan; Silva, Aguinaldo; McGlue, Michael M.: **LAKE INFILL AND ITS EFFECTS ON WATER RESOURCES AND LAKE TERRESTRIALIZATION IN THE SOUTH AMERICAN LOWLANDS**

SESSION NO. 7

T8. Innovations in Earth Science Education (Posters) (GSA Energy Geology Division)

8:00 AM, Francis Marion Hotel, Carolina Ballroom

Authors will be present from 9 to 11 AM

- Booth #
- 7-1 25 Crane, Cynthia Danielle*; Manda, Alex K.; Woods, Terri L.; Mitchell, Linda L.; Doster, Elizabeth C.; Thompson, Anthony: **IMAGINE-NC SUMMER CAMP PROJECT: ENGAGING ELEMENTARY AND MIDDLE SCHOOL STUDENTS THROUGH INQUIRY-BASED, HANDS-ON EARTH SCIENCE ACTIVITIES**
- 7-2 26 Muskelly, Cameron O.*; Bauer, Jennifer E.; Lam, Adriane R.: **TIME SCAVENGERS: SOCIAL MEDIA OUTLETS ALLOW FOR EFFECTIVE COMMUNICATION OF GEOSCIENCE EDUCATION**
- 7-3 27 Thompson, Jennifer L.*: **EARTH SCIENCE AROUND THE WORLD**
- 7-4 28 Bechtel, Randy*; Taylor, Kenneth B.: **A SECOND ROUND OF HANDS-ON EARTHQUAKE EDUCATION WORKSHOPS IN N.C**
- 7-5 29 Klyce, Ann M.*; Toran, Marta L.; Heckert, Andrew B.: **STRENGTHENING EARTH SCIENCE EDUCATION AND OUTREACH PROGRAMS THROUGH TEACHER AND STUDENT PREPARATION WITH CONTINUOUS SUPPORT THROUGH APPALACHIAN STATE UNIVERSITY**
- 7-6 30 Thompson, Carmi Milagros*; Portell, Roger W.: **DIGITAL INVERTEBRATES AND MORE: INVERTEBRATE PALEONTOLOGY IN THE 21ST CENTURY**
- 7-7 31 Nelson, Daren T.*; Gross, Amy L.: **R.E.V.E.A.L THE GEOSCIENCES: (RESEARCH EXPERIENCES AND VIRTUAL EXPLORATION FOR ACCELERATED LEARNING IN THE GEOSCIENCES)**

SESSION NO. 8

T10. Sedimentary Systems of the Post-Alleghanian Eastern U.S. Atlantic Margin: Implications for Geologic Evolution, Resource Potential, and Carbon Sequestration (Posters) (GSA Energy Geology Division; GSA Geology and Society Division)

8:00 AM, Francis Marion Hotel, Carolina Ballroom

Authors will be present from 9 to 11 AM

- Booth #
- 8-1 32 Turkes, Ozan*; Lee, Ming-Kuo; Moncada Vivas, Jorge Antonio; Carrero Marquez, Carlos: **IDENTIFYING THE MINERALOGICAL CHANGES IN SHALE CAPROCKS FROM DEEP CO₂ GEOSEQUESTRATION BY USING XRD AND RAMAN SPECTROSCOPY**
- 8-2 33 Ferguson, Terry A.*; Bacon, Allan R.; Eppes, Martha C.; Richter, Daniel D.; Willard, Debra A.; Billings, Sharon A.; Austin, Jason C.; Nelson, Michelle S.; Cherkinsky, Alexander: **RE-INVESTIGATION OF A COLLUVIALLY FILLED VALLEY CONTAINING DEEPLY BURIED ORGANIC-RICH SEDIMENTS OF PLEISTOCENE AGE, PAULINE, SOUTH CAROLINA**

SESSION NO. 10***T17. Recent Advances and New Approaches in the Study of Faults and Shear Zones in Orogenic Systems (Posters) (GSA Structural Geology and Tectonics Division)***

8:00 AM, Francis Marion Hotel, Carolina Ballroom

Authors will be present from 9 to 11 AM

Booth #

- 10-1 34 Stachowicz, Liana*; Langille, Jackie; Stith, Felix; Deese, Haley: **CONSTRAINTS ON KINEMATICS AND THE CRUSTAL ARCHITECTURE WITHIN THE CLYDE 7.5-MINUTE QUADRANGLE, WESTERN NORTH CAROLINA, USA THROUGH GEOLOGIC MAPPING OF THE HAYESVILLE AND BURNSVILLE FAULTS**
- 10-2 35 Deese, Haley*; Stachowicz, Liana; Langille, Jackie; Stith, Felix: **MICROSTRUCTURAL OBSERVATIONS OF KINEMATICS AND DEFORMATION TEMPERATURES RECORDED IN THE CLYDE 7.5-MINUTE QUADRANGLE, WESTERN NORTH CAROLINA, USA: IMPLICATIONS FOR THE SOUTHWEST EXTENSION OF THE BURNSVILLE FAULT**
- 10-3 36 Rice, Aaron K.*; Bradley, Philip J.: **COMPILED STRUCTURAL DATA FOR CHATHAM COUNTY, NC - UTILIZING GIS TO UNRAVEL STRUCTURAL GEOLOGY PROBLEMS**
- 10-4 37 Clendenin, Charles W.; Morrow, Robert H.*; Garihan, J.M.: **POLYPHASE DEFORMATION IN THE INNER PIEDMONT: GEOLOGY OF THE SOUTHERN HALF OF FINGERVILLE WEST QUADRANGLE, SPARTANBURG COUNTY, SOUTH CAROLINA**
- 10-5 38 Sullivan, Veronica F.; Fildes, Rebecca; Sen, Pragnyadipat*: **THREE-DIMENSIONAL GEOMETRIC MODELING OF THRUST DUPLEX IN THE FEURA BUSH QUARRY, SELKIRK, NY USING STRUCTURE FROM MOTION (SFM)**
- 10-6 39 Che, Siqi*; Mako, Calvin A.; Caddick, Mark; Law, R.D.: **APPLYING GARNET-MONAZITE THERMOMETRY TO SCANDIAN THRUST SHEETS IN NORTHWEST SCOTLAND**
- 10-7 40 Robbins, Kathryn*; Sen, Pragnyadipat: **GEOMETRIC AND KINEMATIC ANALYSIS OF THE FEURA BUSH QUARRY DUPLEX IN THE NORTHERN HUDSON VALLEY FOLD-THRUST BELT, SELKIRK, NY**
- 10-8 41 Garihan, J.M.*: **SYNTAXIAL QUARTZ VEINS ACT AS MECHANICAL ANISOTROPY DURING LAYER-PARALLEL SHORTENING, LOCALIZING FOLDING IN GNEISS: TWO ADDITIONAL EXAMPLES FROM THE INNER PIEDMONT OF SOUTH CAROLINA**
- 10-9 42 Spatz, Andrew A.*; Bobbyarchick, Andy R.: **CLEAVAGE BEDDING RELATIONSHIPS IN TILLERY FORMATION ARGILLITE, CAROLINA TERRANE, NORTH CAROLINA**
- 10-10 43 Do, Ivy*; Lowery, Sara; Barineau, Clinton I.: **RF/Φ ANALYSIS ON ROCKS OF THE AUSTELL GNEISS AND NEW GEORGIA GROUP IN PROXIMITY TO THE BREVARD FAULT ZONE: IMPLICATIONS FOR THE DEFORMATION HISTORY OF THE EASTERN BLUE RIDGE IN GEORGIA**

SESSION NO. 11***T21. Mesozoic to Cenozoic Tectonics and Magmatism of the Southeastern United States (Posters) (GSA Mineralogy, Geochemistry, Petrology, and Volcanology Division; GSA Geochronology Division; GSA Structural Geology and Tectonics Division)***

8:00 AM, Francis Marion Hotel, Carolina Ballroom

Authors will be present from 9 to 11 AM

Booth #

- 11-1 44 Chaumba, Jeff B.*: **EVOLUTION OF THE RUSSELL LAKE ALLOCHTHON AND THE SOAPSTONE RIDGE COMPLEX IN GEORGIA, SOUTHERN APPALACHIANS: INFERENCES FROM CHLORITE GEOTHERMOMETRY**
- 11-2 45 Hall, Susan M.*; Neymark, Leonid A.; Paces, James B.; Potter, Christopher J.; Beard, James S.: **GEOCHRONOLOGY OF THE COLES HILL URANIUM DEPOSIT AND PORTIONS OF THE BROOKNEAL SHEAR ZONE, SOUTHEAST VIRGINIA**

- 11-3 46 Colwell, Daniel*; Glazner, Allen F.; McCarthy, William: **3D-MODELING AND MAGNETIC (AMS) ANALYSIS OF MESOZOIC DIABASE DIKES IN NORTH CAROLINA**

SESSION NO. 12***T23. Technology and Mapping in the 21st Century (Posters) (GSA Structural Geology and Tectonics Division)***

8:00 AM, Francis Marion Hotel, Carolina Ballroom

Authors will be present from 9 to 11 AM

Booth #

- 12-1 47 Coe, Dylan C*; Sautter, Leslie: **GEOMORPHOLOGY OF INTRASLOPE TERRACES, EASTERN BLAKE PLATEAU**
- 12-2 48 Drost, Mikayla*; Sautter, Leslie: **COMPARISON OF SEABED FEATURES WITHIN THE RICHARDSON RIDGE COMPLEX, BLAKE PLATEAU**
- 12-3 49 Drennon, Hayley C.*; Ferrini, Vicki; Sautter, Leslie: **UTILIZATION OF GLOBAL BATHYMETRIC DATA TO CHARACTERIZE LARGE-SCALE BEDFORMS IN ATLANTIC SUBMARINE BASINS**
- 12-4 50 DeBenedictis, Darina*: **PROSPECTIVE DEEP SEA CORAL HABITATS ON MUSICIANS SEAMOUNTS, PACIFIC OCEAN**
- 12-5 51 Shah, Anjana K.*; Pratt, Thomas L.; Horton, J. Wright: **NEW HIGH-RESOLUTION AIRBORNE MAGNETIC AND RADIOMETRIC SURVEYS OVER THE CHARLESTON, SOUTH CAROLINA REGION**
- 12-6 52 Farmer, Samantha L.*; Thomason, Amanda R.; Watts, Chester F.; Stephenson, George C.: **TESTING THE USE OF UNMANNED AERIAL SYSTEMS (UAS) TO EXTRACT GEOLOGIC STRUCTURE DATA FROM UNSTABLE ROCK SLOPES IN SOUTHWEST VIRGINIA FOR VDOT STUDIES**
- 12-7 53 Thomason, Amanda R.*; Farmer, Samantha L.; Watts, Chester F.; Stephenson, George C.: **USING UNMANNED AERIAL SYSTEMS (UAS) TO PRODUCE POINT CLOUDS OF QUARRY WALLS FOR TESTING CHANGE DETECTION SOFTWARE AND THEIR APPLICATION TO STUDYING HIGHWAY ROCKFALL RATES**
- 12-8 54 Bradley, Philip J.*; Bolich, Richard E.: **AN EVALUATION OF LINEAMENTS, FAULTS, AND DIKES USING LIDAR HILLSHADE AND DETAILED GEOLOGIC MAPPING DATA IN CHATHAM COUNTY, NORTH CAROLINA - A POTENTIAL TOOL FOR COUNTY STAFF**
- 12-9 55 Arrowood, Taylor M.*; Marshall, Scott T.: **THREE-DIMENSIONAL GEOPHYSICAL IMAGING OF THE NEW RIVER FLOODPLAIN, BOONE, NC**
- 12-10 56 Noor, Samia*; Cox, Randel T.; Smalley, Robert: **TECTONIC GEOMORPHIC ANALYSIS OF THE EASTERN LOWLANDS OF UPPER MISSISSIPPI EMBAYMENT USING RECENTLY COLLECTED LIDAR DATASET**
- 12-11 57 Burstein, Joshua A.*; White, Scott: **BATHYMETRIC AND BACKSCATTER SONAR MAPPING FOR RIVERBED HABITAT CHARACTERIZATION, CONGAREE RIVER, SOUTH CAROLINA**

AFTERNOON POSTER TECHNICAL SESSIONS

SESSION NO. 16***T12. Natural Hazards Prediction (Posters) (GSA Mineralogy, Geochemistry, Petrology, and Volcanology Division; GSA Quaternary Geology and Geomorphology Division; GSA Geology and Society Division; GSA Karst Division)***

1:00 PM, Francis Marion Hotel, Carolina Ballroom

Authors will be present from 2 to 4 PM

Booth #

- 16-1 1 Cain, Connor J.*; Lee, Ming-Kuo; Ashwood, Loka; Montiel, Daniel; Dimova, N.T.; Stonecypher, Katherine; Hiett, Christy; Furr, Allen; Sutton, Collin R.: **ENVIRONMENTAL RISK ANALYSES FOR LEUKEMIA CLUSTER IN CLEBURNE COUNTY, ALABAMA**

- 16-2** 2 Plitnick, Thomas A.*; Marsellos, Antonios E; Tsakiri, Katerina: **FORECASTING OF WATER DISCHARGE USING TIME SERIES DECOMPOSITION OF HYDROGEOLOGICAL AND ATMOSPHERIC VARIABLES TO IDENTIFY HIGH RISK PERIODS OF FLOODING IN SCHENECTADY, NEW YORK**
- 16-3** 3 Tran, Janet*; Marsellos, Antonios; Tsakiri, Katerina: **ENHANCED FORECASTING OF FLOOD EVENTS BY INTEGRATING ARIMA IN TIME SERIES DECOMPOSITION: AN APPLICATION AT THE DELAWARE RIVER, TRENTON, NJ**
- 16-4** 4 Hatzis, Kostas*; Marsellos, Antonios E; Tsakiri, Katerina; Kyriakopoulos, Konstantinos: **TIME SERIES ANALYSIS OF VOLCANIC TEMPERATURE MONITORING: AN EXAMPLE FROM THE NISYROS ACTIVE VOLCANO AT THE HELLENIC VOLCANIC ARC**
- 16-5** 5 Marsellos, Antonios E*; Bennington, J. Bret; Plitnick, Thomas A.; Jones, Morgan Bridget; Chernoff, Daniella; Hatzis, Kostas; Kyriakopoulos, Konstantinos: **ULTRA HIGH-DEFINITION DIGITAL SURFACE MODEL AND GEOCHEMICAL MAPPING OF THE STEFANOS CRATER AT THE ACTIVE VOLCANO OF NISYROS IN GREECE WITH UAV SCANNING, PORTABLE X-RAY FLUORESCENCE AND GEOGRAPHICAL INFORMATION SYSTEMS**
- 16-6** 6 Roscoe, Sally*; Mahoney, Lauren; Marsellos, Antonios E: **ACCURACY AND EFFICIENCY OF A GIS APPLICATION USING GOOGLE EARTH GEOLOCATION AND LIDAR DATA TO RECONSTRUCT AND SIMULATE ICE JAM FLOODING ON THE MOHAWK RIVER, NEW YORK**
- 16-7** 7 Mahoney, Lauren*; Plitnick, Thomas A.; Achek, Moread; Bowen, Joyce; Epstein, Alexander; Lagattolla, Richard; Lopez-Rodriguez, Paola; Maliszka, Miranda; Reardon, Avery; Rienzo, Angela; Tran, Janet; Weinstein, Paul; Marsellos, Antonios E: **STRUCTURAL MAPPING OF UPPER PLATE DILATING FRACTURES ON THE ISLAND OF MAKRYKYTHERA, GREECE AT THE LOCAL PORT USING DRONE IMAGING AND STATISTICAL ANALYSIS**
- 16-8** 8 Tsakiri, Katerina*; Marsellos, Antonios E; Kapetanakis, Stelios: **ARTIFICIAL NEURAL NETWORKS APPLICATION IN TIME SERIES WATER DISCHARGE FOR THE PREDICTION OF FLOODING IN MOHAWK RIVER, NEW YORK**
- 16-9** 9 Das, Raja*; Tollefson, William; Nandi, A.; Joyner, Andrew T.: **SLOPE INSTABILITY ANALYSIS AND DETECTION OF VOLUMETRIC CHANGE USING A SMALL UNMANNED AERIAL VEHICLE (SUAV)**
- 17-6** 15 Webster, Rebecca*; Sunderlin, David: **TOWARD A METHOD OF ASSESSING MICROPLASTIC ACCUMULATION IN BEACH SAND DEPOSITS**
- 17-7** 16 Durica, John T.*; Hanebuth, Till J.J.; Long, Joshua: **RESPONSE OF THE LOWER SANTEE RIVER SYSTEM TO THE CONSTRUCTION OF THE PINOPOLIS AND SANTEE DAMS**
- 17-8** 17 York, Austen E.*; Burleson, Jacob C.; Mathias, Caleb Andrew; Hossain, Azad A.K.M.: **EXPLORING THE POTENTIAL OF GIS AND REMOTE SENSING TECHNIQUES TO STUDY THE IMPACTS OF DROUGHT ON PLANT-MOISTURE CONTENT IN HAMILTON COUNTY, TENNESSEE**
- 17-9** 18 Shah, Maya*; Nkomo, Simbarashe; Hage, Melissa: **PHYTOREMEDIATION OF COPPER AND IRON BY WATER HYACINTH (*EICHHORNIA CRASSIPES*) AT VARYING PH LEVELS**
- 17-10** 19 Bonnette, Kenneth*; Firat, Connor Bora; Hossain, Azad A.K.M.: **APPLICATION OF REMOTE SENSING TECHNOLOGY TO STUDY COAL ASH SPILL IN RIVER WATER**
- 17-11** 20 Husted, Olivia T.*; Mikucki, Jill A.; Schuler, Caleb G.: **GEOCHEMICAL SURVEY OF MOUNT BAKER, WASHINGTON**
- 17-12** 21 Waters-Tormey, Cheryl; Kinner, David; Edwards, Daniel; Hartman, Courtney; Lewis, Parker; Price, Sean; Rudziewicz, Matthew; Shorter, Nate; Silva, Felipe; Sujeet, Brittany; Turner, Liam; Willis, Anna*: **TRAIL-SCALE SLOPE FAILURE RISK MAPS: A PILOT STUDY IN GREAT SMOKY MOUNTAINS NATIONAL PARK**
- 17-13** 22 Ferry, Veronica*; Little, Dakota; Shaw, Mason; Chihuapilli, Ichitaca; Gannon, J.P.: **RELATING VARIATIONS IN SOIL COMPOSITION TO CONCENTRATION-DISCHARGE RELATIONSHIPS IN A DISTURBED HEADWATER CATCHMENT**
- 17-14** 23 Hogan, Hannah*; Wright, Charles; Gannon, J.P.; Styers, Diane; Kinner, David; Lord, Mark: **DEVELOPING A METHOD TO REMOTELY LOCATE EROSIONAL FEATURES USING A HIGH RESOLUTION DIGITAL ELEVATION MODEL**
- 17-15** 24 McDonald, Nicole Jean*; Wilcox, Jeffrey D.: **HYDROLOGIC RESTORATION OF A RARE SOUTHERN APPALACHIAN WETLAND**
- 17-16** 25 Nelson, Daren T.; Lopez Roldan, Edgar*; Robson, Jillian L.: **WHERE THERE IS A "WELL" THERE IS A WAY: CONNECTING UNDERGRADUATES TO THE WATER RESOURCE COMMUNITY VIA THE SOUTHEASTERN NORTH CAROLINA MONITORING PROJECT**
- 17-17** 26 Moore Torres, Jessie C.*; Martin, Anthony J.; Page, Michael: **GEOLOGICAL, ECOLOGICAL, AND HUMAN HISTORIES OF WOLF AND EGG ISLANDS (GEORGIA): INTEGRATING UNDERGRADUATE RESEARCH WITH PUBLIC OUTREACH THROUGH THE GEORGIA COAST ATLAS**
- 17-18** 27 Mathias, Caleb Andrew*; Spivey, Katie; Collyer, Nathan; Brock-Hon, Amy L.; McCarragher, Shannon: **GEOLOGY OF CHATTANOOGA: ENGAGING THE COMMUNITY WITH ITS FOUNDATION**
- 20-5** 49 Haggquist, Jack*; Elkins, Joe T.: **OCCURRENCE OF JAMAICAN RUM DISTILLERIES IN KARST TERRAINS OF THE WHITE LIMESTONE GROUP**

SESSION NO. 17

T16. Undergraduate Research I (Posters) (Council on Undergraduate Research Geosciences Division; GSA Limnogeology Division; GSA Energy Geology Division; GSA Quaternary Geology and Geomorphology Division; GSA Structural Geology and Tectonics Division)

1:00 PM, Francis Marion Hotel, Carolina Ballroom

Authors will be present from 2 to 4 PM

Booth #

- 17-1** 10 Kraus, Kiah*; Ali, K. Adem; Levine, Norman S.: **CHARACTERIZING THE ENGINEERING PROPERTIES OF SOILS IN THE CHARLESTON AREA**
- 17-2** 11 Davis, Clayton M.*; Wright, Summer; Johnson, Megan E.; Deemy, James B.: **MODELING HURRICANE STORM SURGE INUNDATION RISK TO DEVELOPMENT ALONG THE GEORGIA COAST, USA**
- 17-3** 12 Hays, James A.*; Mies, Jonathan W.: **A TALE OF TWO HURRICANES: THE PECULIAR MICROSEISMS OF MATTHEW AND FLORENCE IN ONSLOW BAY, NORTH CAROLINA**
- 17-4** 13 Chamberlin, Jessica*; Soehnelein, Camryn; Nweeia, Nicholas; Tanner, Benjamin R.; Evans, Jason M.: **ESTABLISHMENT OF PROXY INDICATORS OF MANGROVE AND SALT MARSH DEPOSITION AND APPLICATION TO SOIL CORES**
- 17-5** 14 Dombeck, Alexander*; Tanner, Benjamin R.: **SEDIMENT ARCHIVE OF SEAGRASS DYNAMICS IN NORTHERN INDIAN RIVER LAGOON, FL**

SESSION NO. 18

T18. Hydrological Processes and Problems across the Southeastern United States (Posters) (GSA Soils and Soil Processes Division; GSA Quaternary Geology and Geomorphology Division; GSA Geology and Society Division; GSA Karst Division)

1:00 PM, Francis Marion Hotel, Carolina Ballroom

Authors will be present from 2 to 4 PM

Booth #

- 18-1** 28 Elliott, Kathleen C*; Grothe, Pamela R; Konecky, Bronwen L.: **THE SEASONALITY OF OXYGEN AND HYDROGEN ISOTOPES OF RAIN, STREAM AND GROUNDWATER IN FREDERICKSBURG, VA**
- 18-2** 29 Puckett, Mary Hastings*: **APPLICATION OF FRACTIONAL DIFFERENTIAL EQUATION TO INTERPRET METAL UPTAKE**

DYNAMICS IN RIVERS FROM BEDFORM SCALE TO BASIN SCALE

- 18-3 30 Rahman, Md Mahfujur*; Uddin, Ashraf; Lee, Ming-Kuo: **BIOREMEDIATION OF ARSENIC CONTAMINATED GROUNDWATER IN A NATURAL SITE IN MACON COUNTY, ALABAMA**
- 18-4 31 Allan, Craig*; Allan, Bryan; Venketasubramanian, Kailas; Vinson, David S.; Zheng, Minrui; Tang, Wenwu; Trettin, Carl C.: **THE HYDROLOGY AND CARBON CYCLE OF FRESHWATER FORESTED WETLANDS, SOUTH EASTERN U.S.A**
- 18-5 32 Gullett, Jon*; Manda, Alex K.; Crozier, Carl; Rashash, Diana; Gibbs, Andrea: **DOCUMENTING SALTWATER INTRUSIONS IN AGRICULTURAL LANDS OF EASTERN NORTH CAROLINA**
- 18-6 33 Kelly, Erin*: **ANALYSIS OF TIME DELAY BETWEEN PRECIPITATION EVENTS AND WATER-LEVEL RESPONSE IN A CRYSTALLINE AQUIFER SYSTEM**
- 18-7 34 Whitehouse, L.*; Zamora, P.B.: **THE INFLUENCE OF THE GROUNDWATER TABLE ELEVATION ON BEACH SUBSURFACE TEMPERATURES AT BALD HEAD ISLAND NC**
- 18-8 35 McCormick, H.D.*; Zamora, P.B.: **PREDICTING LATERAL HYPORHEIC EXCHANGE AND GENX FLUXES IN THE LOWER CAPE FEAR RIVER USING RIVER MORPHOLOGY**
- 18-9 36 Watson, James*: **HYDROGEOLOGICAL INFLUENCES AND NUTRIENT INPUTS TO A NUTRIENT SENSITIVE COASTAL LAKE, HORRY COUNTY, SC**
- 18-10 37 Ingram, Kenya J.*; Cothren, Hannah R.; Morgan, John C.; Suminski, Marguerite; Turnbull, Joshua N.; Willis, Anna; Lord, Mark; Kinner, David A.; Gannon, J.P.: **COMPLEX GROUNDWATER – STREAM WATER INTERACTIONS IN A HEADWATERS CATCHMENT, WESTERN NORTH CAROLINA**
- 18-11 38 Bruckner, Austin*; Zamora, Peter B.: **QUANTIFYING GROUNDWATER INPUTS TO EASTERN NORTH CAROLINA TIDAL CREEKS USING RADON TRACER**
- 18-12 39 Sutton, Collin R.*; Lee, Ming-Kuo; Kumar, Sanjiv; Burton, Christopher: **GROUNDWATER AND SURFACE WATER RESPONSES TO CLIMATE CHANGE: A CASE STUDY IN GEORGIA, USA**
- 18-13 40 Deemy, James B.*; Takagi, Kimberly K: **RELATIONSHIPS BETWEEN DISCHARGE AND LAND USE / LAND COVER IN THE ALTAMAHA WATERSHED**
- 18-14 41 Ensley, Joanne C.*; Hancock, Gregory S.: **HOW EFFECTIVE ARE RETENTION PONDS AT MITIGATING THE EFFECTS OF URBAN RUNOFF?**

SESSION NO. 19**T22. Applications of Hydrology and Biogeochemistry to Stormwater Management (Posters) (GSA Limnogeology Division; GSA Geology and Society Division; GSA Karst Division)**

1:00 PM, Francis Marion Hotel, Carolina Ballroom

Authors will be present from 2 to 4 PM

Booth #

- 19-1 42 Maas, Carly M.*; Anderson, William P.; Fedders, Emily R.: **LID RETROFITTING OF STORMWATER SYSTEMS TO MITIGATE SALT CONTAMINATION**
- 19-2 43 Russo, Aeon*; Gu, Chuanhui; Anderson, William P.: **THE PROBLEM OF PERMEABILITY: MODELING MITIGATION OF ROAD SALT CONTAMINATION AND STORMWATER RUNOFF BY RETROFITTING LOW IMPACT DEVELOPMENT IN A MOUNTAINOUS, URBAN WATERSHED**
- 19-3 44 Gannon, J.P.*; Styers, Diane; Kinner, David; Lord, Mark: **EXAMINING THE EFFECTS OF RESOLUTION AND ROADS ON DEM-DERIVED DRAINAGE NETWORKS**

SESSION NO. 20**T24. Geoarchaeology (Posters) (GSA Soils and Soil Processes Division; GSA Quaternary Geology and Geomorphology Division; GSA Geoarchaeology Division)**

1:00 PM, Francis Marion Hotel, Carolina Ballroom

Authors will be present from 2 to 4 PM

Booth #

- 20-1 45 Alarcón Tinajero, Edgar*; Leigh, David S.: **PRELIMINARY PHYTOLITH RESULTS FROM ALLUVIAL ARROYO SEDIMENTS AT THE “CLIFF SITE”, MIXTECA ALTA HIGHLANDS, OAXACA, MEXICO**
- 20-2 46 White, Marie N.*; Stinchcomb, Gary E.; Carlson, Justin N.; Anderson, Derek T.; Miller, Shane: **HIGH-RESOLUTION SOIL CHARACTERIZATION OF TOPPER SITE SOIL SHOWS EVIDENCE OF PALEOENVIRONMENT AND OVERPRINTING**
- 20-3 47 Murray, Bridget*: **ASSESSING HUMAN IMPACT THROUGH MULTIELEMENT ANALYSIS AT A MIDDLE ARCHAIC-MISSISSIPPIAN EASTERN WOODLANDS ARCHAEOLOGICAL SITE, MADISON COUNTY, TN**
- 20-4 48 Suminski, Marguerite*; Fagan, Amy: **MINEROLOGY OF NATIVE WESTERN NORTH CAROLINA CLAYS USED IN CERAMIC STUDIOS**

AFTERNOON ORAL TECHNICAL SESSIONS**SESSION NO. 21****T8. Innovations in Earth Science Education (GSA Energy Geology Division)**

1:40 PM, Francis Marion Hotel, Rutledge Room

Cynthia Hall, Rodney Moore and Gina Boyd, Presiding

- 1:40 PM **INTRODUCTORY REMARKS**
- 21-1 1:45 PM Stadelman, Toni*; Stadelman, Steve A.: **A FOSSIL COLLECTION WAS DONATED TO OUR SCHOOL DISTRICT. NOW WHAT?**
- 21-2 2:05 PM Toran, Marta L.*; Klyce, Annie; Yokeley, Brandon; Heckert, Andrew B.: **THE GEOBAGO: HOW WE TURNED AN OLD RV INTO A MOBILE CLASSROOM TO MAXIMIZE OUR OUTREACH POTENTIAL**
- 21-3 2:25 PM Reese, Joseph F.*: **FUEL FOR THOUGHT: REFLECTIONS ON THE CREATION AND DELIVERY OF AN ACTIVE LEARNING BASED ENERGY RESOURCES GEOLOGY COURSE**
- 21-4 2:45 PM Shew, Roger*: **WATER: ENGAGING STUDENTS AND THE COMMUNITY ON GROUNDWATER AND SURFACE WATER SOURCES AND ISSUES USING CURRENT EVENTS IN EASTERN NORTH CAROLINA**
- 3:05 PM **BREAK**
- 21-5 3:20 PM Dunagan, Stan P.*; Van Boening, Angela: **GENERATING MORE GEOLOGY MAJORS THROUGH CURRICULUM SIMPLIFICATIONS**
- 21-6 3:40 PM Smith, MacKenzie A.*: **SCIENCE COMMUNICATION THROUGH ENGAGING AND EDUCATIONAL YOUTUBE CONTENT**
- 21-7 4:00 PM Johnson, Elijah T.*; McNeal, Karen S.: **TRAINING UNDERGRADUATE STUDENTS SPATIAL REASONING ABILITY USING THE AUGMENTED-REALITY SANDBOX**
- 21-8 4:20 PM Yokeley, Brandon*; Toran, Marta L.: **USING 3D PRINTED MODELS AND INTERACTIVE SIMULATIONS TO INCREASE UNDERSTANDING OF EROSION IN K12 EARTH SCIENCE EDUCATION AND OUTREACH PROGRAMS**

SESSION NO. 22***T20. The Science, Environmental Impacts, and Policy of Beach Nourishment (GSA Quaternary Geology and Geomorphology Division; GSA Geology and Society Division)***

1:40 PM, Francis Marion Hotel, Colonial Ballroom

Robert S. Young and Andrew Coburn, Presiding

- 22-1** 1:40 PM Braud, Alex*; Levine, Norman S.: **ECONOMIC VALUE OF BEACH AND DUNES SYSTEMS IN STORM PROTECTION, ISLE OF PALMS, SOUTH CAROLINA**
- 22-2** 2:00 PM Hannides, Angelos K.*; Elko, Nicole: **SAND BIOGEOCHEMISTRY IMPACTS OF BEACH NOURISHMENT ACTIVITIES**
- 22-3** 2:20 PM Coor, Jennifer L.*; Ousley, Jase D.: **HISTORICAL ANALYSIS OF THE CHANGE IN PERCENT FINES DURING BEACH NOURISHMENT**
- 22-4** 2:40 PM Guthrie, Arbour*; Martin, Anthony J.; Page, Michael: **SEDIMENTARY AND ECOLOGICAL INTERACTIONS OF SHORELINE MANAGEMENT AND FERAL HORSES ON CUMBERLAND ISLAND, GEORGIA**

SESSION NO. 23***T23. Technology and Mapping in the 21st Century (GSA Structural Geology and Tectonics Division)***

1:40 PM, Francis Marion Hotel, Calhoun Room

Norman Levine, K. Adem Ali, M. Scott Harris and Leslie Sautter, Presiding

- 23-1** 1:40 PM Palus, Brian*; Levine, Norman S.; Burger, Daniel: **REMOTE SENSING APPLICATIONS FOR CRITICAL ZONE MANAGEMENT IN SOUTH CAROLINA, USA**
- 23-2** 2:00 PM Waters-Tormey, Cheryl*; Styers, Diane; Allen, Kathryn; Hayes, Isaac: **PUBLIC DOMAIN AIRBORNE LIDAR GROUND MODEL AND GEOLOGIC MAP DATA: AN UNDER-UTILIZED RESOURCE FOR BEDROCK FRACTURE NETWORK CHARACTERIZATION**
- 23-3** 2:20 PM Saeid, Essam*; Kellogg, James N.; Kendall, Christopher; Hafiz, Ibraheem; Albesher, Ziyad; Martinez, Jose Antonio: **TECHNIQUES IN SUBSURFACE MAPPING USING SPECTRAL DECOMPOSITION AND WELL LOG CHARACTER: CASE STUDY OF CENOZOIC FLUVIAL & MARGINAL MARINE RESERVOIRS OF LLANOS FOOTHILLS, COLOMBIA**
- 23-4** 2:40 PM Davias, Michael*: **COOKIE CUTTER: ASSESSING THE PLANFORM OF 500 CAROLINA BAYS IN LIDAR DIGITAL ELEVATION MAPS**
- 3:00 PM **BREAK**
- 23-5** 3:15 PM Hernandez, Jon Lucas*; Levine, Norman S.: **COASTAL RESILIENCE THROUGH RASTER BASED FLOOD MAPPING AND MODELING: KIAWAH ISLAND, SOUTH CAROLINA**
- 23-6** 3:35 PM Thompson, Grant B.*; Levine, Norman S.: **DRONE BASED MAPPING OF VINEYARDS FOR THE DEVELOPMENT OF PRECISION AGRICULTURE PRESCRIPTION MAPS: A SOUTH CAROLINA CASE STUDY**

SESSION NO. 24***T13. Reconstructing Paleo-Environmental Changes II (GSA Limnogeology Division; GSA Soils and Soil Processes Division; GSA Mineralogy, Geochemistry, Petrology, and Volcanology Division)***

2:00 PM, Francis Marion Hotel, Gold Ballroom

Theodore Them II, Benjamin C. Gill, Jeremy D. Owens and Seth Young, Presiding

- 24-1** 2:00 PM Marroquín, Selva M.*; Pritchard, Jordan Alexandria; Föllmi, Karl B.; Fantasia, Alicia; Ruebsam, Wolfgang; Trabucho-Alexandre, João P.; Gill, Benjamin C.: **EVALUATING ORGANIC MATTER SULFURIZATION AS A MECHANISM OF ENHANCED BURIAL OF REDUCED CARBON AND SULFUR ACROSS THE TOARCIA OCEANIC ANOXIC EVENT**

- 24-2** 2:20 PM Puckett, T. Markham*: **CONSTRUCTION OF A HIGH-RESOLUTION CHRONOSTRATIGRAPHIC FRAMEWORK OF LATE CRETACEOUS (SANTONIAN-MAASTRICHTIAN) DEPOSITS, ALABAMA AND MISSISSIPPI**
- 24-3** 2:40 PM Sunderlin, David*: **TRACKING PALMS IN THE FOSSIL RECORD: IMPLICATIONS FOR RECONSTRUCTING PALEOENVIRONMENTS, PALEOCLIMATES, AND EVOLUTIONARY HISTORY**
- 3:00 PM **BREAK**
- 24-4** 3:15 PM Bryan, Jonathan R.*: **LOWER OLIGOCENE FORALGAL FACIES IN THE FLORIDA PANHANDLE AND SOUTHERN ALABAMA**
- 24-5** 3:35 PM Tormey, Blair R.*; Hearty, Paul J.: **SUPERSTORM WAVES, NOT SEASONAL RAIN: THE ORIGIN OF "BEACH BUBBLES" AT HIGH ELEVATIONS IN THE BAHAMAS DURING THE LAST INTERGLACIAL**
- 24-6** 3:55 PM Hertzberg, Jennifer*; Glaubke, Ryan; Schmidt, Matthew: **RECONSTRUCTING EL NIÑO-SOUTHERN OSCILLATION VARIABILITY OVER THE LAST 60 KYR USING INDIVIDUAL FORAMINIFERA ANALYSES**
- 24-7** 4:15 PM Hill, Morgan*; Medina-Elizalde, Martin; Burns, Stephen J.; McGee, David; Polanco-Martinez, Josue M.; Shen, Chuan-Chou; Decesare, Matthew: **A CONTINUOUS 100 THOUSAND-YEAR STALAGMITE $\delta^{18}\text{O}$ RECORD FROM THE YUCATAN PENINSULA: IMPLICATIONS FOR CARIBBEAN HYDROCLIMATE ON ORBITAL AND MILLENNIAL TIMESCALES**
- 24-8** 4:35 PM Staub, Alexandra Maria*; Lazar, Kelly Best; Moysey, Stephen M.: **THE SEDIMENT RECORD AS AN INDICATOR OF CHANGING OCEAN-LAGOON DYNAMICS, BOKA ASCENSION, CURACAO**

SESSION NO. 25***T17. Recent Advances and New Approaches in the Study of Faults and Shear Zones in Orogenic Systems (GSA Structural Geology and Tectonics Division)***

2:00 PM, Francis Marion Hotel, Pinckney Room

Jackie Langille and Timothy F. Dienesch, Presiding

- 25-1** 2:00 PM Merschat, Arthur*; McAleer, Ryan J.; Levine, Jamie S.F.: **THE SOUTHERN APPALACHIAN BLUE RIDGE: A NATURAL LABORATORY TO EXAMINE CONCEPTUAL MODELS OF FAULT ZONES AT DIFFERENT CRUSTAL LEVELS**
- 25-2** 2:20 PM Mako, Calvin A.*; Caddick, Mark J.: **ESTIMATING MAGNITUDES OF SHEAR HEATING IN STRIKE-SLIP SHEAR ZONES**
- 25-3** 2:40 PM Boling, Kenneth S.*; Hatcher, Robert D.; Lemiszki, Peter J.; Bible, Gary G.: **SEMI-AUTOMATED APPROACH TO MAPPING SMALL SCALE STRUCTURES FOR OIL AND GAS EXPLORATION ALONG THE SOUTHERN CINCINNATI ARCH USING PYTHON AND GIS APPLICATIONS**

SESSION NO. 26***T14. Origin and Significance of Ultramafic Bodies in Suture Zones from the Appalachians and Beyond (GSA Mineralogy, Geochemistry, Petrology, and Volcanology Division; GSA Structural Geology and Tectonics Division)***

3:20 PM, Francis Marion Hotel, Pinckney Room

Celine Martin and Christopher M. Bailey, Presiding

- 26-1** 3:20 PM Seigler, Matthew K.*; Brame, Scott: **PETROGRAPHIC COMPARISON OF ULTRAMAFIC ROCKS IN THE BLUE RIDGE AND INNER PIEDMONT FOR THE UPSTATE OF SOUTH CAROLINA**
- 26-2** 3:40 PM Kerrigan, Ryan J.*: **THE ULTRAMAFIC BODIES OF SOUTHEASTERN PENNSYLVANIA: POSSIBLE DISMEMBERED LAYERED MAFIC INTRUSION**

THURSDAY, 28 MARCH

- 26-3 4:00 PM Martin, Celine*; Flores, Kennet E.; Harlow, George E.: **ORIGIN OF THE META-ULTRAMAFIC ROCKS FROM THE APPALACHIAN MOUNTAINS (EAST COAST OF THE US)**
- 26-4 4:20 PM Centorbi, Tracey*: **VARIATION IN RE-OS SYSTEMATICS ALONG STRIKE IN ULTRAMAFIC ROCKS, NORTH CAROLINA**

SESSION NO. 27

T19. Recent Advances in Saltmarsh Evolution, (Eco) Geomorphology, and Sustainability (GSA Soils and Soil Processes Division; GSA Quaternary Geology and Geomorphology Division; GSA Geology and Society Division)

3:20 PM, Francis Marion Hotel, Colonial Ballroom

Carol A. Wilson, Zoe Hughes and Alejandra Ortiz, Presiding

- 27-1 3:20 PM Wilson, Alicia*; Shanahan, Meghan; Smith, Erik M.: **GROUNDWATER EXPORTS OF DOC FROM SALT MARSHES: A SURVEY OF SOUTH CAROLINA TIDAL CREEKS**
- 27-2 3:40 PM Silva, Camila*; Barber, Donald C.; Mozdzer, Thomas; Aponte, Mercedes J.: **VARIABILITY IN LATE HOLOCENE TO MODERN ORGANIC MATTER CONTENT BENEATH SPARTINA PATENS SALT MARSHES, PLUM ISLAND ESTUARY, MASSACHUSETTS**
- 27-3 4:00 PM Beebe, D. Alex*; Bellais, Kaylyn C.; Cobb Faulk, Bethany; Webb, Bret M.; Horne, Howard E.: **EXAMINING THE DISAPPEARING SALT MARSH "SPITS" IN A TIDAL SUBESTUARY OF MOBILE BAY: RESULTS FROM PISTON CORE ANALYSES, HISTORIC SHORELINE COMPARISONS, AND WAVE CLIMATE MONITORING**
- 27-4 4:20 PM Levesh, Jarrett L.*; McLindon, Chris; Kulp, Mark A.: **FAULT-SLIP HISTORY OF THE DELACROIX ISLAND FAULT SYSTEM AND ITS EFFECT ON HOLOCENE SALT MARSHES OF THE MISSISSIPPI RIVER DELTA PLAIN**

FRIDAY, 29 MARCH 2019

MORNING ORAL TECHNICAL SESSION

SESSION NO. 28

T22. Applications of Hydrology and Biogeochemistry to Stormwater Management (GSA Limnogeology Division; GSA Geology and Society Division; GSA Karst Division)

8:00 AM, Francis Marion Hotel, St. Matthews Room

James J. Connors, Barbara A. Beckingham, Vijay M. Vulava, Timothy J. Callahan and Richard DeVoe, Presiding

- 28-1 8:00 AM Beckingham, Barbara A.*; Vulava, Vijay M.; Callahan, Timothy J.: **PROLIFERATION OF STORMWATER PONDS IN THE COASTAL PLAIN AREAS OF THE SOUTHEASTERN U.S. PRESENTS CRITICAL RESEARCH NEEDS**
- 28-2 8:20 AM Hossain, A.K.M. Azad*: **WATERSHED LEVEL URBAN GROWTH ESTIMATION IN TENNESSEE USING NATIONAL LAND COVER DATABASE**
- 28-3 8:40 AM Conrad, Casey*; Levine, Norman S.: **THE USE OF AN L-THIA-BASED MODIFIED CURVE NUMBER RUNOFF MODEL FOR FLOOD HAZARD MAPPING IN CHARLESTON, SOUTH CAROLINA**
- 28-4 9:00 AM Kuhl, Hannah*; Ellis, Kathryn K.; Kuhl, Hannah; Robinson, Joshua; Greenfield, Dianne I.; Callahan, Timothy J.: **STORMWATER RUNOFF AND TIDAL DISCHARGE: INVESTIGATIONS OF FIVE TIDAL CREEKS FROM THE CENTRAL COAST OF SOUTH CAROLINA**

- 28-5 9:20 AM Legut, Nicholas A.*; Hannides, Angelos K.: **THE ROLE OF A PERMEABLE SAND COLUMN IN MODIFYING TIDAL CREEK GEOCHEMISTRY AND LAND-DERIVED INPUTS TO THE COASTAL OCEAN**
- 28-6 9:40 AM Amatya, Devendra M.*; Callahan, Timothy J.; Harrison, Charles A.; Trettin, Carl C.: **NITROGEN AND CARBON DISCHARGE FROM EXTREME PRECIPITATION EVENTS: A CASE STUDY FROM THE SANTEE EXPERIMENTAL FOREST WATERSHED ON THE ATLANTIC COASTAL PLAIN**
- 10:00 AM **BREAK**
- 28-7 10:15 AM Robinson, Joshua*: **FIELD-BASED ASSESSMENT OF AN URBANIZED MOUNTANE HEADWATER CATCHMENT: THE IMPACT OF WATERSHED-WIDE GREEN STORMWATER INFRASTRUCTURE RETROFITS**
- 28-8 10:35 AM McCabe, Kelly M*; Smith, Erik M.; Benitez-Nelson, Claudia: **EFFECTS OF STORMWATER MANAGEMENT PRACTICES ON NONPOINT SOURCE BOD LOADING TO COASTAL WATERS IN SOUTH CAROLINA**
- 28-9 10:55 AM Smith, Erik M.*: **BIOGEOCHEMISTRY OF STORMWATER PONDS: IMPACTS ON NUTRIENT AND ORGANIC MATTER TRANSFORMATIONS AND TRANSPORT IN COASTAL SOUTH CAROLINA**
- 28-10 11:15 AM Burke, James*; Alpert, Sophie; Beckingham, Barbara A.; Ali, K. Adem: **GREEN LAKES FROM SPACE: MONITORING STORMWATER PONDS IN COASTAL SOUTH CAROLINA BY REMOTE SENSING**
- 28-11 11:35 AM Watson, Sara*; Beckingham, Barbara A.; Vulava, Vijay M.; Mullaugh, Katherine: **DETERMINING ACCURACY OF FIELD WATER QUALITY TESTS FOR CITIZEN SCIENCE USE**

SESSION NO. 32

T3. Gondwana vs. Laurentia: Terrane Accretion and Crustal Growth in the Southeastern United States (GSA Mineralogy, Geochemistry, Petrology, and Volcanology Division; GSA Geochronology Division; GSA Structural Geology and Tectonics Division)

8:15 AM, Francis Marion Hotel, Colonial Ballroom

Paul A. Mueller, James F. Tull and James H. Knapp, Presiding

- 8:15 AM **INTRODUCTORY REMARKS**
- 32-1 8:20 AM Horton, J. Wright*; Daniels, David L.; Duff, Patrick D.; Shah, Anjana K.; McAleer, Ryan J.; Holm-Denoma, Christopher S.; Kunk, Michael J.; Howard, C. Scott; Pratt, Thomas L.: **INVESTIGATING PRE-CRETACEOUS BASEMENT ROCKS BENEATH THE SOUTHEASTERN U.S. COASTAL PLAIN**
- 32-2 8:40 AM Knapp, James H.*: **REVISED EXTENT OF THE SUWANNEE TERRANE: IMPLICATIONS FOR THE LAURENTIA-GONDWANA BOUNDARY IN THE SOUTHEASTERN U.S.**
- 32-3 9:00 AM Dickson, Hannah*; Bollen, Elizabeth M.; Stowell, Harold H.: **THE TIMING OF METAMORPHISM IN THE SOUTHERN APPALACHIANS: FILLING IN THE GAPS USING GARNET SM-ND GEOCHRONOLOGY**
- 32-4 9:20 AM Carter, Mark W.*; Occhi, Marcie E.; Holm-Denoma, Christopher S.; McAleer, Ryan J.: **NEW AGE CONTROLS ON THE EMPLACEMENT OF THE PETERSBURG GRANITE AND ON THE ROCKS INTO WHICH IT INTRUDES, CENTRAL-EASTERN VIRGINIA PIEDMONT, USA**
- 9:40 AM **BREAK**
- 32-5 9:55 AM Ma, Chong*; VanDervoort, Dane S.; Steltenpohl, Mark G.; Schwartz, Joshua J.: **FORMATION, DOCKING, AND OROGEN-PARALLEL TRANSPORT OF A TACONIAN ARC AND BACK-ARC BASIN: THE DADEVILLE COMPLEX IN THE SOUTHERNMOST APPALACHIAN OROGEN**
- 32-6 10:15 AM Tull, James F.*; Davis, Benjamin L.; Parrish, Eric; Schreck, Matthew; Stevens, Andrew: **EXTENT AND STRUCTURAL SETTING OF THE ORDOVICIAN DADEVILLE VOLCANIC ARC COMPLEX IN GEORGIA**

- 32-7** 10:35 AM Barineau, Clinton I.*; Tull, James F.: **THE WEDOWEE-EMUCKFAW-DAHLONEGA BASIN AND DADEVILLE COMPLEX: IMPLICATIONS FOR THE BREVARD ZONE OF ALABAMA AND GEORGIA**
- 32-8** 10:55 AM Duke, Hope J.*; Bailey, Christopher M.; Foster-Baril, Zachary; Stockli, Daniel F.: **U-PB ZIRCON EVIDENCE FOR A CRYPTIC SUTURE IN THE GOOCHLAND TERRANE, VIRGINIA**
- 32-9** 11:15 AM Moecher, David P.*: **UNRAVELING THE PROTRACTED HISTORY (1800-450 MA) OF SOUTHEASTERN LAURENTIA RECORDED IN METAMORPHIC ROCKS OF THE GREAT SMOKY MOUNTAINS BASEMENT COMPLEX (GSMBC)**
- 32-10** 11:35 AM Mueller, Paul A.*; Lin, Qianying; Foster, David A.; Sagul, D. Austin; Aleinikoff, John N.; Heatherington, Ann L.: **ORIGIN, DISTRIBUTION, AND SIGNIFICANCE OF MESOPROTEROZOIC CRUST IN THE SOUTHERN APPALACHIANS: RODINIA REVISTED**

SESSION NO. 33

T4. Marine Vertebrate Paleontology of the Atlantic and Gulf Coastal Plains I (Paleontological Society; GSA Geochronology Division)

8:20 AM, Francis Marion Hotel, Calhoun Room

Robert W. Boessenecker, Rachel Racicot, Sarah J. Boessenecker, Matthew Gibson and N. Adam Smith, Presiding

- 33-1** 8:20 AM Kirkpatrick, Donald R.*; Cicimurri, David J.: **A NEW LATE CRETACEOUS MARINE VERTEBRATE ASSEMBLAGE FROM ALLISONS FERRY, FLORENCE COUNTY, SOUTH CAROLINA**
- 33-2** 8:40 AM Travis Taylor, Leah M.*; Minzoni, Rebecca Totten; Suarez, Celina; Ehret, Dana J.: **NEW EVIDENCE FOR COMPLEX MOSASAUR PALEOBIOLOGY: OXYGEN ISOTOPES IN ENAMEL REVEAL HABITAT VARIATION OF *CLIDASTES* FROM THE MOOREVILLE CHALK, ALABAMA**
- 33-3** 9:00 AM Phillips, George E.*; Case, Gerard R.: **AN ELASMOBRANCH ASSEMBLAGE FROM THE DANIAN (EARLY PALEOCENE) OF MISSISSIPPI**
- 33-4** 9:20 AM Morgan, Donald Joseph*: **REDESCRIPTION OF A LARGE PALEOCENE GAVIALOID FROM THE EAST COAST OF NORTH AMERICA**
- 33-5** 9:40 AM Smith, Kathryn M.*; Bebej, Ryan M.; Geisler, Jonathan; Brown, Merrill Lane; Leverett, Kelsi Tate; Patel, Darshini: **LOCOMOTION AND ENDOCRANIAL MORPHOLOGY OF THE ANCIENT WHALE *GEORGIACETUS*: INSIGHTS INTO THE EVOLUTION OF PROTOCETIDS IN NORTH AMERICA**
- 10:00 AM **BREAK**
- 33-6** 10:15 AM Gibson, Matthew*; Mnieckowski, John; Geisler, Jonathan: **CONTRIBUTIONS OF BILLY PALMER TO THE FOSSIL COLLECTIONS OF THE CHARLESTON MUSEUM INCLUDING A NEW SPECIES OF PROTOCETID WHALE FROM THE TUPELO FORMATION OF SOUTH CAROLINA**
- 33-7** 10:35 AM Perez, Victor J.*: **CHONDRICHTHYAN DIVERSITY ACROSS THE EOCENE-OLIGOCENE TRANSITION OF FLORIDA**
- 33-8** 10:55 AM Boessenecker, Robert W.*; Churchill, Morgan; Buchholtz, Emily A.; Beatty, Brian L.; Geisler, Jonathan: **NEW FOSSILS FROM THE OLIGOCENE OF SOUTH CAROLINA CLARIFY THE IDENTITY OF THE GIANT DOLPHIN “*SQUALODON TIEDEMANI*” AND THE POSTCRANIAL EVOLUTION OF EARLY ODONTOCETES**
- 33-9** 11:15 AM Wilson, Fauve*; Perez, Victor J.; Magallanes, Isaac; MacFadden, Bruce J.: **DIVERSITY AND PALEOECOLOGY OF EARLY MIOCENE CHONDRICHTHYANS FROM THE BELGRADE QUARRY (MAYSVILLE, NORTH CAROLINA)**
- 33-10** 11:35 AM Boessenecker, Sarah J.*; Boessenecker, Robert W.: **DONATION OF A LARGE PRIVATE COLLECTION EXPANDS THE MARINE MAMMAL ASSEMBLAGE FROM THE MIOCENE-PLIOCENE PUNGO RIVER AND YORKTOWN FORMATIONS**

SESSION NO. 34

T5. A Window into Regional Deformation and Sedimentation through Geo-, Thermo-, and Petrochronology (Mineralogical Society of America; GSA Mineralogy, Geochemistry, Petrology, and Volcanology Division; GSA Geochronology Division; GSA Structural Geology and Tectonics Division)

8:20 AM, Francis Marion Hotel, Pinckney Room

David L. Barbeau Jr., Alex Pullen and Andrew Leier, Presiding

- 34-1** 8:20 AM Bieler, David B.*: **METAMORPHISM OF THE MITCHELL DAM AMPHIBOLITE, CHILTON AND COOSA COUNTIES, ALABAMA**
- 34-2** 8:40 AM Thompson, Jacob T.*; Hames, Willis: **SEDIMENT PROVENANCE FOR CARBONIFEROUS OUACHITA-ARKOMA AND BLACK WARRIOR BASINS USING DETRITAL MUSCOVITE 40AR/39AR GEOCHRONOLOGY AND SANDSTONE COMPOSITIONAL ANALYSIS**
- 34-3** 9:00 AM Monami, Shifat*; Uddin, Ashraf; Hames, Willis E.: **A COMPARATIVE PROVENANCE STUDY OF THE LOWER PENNSYLVANIAN POTTSVILLE FORMATION FROM THE NORTHERN APPALACHIAN BASIN IN PENNSYLVANIA AND THE GREATER BLACK WARRIOR BASIN IN ALABAMA**
- 34-4** 9:20 AM Barbeau, David L.*: **APPROPRIATE FILTERING OF ZIRCON GEOCHRONOLOGY DATA: AN EXAMPLE FROM THE CAROLINA TERRANE**
- 34-5** 9:40 AM Moecher, David P.*: **SEARCHING FOR MEANING IN A MOUNTAIN OF DETRITAL ZIRCON AND MONAZITE AGES AND TEXTURES FROM SOUTHEASTERN LAURENTIA**
- 10:00 AM **BREAK**
- 34-6** 10:15 AM Zotto, Steven C.*; Moecher, David P.; Samson, Scott: **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**
- 34-7** 10:35 AM Clay, J. Mitchell*; Moecher, David P.; Bowersox, J. Richard: **INSIGHTS INTO THE INTERACTION OF GRENVILLE OROGENESIS AND MIDCONTINENT RIFTING FROM NEW DETRITAL ZIRCON U-PB GEOCHRONOLOGY OF THE MIDDLE RUN SEQUENCE IN SUBSURFACE KENTUCKY AND OHIO**
- 34-8** 10:55 AM Seckinger, Clay*; Moecher, David P.; Ettensohn, Frank R.: **DETRITAL-ZIRCON PROVENANCE ANALYSIS OF NEOACADIAN GLACIAL DIAMICTITES FROM THE CENTRAL APPALACHIAN BASIN: TESTING FOR INNER-PIEDMONT-TERRANE DEXTRAL TRANSLATION USING CLAST GEOCHRONOLOGIC AND PROVENANCE ANALYSIS**

SESSION NO. 35

T9. Offshore Research on the Mid- and South-Atlantic Continental Shelf (GSA Energy Geology Division)

8:20 AM, Francis Marion Hotel, Rutledge Room

Katherine Luciano, William L. Lassetter, D. Reide Corbett, Clark Alexander, David Mallinson, C. Scott Howard and M. Scott Harris, Presiding

- 35-1** 8:20 AM Conery, Ian W.*; Mallinson, David; Corbett, D. Reide; Walsh, J.P.; Paris, Paul: **TARGETING MARINE SAND RESOURCES FOR NOURISHMENT ON THE OUTER CONTINENTAL SHELF OF NORTH CAROLINA**
- 35-2** 8:40 AM Luciano, Katherine*; Tweel, Andrew; Harris, M. Scott; Long, Joshua; Howard, C. Scott; Sanger, Denise: **ESTIMATING POTENTIAL VOLUMES AND ONSHORE COMPATIBILITY OF SURFICIAL AND SHALLOW SAND RESOURCES ON THE NEAR (3-8 NM) OUTER CONTINENTAL SHELF OFFSHORE OF SOUTH CAROLINA**
- 35-3** 9:00 AM Howard, C. Scott*; Grammatikopoulou, Tassos; Alexander, Clark; Luciano, Katherine; Mallinson, David J.; Corbett, Reide; Walsh, J.P.: **INVESTIGATION OF REE MINERALIZATION**

**FOR OFFSHORE SANDS FROM GEORGIA,
SOUTH CAROLINA, AND NORTH CAROLINA, USA**

- 35-4** 9:20 AM Lassetter, William L.*; Blanchette, Jessica S.; Holm-Denoma, Christopher S.: **MARINE MINERAL RESOURCES ON THE CONTINENTAL SHELF OFFSHORE OF VIRGINIA: NEW INSIGHTS CONCERNING ECONOMIC HEAVY MINERALS**
- 35-5** 9:40 AM Mattheus, C. Robin*; Ramsey, Kelvin W.; Tomlinson, Jaime L.: **SEDIMENTARY DYNAMICS OF THE INNER CONTINENTAL SHELF OF DELAWARE: DO OFFSHORE VIBRACORE RECORDS PROVIDE INSIGHT INTO SHELF GEOMORPHOLOGY?**
- 10:00 AM **BREAK**
- 35-6** 10:15 AM Brothers, Laura*; Foster, David S.; Pendleton, Elizabeth A.; Baldwin, Wayne E.; Ramsey, Kelvin W.; Wehmiller, John; Mattheus, C. Robin: **LATE QUATERNARY EVOLUTION OF THE CONTINENTAL SHELF AND COASTAL SYSTEM OF THE DELMARVA PENINSULA**
- 35-7** 10:35 AM Johnson, Christopher S.*; Mountain, Gregory S.: **PLEISTOCENE CHANNELS ON THE NJ CONTINENTAL SHELF AS A RECORD OF REGIONAL UPLIFT AND SUBSIDENCE: INSIGHTS FROM 3D SEISMIC IMAGING**
- 35-8** 10:55 AM Shew, Roger*: **OFFSHORE OIL/GAS/SEISMIC AND WIND DEBATES: FACTS VERSUS OPINIONS**

SESSION NO. 36

T6. Limnogeology: Sedimentary Records from Modern and Ancient Lakes I (GSA Limnogeology Division; GSA Geochronology Division; GSA Quaternary Geology and Geomorphology Division)

8:30 AM, Francis Marion Hotel, Gold Ballroom

Michael McGlue and Eva Lyon, Presiding

- 36-1** 8:30 AM Rodysill, Jessica R.*; Donnelly, Jeffrey P.; Lane, P.; Sullivan, Richard M.; Toomey, Michael; Woodruff, Jonathan D.; Hawkes, Andrea D.; MacDonald, Dana: **INTENSE HURRICANE VARIABILITY IN THE FLORIDA PANHANDLE FROM SEDIMENTARY ARCHIVES: CENTENNIAL-SCALE CONTEXT FOR HURRICANE MICHAEL AND OTHER MAJOR STORMS**
- 36-2** 8:50 AM Waters, Matthew N.*: **ENVIRONMENTAL CHANGE OF NATURAL LAKES IN THE SE USA THROUGHOUT THE HOLOCENE WITH A FOCUS ON EUTROPHICATION**
- 36-3** 9:10 AM Tanner, Benjamin R.*; Work, Kirsten A.; Bibaud, Riley; Mcleod, Gaelin: **HOLOCENE ORGANIC SEDIMENT ACCUMULATION IN FLORIDA SPRING RUNS**
- 36-4** 9:30 AM Balascio, N.L.*; Kaste, J.M.; Meyer, M.G.; Renshaw, M.; Smith, K.L.; Chambers, R.M.: **A HIGH-RESOLUTION MILL POND RECORD FROM EASTERN VIRGINIA REVEALS THE IMPACT OF PAST LANDSCAPE CHANGES AND REGIONAL POLLUTION HISTORY**
- 9:50 AM **BREAK**
- 36-5** 10:05 AM Cahoon, Kayla M.*; Kaste, J.M.; Balascio, N.L.: **SPHEROIDAL CARBONACEOUS PARTICLES IN A VIRGINIA MILL POND PROVIDE A RECORD OF LOCAL AND REGIONAL COAL COMBUSTION**
- 36-6** 10:25 AM Bottoms, Antonia*; McGlue, Michael; Woolery, Edward; Andrews, William: **UNCOVERING THE CHARACTERISTICS OF THE SALT RIVER PALEO-LAKE IN NORTH-CENTRAL KENTUCKY**
- 36-7** 10:45 AM Streib, Laura C.*; Stone, Jeffery R.; Lyon, Eva; Zimmerman, Susan H.; McGlue, Michael M.: **A 3,000 YEAR RECORD OF HYDROCLIMATE IN THE EASTERN SIERRA NEVADA, CALIFORNIA'S HEADWATERS, USING DIATOM PALEOECOLOGY**
- 36-8** 11:05 AM McGlue, Michael M.*; Woolery, Edward W.; Black, Morgan; Almayahi, Ali: **PRELIMINARY STRATIGRAPHY AND CHRONOLOGY OF CONVICT LAKE (CA), EASTERN SIERRA NEVADA**

**MORNING
POSTER TECHNICAL SESSIONS**

SESSION NO. 29

T13. Reconstructing Paleo-Environmental Changes (Posters) (GSA Limnogeology Division; GSA Soils and Soil Processes Division; GSA Mineralogy, Geochemistry, Petrology, and Volcanology Division)

8:00 AM, Francis Marion Hotel, Carolina Ballroom

Authors will be present from 9 to 11 AM

Booth #

- 29-1** 1 Paton, Timothy*; Alexander, J.H.; Kah, Linda C.: **GEOLOGY, PETROGRAPHY, CATHODOLUMINESCENCE, AND GEOCHEMISTRY OF AN UPPER ORDOVICIAN HARDGROUND FROM CENTRAL KENTUCKY: IMPLICATIONS FOR EARLY SEAFLOOR DIAGENESIS**
- 29-2** 2 Benayoun, Emily*; Young, Seth; Hints, Olle; Martma, Tonu; Owens, Jeremy D.: **PALEOREDOX CHANGES ASSOCIATED WITH EARLY SILURIAN EXTINCTION EVENTS: NEW GEOCHEMICAL EVIDENCE FROM BALTOSCANDIA**
- 29-3** 3 Moorer, Samuel T.*; Schoepfer, Shane D.; Henderson, Charles: **THE MIDDLE TO LATE PERMIAN TRANSITION IN THE CACHE CREEK TERRANE OF BRITISH COLUMBIA, CANADA**
- 29-4** 4 Pritchard, Jordan Alexandria*; Marroquin, Selva M.; Föllmi, Karl B.; Fantasia, Alicia; Ruebsam, Wolfgang; Trabuco-Alexandre, João P.; Gill, Benjamin C.: **INVESTIGATING THE DEVELOPMENT OF ANOXIA WITHIN THE EUROPEAN EPICONTINENTAL SEAWAY DURING THE TOARCIAN OCEANIC ANOXIC EVENT (T-OAE)**
- 29-5** 5 Knight, Marisa D*; Meier, Clara L; Boulila, Slah; Izumi, Kentaro; Kemp, David B.; Them, Theodore R.: **DO SEDIMENTARY MERCURY ANOMALIES REFLECT MASSIVE VOLCANISM? A GLOBAL COMPILATION OF MERCURY CONTENTS ACROSS THE PLIENSCHACHIAN-TOARCIAN (EARLY JURASSIC)**
- 29-6** 6 Sleister, Skip*; Holland, S.: **TESTING FOR CHANGES IN PROVENANCE IN THE MARINE JURASSIC OF WYOMING AND UTAH**
- 29-7** 7 Li, Siqi*: **A FIRST ASSESSMENT OF THE PALEOREDOX UTILITY OF VANADIUM ISOTOPES USING BLACK SHALES FROM AN OCEANIC ANOXIC EVENT**
- 29-8** 8 Wadhams, Jane A.*; Owens, Jeremy D.; Them, Theodore R.: **TRACKING THE INITIAL ONSET OF DEOXYGENATION ACROSS THE PALEOCENE-EOCENE THERMAL MAXIMUM**
- 29-9** 9 Golub, Anna Rose*; Allen, Sarah E.; Meyer, Herbert W.; Sunderlin, David: **NEW PALEOCLIMATE CLAMP ANALYSES OF THE LATE EOCENE FLORISSANT FOSSIL BEDS, CENTRAL COLORADO**
- 29-10** 10 Armengolt, Oscar*; Liutkus-Pierce, Cynthia M.; Takashita-Bynum, Kevin K.: **USING PALEOSOL CHROMA AND MINERALOGY TO TRACK CLIMATE AND ENVIRONMENTAL CHANGES AT LOPEROT, KENYA DURING THE EARLY MIOCENE**
- 29-11** 11 Meier, Clara L*; Knight, Marisa D; Hancock, Leanne G; Behl, Richard J.; Lyons, Timothy W.; Them, Theodore R.: **A MULTI-BASIN SEDIMENTARY MERCURY ANALYSIS OF THE MIOCENE MONTEREY FORMATION**
- 29-12** 12 Sutton, Seth R.*; Culver, Stephen J.; Mallinson, David J.; Robinson, Marci M.; Dowsett, Harry J.; Buzas, Martin A.: **FORAMINIFERAL AND SEDIMENTOLOGICAL ANALYSIS OF MID-MIOCENE SHATTUCK ZONES 10 THROUGH 17 FROM THE CALVERT CLIFFS, MARYLAND**
- 29-13** 13 Monito, Lindsey R.*; Chiocca, Cara; Everett, Andrew; Greco, Nicole; Mellerson, Brianna; Nebel, Angela; Wright, Patricia; St. John, Kristen: **A MULTI-PROXY ANALYSIS OF A RED CLAY CORE FROM THE NORTH PACIFIC ABYSSAL PLAIN TO RECONSTRUCT DEPOSITIONAL PROCESSES AND PALEO-WINDS**
- 29-14** 14 Nebel, Angela*; Wright, Patricia; Monito, Lindsey R.; Mellerson, Brianna; Greco, Nicole; Everett, Andrew; Chiocca, Cara; St. John,

- Kristen: **A DEGLACIAL MELT-WATER RECORD FROM SITE MD02-2560, KANE SPUR REGION, GULF OF MEXICO**
- 29-15 15 Greco, Nicole*; St. John, Kristen: **SEDIMENTOLOGICAL ANALYSES OF THE STEMSEAS SITE 1 CORE (TANNER BASIN, CALIFORNIA BORDERLANDS) SHOWING CHANGES IN SEDIMENT TRANSPORT AND PALEOENVIRONMENTAL CONDITIONS FROM THE YOUNGER DRYAS THROUGH THE HOLOCENE**
- 29-16 16 Mushlitz, Emily B.*; Balascio, Nicholas L.; D'Andrea, William J.; Bradley, Raymond S.: **AN 8000-YEAR RECORD OF CLIMATE AND ENVIRONMENTAL CHANGE FROM LAKE SANDSVATN, FAROE ISLANDS**
- 29-17 17 Marshall, Leah P.*; Balascio, Nicholas L.; D'Andrea, William J.; Wickler, Stephen: **LATE HOLOCENE SEA-LEVEL RECONSTRUCTION FOR THE LOFOTEN ISLANDS, NORWAY USING SEDIMENT RECORDS FROM ISOLATION BASINS**
- 29-18 18 Luyando-Flusa, Soely*; Hein, Christopher J.; Reeder-Myers, Leslie; Rick, Torben; Connell, Jennifer E.: **THE IMPRINT OF SEA-LEVEL RISE AND LAND-USE CHANGE ON OYSTER HABITATS IN A SMALL TRIBUTARY CREEK OF THE UPPER CHESAPEAKE BAY**
- 29-19 19 Welch, Allison M.*; Dutton, Andrea: **EVALUATION OF ELEMENT/CA RATIOS AS A SCREENING TECHNIQUE TO QUANTIFY THE AMOUNT OF DIAGENETIC CALCITE IN FOSSIL CORALS**
- 29-20 20 Brown, Zoe K.*; Lazar, Kelly Best: **IMPACT OF OCEAN ACIDIFICATION ON BENTHIC FORAMINIFERA OF TOUCARI BAY AND PURPLE TURTLE, DOMINICA**

SESSION NO. 30

T15. Geologic Studies of the U.S. Atlantic Coastal Plain (Posters) (GSA Soils and Soil Processes Division; GSA Geochronology Division; GSA Quaternary Geology and Geomorphology Division)

8:00 AM, Francis Marion Hotel, Carolina Ballroom

Authors will be present from 9 to 11 AM

Booth #

- 30-1 21 Truitt, Jasmine Christina*; Torres, Coral Mari; Ortega-Ariza, Diana; Barineau, Clinton I.: **PALEORELIEF ON THE UPPER CRETACEOUS COASTAL PLAIN UNCONFORMITY IN EASTERN ALABAMA AND WESTERN GEORGIA**
- 30-2 22 Long, Joshua*; Hanebuth, Till J.J.; Ludemann, Thomas: **A QUATERNARY STRATIGRAPHIC FRAMEWORK FOR THE SANTEE DELTA REGION OF THE ATLANTIC COASTAL PLAIN AND INNER CONTINENTAL SHELF, SOUTH CAROLINA, U.S.A**
- 30-3 23 Harris, M. Scott*: **REVISED GEOMORPHIC MAP OF THE SOUTH CAROLINA MIDDLE AND LOWER COASTAL PLAIN WITH PORTIONS OF THE INNER CONTINENTAL SHELF**
- 30-4 24 Wykel, C. Andrew*; Doar, William Richardson: **GEOMORPHIC ANALYSIS OF PALEOSHORELINES IN HORRY COUNTY, SOUTH CAROLINA: 1967 VERSUS 2018**
- 30-5 25 Doar, William Richardson*; Arrington, Tanner: **GEOLOGIC FACIES MAP OF THE SOUTH CAROLINA COAST: WHERE DETAILED GEOLOGIC MAPPING AND DATABASES MEET**
- 30-6 26 Thornton, Erik*; Farrell, Kathleen M.: **CROSS SECTION CONSTRUCTION FOR THE STRATIGRAPHIC CHARACTERIZATION OF PLIOCENE-PLEISTOCENE DEPOSITS OF THE NORTH CAROLINA COASTAL PLAIN, FALKLAND 7.5 MINUTE QUADRANGLE**
- 30-7 27 Stadelman, Steve A.*; Gay, Kenny; Anderson, Deborah T.; Taylor, Greg J.: **CAN GEOLOGIC MAPS BENEFIT FROM SOILS DATA? AN EXPLORATIVE INVESTIGATION OF BEDROCK AND SURFICIAL GEOLOGIC MAPS IN NASH COUNTY, NORTH CAROLINA**
- 30-8 28 Spivey, Whitney E.*; Culver, Stephen J.; Mallinson, David J.; Buzas, Martin A.; Dowsett, Harry J.; Robinson, Marci M.: **BENTHIC FORAMINIFERAL COMMUNITY CHANGES ACROSS THE PLIOCENE YORKTOWN FORMATION, SOUTHEASTERN VIRGINIA**

- 30-9 29 Berquist, Peter J.*; Balascio, N.L.; Metzger, Ella; Kaste, James M.: **INVESTIGATION OF SEDIMENT DYNAMICS WITHIN QUEEN CREEK, VIRGINIA: A COLLABORATIVE PROJECT BETWEEN 2-YR AND 4-YR INSTITUTIONS**
- 30-10 30 Smith, Matthew T.*; Hinnov, Linda A.; McLaughlin, Peter P.: **PRELIMINARY EXAMINATION OF THE PALEOCENE-EOCENE RECORD OF A MID-ATLANTIC SHALLOW-MARINE SECTION: THE WOODLAND BEACH CORE, DELAWARE**
- 30-11 31 Bond, William Edward*; Yeager, Kevin M.; Barton, Christopher D.; Erhardt, Andrea M.: **THE FORESTRY RECLAMATION APPROACH: MEASURING SEDIMENT MASS ACCUMULATION RATES IN RECLAIMED MINE LANDS AND NATURALLY REGENERATED LOGGED FORESTS OF EASTERN KENTUCKY**
- 30-12 32 Williams, Abigail*; Kambesis, Patricia N.: **CAVE SEDIMENT ANALYSIS IN CAVE VALLEY CAVE, NEVADA: IMPLICATIONS FOR DESERT HYDROLOGY**
- 30-13 33 Johnson, Sarah*; Thigpen, J. Ryan; McGlue, Michael; Woolery, Edward: **PRELIMINARY QUANTIFICATION OF SEDIMENT STORAGE IN MORAN AND AVALANCHE CANYONS IN GRAND TETON NATIONAL PARK, WYOMING, USA**
- 30-14 34 Clements, Andrew G.*; Hawman, Robert B.; Larramendi, Gustavo A.: **INVESTIGATING RIFT BASINS AND UNDERLYING CRUST BENEATH THE SOUTHEASTERN ATLANTIC COASTAL PLAIN USING TELESEISMIC PHASES RECORDED BY THE SESAME BROADBAND ARRAY**

SESSION NO. 31

T16. Undergraduate Research II (Posters) (Council on Undergraduate Research Geosciences Division; GSA Limnogeology Division; GSA Energy Geology Division; GSA Quaternary Geology and Geomorphology Division; GSA Structural Geology and Tectonics Division)

8:00 AM, Francis Marion Hotel, Carolina Ballroom

Authors will be present from 9 to 11 AM

Booth #

- 31-1 35 Capps, Charles Stephen*: **DYE TRACING OF KARST SOLUTION VALLEYS ALONG THE CUMBERLAND PLATEAU ESCARPMENT, TENNESSEE**
- 31-2 36 Patterson, Justyn A.*; Leon, Daniel; Jovanelly, Tamie J.; Cooper, Sarah: **ASSIGNING AGE PARAMETERS OF THE BERRY COLLEGE GROUNDWATER TABLE**
- 31-3 37 Seckinger, Chance*; Ortega-Ariza, Diana: **POROSITY AND PERMEABILITY TRENDS FROM RESERVOIR ANALOG MIOCENE (PUERTO RICO), PENNSYLVANIAN (KANSAS), AND MISSISSIPPIAN (ALABAMA) CARBONATE ROCKS**
- 31-4 38 Sanchez, Reed*; Romanek, Christopher S.: **MAGNESIAN CALCITE AS A PALEOENVIRONMENTAL INDICATOR**
- 31-5 39 Brent, Emily L.*; Knez, Michael H.; Williams, Brian S.; Swezey, Christopher S.; Haynes, John T.; Lucas, Philip C.: **GEOLOGY AND GEOMORPHOLOGY OF OWL CAVE (SIPHON NO. 1 CAVE) IN THE SILURIAN-DEVONIAN KEYSER LIMESTONE, HIGHLAND COUNTY, VIRGINIA**
- 31-6 40 Cothren, Hannah R.*; Schoepfer, Shane; Godbold, Amanda Lynn: **EFFECTS OF BACKGROUND VOLCANISM ON AN EARLY JURASSIC CORAL REEF**
- 31-7 41 Hites, William T.*; Heckert, Andrew B.; King, Lorin; Weil, Anne: **A PRELIMINARY ANALYSIS OF THE MOGAN SITE, A NEW LATE JURASSIC VERTEBRATE MICROFOSSIL SITE IN THE MORRISON FORMATION IN NORTHEASTERN, WYOMING**
- 31-8 42 Bradford, Maya Y.*; Martin, Anthony J.; Page, Michael: **USING GIS TO DOCUMENT ICHNOLOGICAL RESOURCES OF FIELD SITES FOR FUTURE RESEARCH**
- 31-9 43 Sanchez, Israel*; Heckert, Andrew B.; Foster, John R.; Brand, Nickolas: **SHELLS, SHARKS AND STORMS: COMBINING FOSSIL AND SEDIMENTARY RECORDS TO DESCRIBE AN UPPER CRETACEOUS NEAR-MARINE FOSSIL ASSEMBLAGE FROM NORTHWEST COLORADO**

- 31-10 44 Morton, Colt*; Savrda, Charles E.; Foster, Carleton: **PRELIMINARY OBSERVATIONS OF CARBONATE DEPOSITIONAL RHYTHMS IN PART OF THE UPPER CRETACEOUS PRAIRIE BLUFF CHALK, MOSCOW LANDING, SUMTER COUNTY, WESTERN ALABAMA**
- 31-11 45 Honeck, Jacob W.*; Tobin, Thomas S.; Tuite, Michael L.; Flannery, David M.; Fendley, Isabel; Weaver, Lucas N.; Sprain, Courtney J.: **ASSESSING THE IMPORTANCE OF SAMPLING DEPTH ON $\Delta^{13}\text{C}_{\text{ORG}}$ VALUES IN CONTINENTAL DEPOSITS ACROSS THE K-PG BOUNDARY**
- 31-12 46 McCuen, William Nathanael*; Ishimori, Aika S.: **A SECOND RECORD OF A XIPHIORHYNCHINE BILLFISH RESEMBLING XIPHIORHYNCHUS AEGYPTIACUS FROM THE CHANDLER BRIDGE FORMATION OF SOUTH CAROLINA**
- 31-13 47 Visaggi, Christy C.; Wood, Cat*; Clark, Joshua M.; Crooks, Alexander F.; Dumper, Sydney; Meharg, Jared K.; Ramos, Veronica; Toro, Matthew J.; Reber, Amy J.; Portell, Roger W.: **PREDATOR-PREY INTERACTIONS AND SIZE-FREQUENCY DISTRIBUTIONS RECORDED IN MOLLUSCAN ASSEMBLAGES OF THE PLIO-PLEISTOCENE NASHUA FORMATION OF NORTHERN FLORIDA**
- 31-14 48 Visaggi, Christy C.; Waltermann, Jordan*; Benton, Justin M.; Butler, Tracy; Gamboa, Marcos E.; Simon, Candice E.N.; Tomy, Tyler; Toro, Matthew J.; Reber, Amy J.; Portell, Roger W.: **TAXONOMIC AND ECOLOGICAL DIVERSITY OF MOLLUSCAN ASSEMBLAGES FROM THE PLIO-PLEISTOCENE NASHUA FORMATION OF NORTHERN FLORIDA**
- 31-15 49 Visaggi, Christy C.; Rubin, Harry E.*; Bash, Jennifer G.; Clinton, John Michael; Freeman, Jennifer R.; Golden, Lawrence S.; Hill, Ashley M.; Toro, Matthew J.; Reber, Amy J.; Portell, Roger W.: **TAPHONOMY, BIOEROSION, ENCRUSTATION, AND PALEOENVIRONMENTAL RECONSTRUCTION OF MOLLUSCAN ASSEMBLAGES FROM THE PLIO-PLEISTOCENE NASHUA FORMATION OF NORTHERN FLORIDA**
- 31-16 50 Visaggi, Christy C.; Wilson, Robert A.*; Duong, Lisa N.; Hewitt, Katherine C.; Davis, Lacey J.; Maduro-Salvarrey, Leonardo; Moronta, Eduardo; Toro, Matthew J.; Reber, Amy J.; Portell, Roger W.: **BRIDGING A BIOGEOGRAPHIC GAP BY STUDYING PLIO-PLEISTOCENE EXTINCTION EPISODES THROUGH MOLLUSCAN ASSEMBLAGES OF GEORGIA AND NORTHERN FLORIDA**
- 31-17 51 Childs, Briana D.*; Balascio, Nicholas L.; Ramsey, Kelvin W.: **LATE QUATERNARY PALEOENVIRONMENTAL ANALYSIS OF THE CYPRESS SWAMP FORMATION, DELAWARE**
- 31-18 52 Ocon, Samantha B*; Hughes, Mary Jane; Mills, Sadie M.; Bauer, Jennifer E.; Crippen, Kent J.; Lundgren, Lisa M.; Bex, Richard T.; MacFadden, Bruce J.: **MEASURING SUCCESS: EVALUATING PALEONTOLOGY INSTAGRAM STORIES**
- 31-19 53 Hughes, Mary Jane*; Ocon, Samantha B; Mills, Sadie M.; Bauer, Jennifer E.; Crippen, Kent J.; Lundgren, Lisa M.; Bex, Richard T.; MacFadden, Bruce J.: **ENGAGING IN SOCIAL PALEONTOLOGY: A CASE STUDY OF INSTAGRAM**
- 31-20 54 Gabor, Morgan*; Landers, Brandon; Nord, Julia Ann: **SCIENCE COMMUNICATION: WHO DO YOU LIKE?**

Booth

- 37-1 1 Mustaque, Sharif*; Uddin, Ashraf; Sitaula, Raju P.; Alam, Md.I.; Chowdhury, Nur Uddin Md. Khaled: **PALEOTECTONIC EVOLUTION OF THE EASTERN GONDWANAN RIFT BASIN FROM LATE CARBONIFEROUS-EARLY PERMIAN DEPOSITS IN THE PRESENT-DAY SUB-BASINS OF AUSTRALIA, INDIA, NEPAL AND BANGLADESH**
- 37-2 2 Finnerty, Patrick*; Nolan, Jack T.; Rice, Aaron K.; Peach, Brandon Tyler; Blake, David E.; LaMaskin, Todd A.; Barbeau, David L.: **STATUS OF GEOLOGIC MAPPING AND LA-ICP-MS U-PB ZIRCON GEOCHRONOLOGY FROM THE RALEIGH TERRANE IN THE NORTH CAROLINA EASTERN PIEDMONT**
- 37-3 3 Justiniano, Christian A*; Spector, Ashlyn B.; Perfit, Michael: **TECTONIC EVOLUTION OF THE SAMANÁ COMPLEX, NORTHERN HISPANIOLA: CONSTRAINTS ON COLLISIONAL EVENTS FROM ZIRCON GEOCHRONOLOGY IN ECLOGITIC ROCKS**
- 37-4 4 Goode, Brooklyne M.*; Mueller, Paul A.; Miska, Meridith A.; Kamenov, George D.; Kleinkort, Ryan: **CHARACTERIZING A NEW STANDARD ZIRCON FOR U-PB AND LU-HF**
- 37-5 5 McClellan, Elizabeth*; Lobins, Sydney; Rasiak, Sophia: **NEOPROTEROZOIC TO CAMBRIAN RIFT-TO-DRIFT SEDIMENTATION IN THE BLUE RIDGE PROVINCE OF VIRGINIA**
- 37-6 6 Whately, Emily Alexis*: **IDENTIFYING CYCLICITY AND PROVENANCE THROUGH THIN SECTION PETROLOGY OF SHALLOW MARINE DEPOSITS IN THE INDO-BURMAN RANGES**
- 37-7 7 Weinmann, Benjamin R.*; Ma, Chong; Schwartz, Joshua J.; Steltenpohl, Mark G.: **U-PB ZIRCON DATING OF THE ELKAHATCHEE QUARTZ DIORITE, EASTERN BLUE RIDGE OF ALABAMA**
- 37-8 8 Lemnifi, Awad*; Browning, John; Aouad, Nassib: **MANTLE TRANSITION ZONE DISCONTINUITIES BENEATH HOGGAR SWELL, ALGERIA, NORTHWEST AFRICA**
- 37-9 9 Emishaw, Luelseged*; Abdel Salam, Mohamed: **IMAGING PRECAMBRIAN LITHOSPHERIC HETEROGENEITIES BENEATH THE SOUTHWESTERN BRANCH (SWB) OF THE EAST AFRICAN RIFT SYSTEM**
- 37-10 10 Burford, Drew David*; Rosandich, Brooks; Woolery, Edward; Ravat, Dhananjay; Wang, Yiping: **INTEGRATED SEISMIC-REFLECTION AND MICROGRAVITY IMAGING ACROSS THE SOUTHERN BOUNDARY OF THE CHARLESTON UPLIFT, NEW MADRID SEISMIC ZONE, USA**
- 37-11 11 Alarifi, Saad S.*; Kellogg, James N.; Ibrahim, Elkhedr: **GRAVITY, AEROMAGNETIC AND ELECTROMAGNETIC STUDY OF THE GOLD AND PYRITE MINERALIZED ZONES IN THE HAILE MINE AREA, KERSHAW, SOUTH CAROLINA**
- 37-12 12 Rosandich, Brooks*; Woolery, Edward; Burford, Drew David; Wang, Zhenming; Harris, James B.: **NEAR-SURFACE GEOPHYSICAL INVESTIGATION OF A HYPOTHESIZED QUATERNARY-ACTIVE SHEAR ZONE ACCOMMODATION: NEW MADRID SEISMIC ZONE**

SESSION NO. 38

T7. Past and Future Coastal Evolution in Response to Sea-Level Changes and Storm Impacts (Posters) (GSA Quaternary Geology and Geomorphology Division; GSA Geology and Society Division)

1:00 PM, Francis Marion Hotel, Carolina Ballroom

Authors will be present from 2 to 4 PM

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- 38-1 13 Wheatley, Rachel M.*; Mitra, Siddhartha; van Hengstum, Peter J.; Dellapenna, Timothy; Corbett, D. Reide: **QUANTIFYING EXCHANGEABLE DISSOLVED ORGANIC CARBON DEPOSITED BY HURRICANE RAINWATER**
- 38-2 14 Parker, Lauren*; Lehmann, Asmara; Minzoni, Rebecca Totten; Wallace, Davin J.; Sobrado, Joel: **FLOODS AND EUTROPHICATION IN THE NORTHERN GULF OF MEXICO: AN EVALUATION OF LONG-TERM ENVIRONMENTAL CHANGE AND HUMAN IMPACTS ON COASTAL ESTUARIES**

AFTERNOON POSTER TECHNICAL SESSIONS

SESSION NO. 37

T5. A Window into Regional Deformation and Sedimentation through Geo-, Thermo-, and Petrochronology (Posters) (Mineralogical Society of America; GSA Mineralogy, Geochemistry, Petrology, and Volcanology Division; GSA Geochronology Division; GSA Structural Geology and Tectonics Division)

1:00 PM, Francis Marion Hotel, Carolina Ballroom

Authors will be present from 2 to 4 PM

- 38-3 15 Boyce, C.M.*; Gayes, Paul; Mahmud, Akim: **SPATIAL AND TEMPORAL EVOLUTION OF CUSPATE FEATURES OF THE MID TO LOWER SHOREFACE, GRAND STRAND REGION, SOUTH CAROLINA**
- 38-4 16 Wright, Eric*; Harris, M. Scott; Shen, Zhixiong: **HOLOCENE SHORELINE WELDING ALONG THE GRAND STRAND OF NORTHEASTERN SOUTH CAROLINA**
- 38-5 17 Fink, Madison S.*; Hanebuth, Till J.J.; Oliver, Mimi; Hawkes, Andrea; Talke, Stefan: **SEA-LEVEL CHANGES OVER HISTORIC AND GEOLOGIC TIMESCALES IN WINYAH BAY, SC**
- 38-6 18 Lindley, Ann Marie*; Miller, Taylor; Mitra, Siddhartha; Corbett, Reide; Field, Erin; Muglia, Mike; Mannino, Antonio: **2018 HURRICANE SEASON AND ITS INFLUENCES TO THE ALBEMARLE-PAMLICO ESTUARINE SYSTEM (APES) AND CONTINENTAL MARGIN – PART 1 (TOTAL SUSPENDED SOLIDS, BULK DISSOLVED ORGANIC CARBON, AND TOTAL DISSOLVED NITROGEN)**
- 38-7 19 Miller, Taylor*; Lindley, Ann Marie; Mitra, Siddhartha; Corbett, D. Reide; Field, Erin; Muglia, Mike; Mannino, Antonio: **2018 HURRICANE SEASON AND ITS INFLUENCES TO THE ALBEMARLE-PAMLICO ESTUARINE SYSTEM (APES) AND CONTINENTAL MARGIN – PART 2 (GEOCHEMICAL TRACERS)**
- 38-8 20 Allen, Cody Wayne*; Mallinson, David J.; Culver, Stephen J.: **USING FORAMINIFERAL ASSEMBLAGES, SEDIMENTOLOGY AND GEOPHYSICAL DATA TO ASSESS THE IMPACTS OF HURRICANE FLORENCE ON INNER SHELF AND COASTAL ENVIRONMENTS: BOGUE BANKS AND BEAR ISLAND, NORTH CAROLINA**
- 38-9 21 Cressman, Amy W.*; Mallinson, David J.; Culver, Stephen J.; DeWitt, Regina; Leorri, Eduardo: **DEFINING THE RESPONSE OF A LOW GRADIENT COASTAL SYSTEM TO RAPID SEA-LEVEL CHANGE DURING THE LATE PLEISTOCENE**
- 38-10 22 Arnuk, James*; Magolan, Jessica; Marshall, Frank; Moore, Raymond; Snyder, Benjamin; Polk, Mariko; Marsan, Yvonne; Wells, Dave; Leonard, Lynn; Eulie, Devon: **SHORT-TERM PATTERNS OF POST-STORM RECOVERY ON AN UNDEVELOPED BARRIER ISLAND: HURRICANE FLORENCE AND MASONBORO ISLAND, NC**
- 38-11 23 Hefner, William L.*; Tregaskis, Kathryn A.; Baker, Sarah M.; Benfield, Will Henry; Canaday, Jeffery D.; Chahin, Sarah L.; Sawyer, Audra M.; Ghoneim, Eman; Leonard, Lynn: **INVESTIGATING THE GEOMORPHOLOGY OF STORM-INDUCED OVERWASH ON MASONBORO ISLAND, NC FROM HURRICANE FLORENCE**
- 38-12 24 Joyce, Robert T*; Cornell, Sean: **TREE-RING ANALYSIS OF BARRIER ISLAND AND MAINLAND MARITIME FORESTS, CHINCOTEAGUE BAY, VIRGINIA, USA**
- 38-13 25 Boggs, Bianca Q.*; Shawler, Justin L.; Connell, Jennifer E.; Hein, Christopher J.: **QUANTIFYING THE SLOPE OF ANTECEDENT TOPOGRAPHY UNDERLYING NJ AND MD BARRIER ISLANDS**
- 38-14 26 Ryerson, Owen*; FitzGerald, D.M.; Hughes, Zoe J.; Black, Sarah; Georgiou, Ioannis Y.; Hein, Christopher J.; Novak, Alyssa: **TEMPORAL AND SPATIAL VARIABILITY IN INORGANIC SEDIMENT CONTRIBUTIONS TO THE GREAT MARSH, MASSACHUSETTS**

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- 39-3 29 Schindler, Kimberly*; Yeager, Kevin M.: **RELATIONSHIPS OF GULF OF MEXICO SEAFLOOR CHARACTERISTICS WITH PETROLEUM HYDROCARBONS FOLLOWING THE DEEPWATER HORIZON OIL SPILL**

SESSION NO. 40

T11. UAV/Drone Technology and Spatial Metrics for the Coastal Zone (Posters) (GSA Quaternary Geology and Geomorphology Division)

1:00 PM, Francis Marion Hotel, Carolina Ballroom

Authors will be present from 2 to 4 PM

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- 40-1 30 Peffer, Colby*; Alexander, Clark; Venherm, Claudia: **LONG-TERM AND SHORT-TERM SHORELINE CHANGE TRENDS OF COCKSPUR ISLAND IN THE SAVANNAH RIVER ESTUARY IN GEORGIA**

SESSION NO. 41

T16. Undergraduate Research III (Posters) (Council on Undergraduate Research Geosciences Division; GSA Limnogeology Division; GSA Energy Geology Division; GSA Quaternary Geology and Geomorphology Division; GSA Structural Geology and Tectonics Division)

1:00 PM, Francis Marion Hotel, Carolina Ballroom

Authors will be present from 2 to 4 PM

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- 41-1 31 Gray, Daniel X.*; Heimann, Adriana; Alonso-Perez, Raquel: **EMERALD CHARACTERIZATION BY RAMAN SPECTROSCOPY AND ITS APPLICATION FOR PROVENANCE**
- 41-2 32 Winitsky, Anabel G.*; McNamee, Brittani D.: **INDICATOR MINERAL ANALYSIS IN STREAM SEDIMENTS BORDERING THE NORTH AMERICAN EMERALD MINE IN ALEXANDER COUNTY, NORTH CAROLINA**
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- 41-6 36 Goch, Daniel Michael*; Dieterle, Jesse Daniel; Anderkin, Christian J.: **PRESENCE OF HYDRATED PHASES IN THE WOODBURY CHARNOKITE: POSSIBLE EVIDENCE FOR A LOCALIZED HYDROTHERMAL SYSTEM**
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- 41-8 38 Fleischer, Noah*; McGary, R. Shane: **MAGNETICS SURVEY OF WESTERN VIRGINIA EOCENE VOLCANIC EXPRESSIONS**
- 41-9 39 Trubey, W. Aidyn*; Beutel, Erin K.: **VOLUMETRIC CALCULATION OF THE PACIFIC MANTLE 0-30 MA**
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- 41-11 41 Jones, Sean M.*; Holmes, Ann E.: **FIELD AND PETROGRAPHIC STUDY OF GREAT SMOKY GROUP STRATA EXPOSED ON FORT MOUNTAIN ALONG HIGHWAY 52, MURRAY AND GILMER COUNTIES, GA**
- 41-12 42 Wheeler, Jessica A.*; Ranson, William A.: **GEOLOGY AND EVOLUTION OF THE BLUE RIDGE ESCARPMENT ALONG THE HORSEPASTURE RIVER IN NORTHWESTERN SOUTH CAROLINA AND ADJACENT NORTH CAROLINA**

SESSION NO. 39

T9. Offshore Research on the Mid- and South-Atlantic Continental Shelf (Posters) (GSA Energy Geology Division)

1:00 PM, Francis Marion Hotel, Carolina Ballroom

Authors will be present from 2 to 4 PM

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- 39-1 27 Wehmiller, J.F.*; Ramsey, Kelvin W.; Howard, Scott; Mattheus, C.R.; Harris, M. Scott; Luciano, Katherine: **NEW PERSPECTIVES ON US ATLANTIC COASTAL PLAIN AMINOSTRATIGRAPHY GLEANED FROM EXTENSIVE ANALYSES OF SHELL SPECIMENS FROM INNER CONTINENTAL SHELF VIBRACORES**
- 39-2 28 Long, Joshua*; Hanebuth, Till J.J.; Alexander, Clark; Luciano, Katherine: **SEDIMENTOLOGY AND STRATIGRAPHIC ARCHITECTURE OF QUATERNARY PALEOCHANNEL FILL**

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- 41-17 47 Beacom, Garrett M.*; Carter, Kristin; Tamulonis, Kathryn: **TWO OR THREE THIRD-ORDER STRATIGRAPHIC SEQUENCES? AN EXAMINATION OF THE MARCELLUS FORMATION IN THE NORTHERN SEGMENT OF THE ROME TROUGH, APPALACHIAN BASIN**
- 41-18 48 Freeland, Duncan L*; Tamulonis, Kathryn: **STRATIGRAPHIC CHARACTERIZATION OF THE BURKET FORMATION IN THE NORTHERN WEST VIRGINIA SEGMENT OF THE ROME TROUGH, APPALACHIAN BASIN**
- 41-19 49 Rihl, Grace*; Odhiambo, Ben K.; Giancarlo, Leanna; Arango, Daniel: **SEDIMENT ACCUMULATION RATES AND TRACE METAL INPUT HISTORY IN LAKE MANASSAS AND THE OCCOQUAN RESERVOIR, VIRGINIA, USA**

SESSION NO. 42

T19. Recent Advances in Saltmarsh Evolution, (Eco) Geomorphology, and Sustainability (Posters) (GSA Soils and Soil Processes Division; GSA Quaternary Geology and Geomorphology Division; GSA Geology and Society Division)

1:00 PM, Francis Marion Hotel, Carolina Ballroom

Authors will be present from 2 to 4 PM

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- 42-1 50 King, Kendall*; Hein, Christopher J.; FitzGerald, Duncan M.; Hughes, Zoe J.; Georgiou, Ioannis Y.; Connell, Jennifer E.: **SALT MARSH EVENT SEDIMENTATION: A COMPARATIVE STUDY OF HURRICANE IRMA DEPOSITS ACROSS THE SOUTHEAST U.S.A**
- 42-2 51 Gorr, Alex*; White, Scott; Kimball, Matt; Houser, K.; Smith, Erik M.: **RESPONSE OF INTERTIDAL CREEK GEOMORPHOLOGY AFTER 20 YEARS OF CHANGE AT NORTH INLET, SOUTH CAROLINA**
- 42-3 52 Connell, Jennifer E.*; Herbine, Lauren E.; Gedan, Keryn B.; Hughes, Zoe J.; FitzGerald, Duncan M.; Georgiou, Ioannis Y.; Hein, Christopher J.: **EVENT-DRIVEN SEDIMENTATION IN MASSACHUSETTS AND VIRGINIA SALT MARSHES**

SESSION NO. 43

T20. The Science, Environmental Impacts, and Policy of Beach Nourishment (Posters) (GSA Quaternary Geology and Geomorphology Division; GSA Geology and Society Division)

1:00 PM, Francis Marion Hotel, Carolina Ballroom

Authors will be present from 2 to 4 PM

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- 43-1 53 Dick, Kaitlin Louise*; Hannides, Angelos K.: **THE IMPACT OF PHYSICAL AND MINERALOGICAL PROPERTIES OF INTERTIDAL SANDS AND RESULTANT MICROBIAL ECOLOGY ON THE USE AND MODIFICATION OF LAND DERIVED SUBSTANCES**
- 43-2 54 Garnand, Alexandra*; Oakley, Adrienne; Cornell, Sean; Bochicchio, Christopher; Bond, Thomas; Sergeant, Eric: **TRACKING TRENDS IN SAND GRAIN SIZE ALONG A BARRIER ISLAND AFTER A MAJOR BEACH REPLENISHMENT: WALLOPS ISLAND, EASTERN SHORE, VIRGINIA**

AFTERNOON ORAL TECHNICAL SESSIONS

SESSION NO. 44

T4. Marine Vertebrate Paleontology of the Atlantic and Gulf Coastal Plains II (Paleontological Society; GSA Geochronology Division)

1:40 PM, Francis Marion Hotel, Calhoun Room

Robert W. Boessenecker, Rachel Racicot, Sarah J. Boessenecker, Matthew Gibson and N. Adam Smith, Presiding

- 44-1 1:40 PM Gale, Ashby*: **TOURISM AND THE PLEISTOCENE: MAKING FOSSILS 'COOL' FOR THE AVERAGE CITIZEN**
- 44-2 2:00 PM Smith, Nicholas S.*; Sumrall, Colin D.: **A COMPARISON OF BRITTLE STAR (OPHIUROIDEA: ECHINODERMATA) BIODIVERSITY FROM THE UPPER MISSISSIPPIAN (CHESTERIAN) BIG CLIFTY FM. IN SULPHUR, IN AND GLEN DEAN FM. IN HOPKINSVILLE, KY**
- 44-3 2:20 PM Sweeney, Aidan; Sumrall, Colin D.*: **MORPHOLOGY AND FUNCTION OF THE SPIRALING PIVOT POINTS IN THE PROXIMAL STEM OF GLYPTOCYSTITOID RHOMBIFERAN ECHINODERMS**
- 44-4 2:40 PM Phillips, George E.*; Kunath, Marvin: **SUBSTRATE AVAILABILITY IN THE UPPER CRETACEOUS OYSTER EXOGRYA SAY (OSTREIDA: GRYPHAEDAE): A CASE STUDY IN THE MAASTRICHTIAN OF MISSISSIPPI AND ALABAMA**

SESSION NO. 45

T21. Mesozoic to Cenozoic Tectonics and Magmatism of the Southeastern United States (GSA Mineralogy, Geochemistry, Petrology, and Volcanology Division; GSA Geochronology Division; GSA Structural Geology and Tectonics Division)

1:40 PM, Francis Marion Hotel, Rutledge Room

Erin K. Beutel and John Chadwick, Presiding

- 45-1 1:40 PM Hartley, Hannah B*; Beutel, Erin K.; Filina, Irina; Liu, Mei: **INCORPORATION OF NEW DATA TO REFINE THE TECTONIC HISTORY OF THE GULF OF MEXICO 230 MA - 180 MA**
- 45-2 2:00 PM Albayrak, Kubra Sibel*; Kellogg, James N.: **3-D POTENTIAL FIELD INVERSION OF CAMP CLUBHOUSE CROSSROADS MAFIC INTRUSIVE PLUTON, COASTAL PLAIN, SOUTH CAROLINA**
- 45-3 2:20 PM Hatcher, Robert D.*; Prowell, David C.: **POST-PALEOZOIC UPLIFT OF THE SOUTHERN AND CENTRAL APPALACHIANS: THE GREATEST REMAINING UNSOLVED PROBLEM IN APPALACHIAN TECTONICS**
- 45-4 2:40 PM Duff, Patrick D.*; Kellogg, James N.: **THE BRUNSWICK MAGNETIC ANOMALY: GEOPHYSICAL SIGNATURE AND GEOLOGIC SOURCE**

SESSION NO. 46

T6. Limnogeology: Sedimentary Records from Modern and Ancient Lakes II (GSA Limnogeology Division; GSA Geochronology Division; GSA Quaternary Geology and Geomorphology Division)

2:00 PM, Francis Marion Hotel, Gold Ballroom

Michael McGlue and Eva Lyon, Presiding

- 46-1 2:00 PM Rech, Jason A.*; Mischke, Steffen; Quade, Jay; Tenison, Christina N.: **INTERPRETING THE DEPOSITIONAL ENVIRONMENT OF NEOGENE COQUINA DEPOSITS IN JORDAN**
- 46-2 2:20 PM Yeager, Kevin M.*; Smiley, Rebecca; Soreghan, Michael J.; Kimirei, Ismael A.; McGlue, Michael M.: **DETECTING SPATIAL VARIABILITY IN SEDIMENT ACCUMULATION RATES AT THE TUUNGANE PROJECT CO-MANAGEMENT SITE AT NORTHERN MAHALE (LAKE TANGANYIKA, TANZANIA) USING ²¹⁰PB**

- 46-3** 2:40 PM Brannon, McKenzie Ann*; McGlue, Michael: **PATTERNS AND INDICATIONS OF LIMNOGEOLOGICAL CHANGE IN HOLOCENE-AGED SEDIMENTS FROM LAKE TANGANYIKA (EAST AFRICA)**

SESSION NO. 47

T10. Sedimentary Systems of the Post-Alleghanian Eastern U.S. Atlantic Margin: Implications for Geologic Evolution, Resource Potential, and Carbon Sequestration (GSA Energy Geology Division; GSA Geology and Society Division)

2:00 PM, Francis Marion Hotel, Pinckney Room

Andrew Parent and C. Mason, Presiding

- 47-1** 2:00 PM Craddock, William*; Self-Trail, Jean M.; Hatcherian, Javin J.; O'Sullivan, Paul B.; Enomoto, Catherine B.; Hackley, Paul C.: **SOURCE ROCK AND APATITE FISSION TRACK DATA PERTINENT TO PETROLEUM SYSTEM FRAMEWORK ALONG THE ATLANTIC MARGIN OF THE SOUTHEASTERN UNITED STATES**
- 47-2** 2:20 PM Uddin, Ashraf*; King, David T.; Esposito, Richard A.; Pashin, Jack C.: **SEQUESTERING CARBON DIOXIDE WITHIN THE UPPER CRETACEOUS TUSCALOOSA GROUP OF THE US GULF COAST: COMPOSITION AND GEOCHEMICAL ANALYSIS**
- 47-3** 2:40 PM Bartholomew, Mervin J.*; Kwon, Youngsang; Stewart, Kevin G.; Hill, Jesse S.; Wooten, Richard M.; Witt, Anne C.; Prince, Philip; Evans, Mark A.; Jackson, William T.; Cook, Brian: **RELIC APPALACHIAN UPLANDS: LANDSCAPES THAT MAY HAVE EVOLVED FROM THE FRONT- AND BACK-SIDES OF RIFTING**

SESSION NO. 48

T11. UAV/Drone Technology and Spatial Metrics for the Coastal Zone (GSA Quaternary Geology and Geomorphology Division)

2:00 PM, Francis Marion Hotel, Colonial Ballroom

Narcisa Pricope and Joanne Halls, Presiding

- 48-1** 2:00 PM Pricope, Narcisa*: **MULTI-SENSOR ASSESSMENT OF THE EFFECTS OF VARYING PROCESSING PARAMETERS ON UAS PRODUCT ACCURACY AND QUALITY IN COASTAL REGIONS**
- 48-2** 2:20 PM Baxley, Joseph*; Pricope, Narcisa: **INVESTIGATION OF PHRAGMITES EXTENT AND POTENTIAL DRIVERS USING UAV TECHNOLOGY**

- 48-3** 2:40 PM Sundin, Gary*; Luciano, Katherine; Arrington, Tanner; Stone, Benjamin; Calloway, Joshua; Kingsley-Smith, Peter: **USING A CONSUMER-GRADE UNMANNED AERIAL VEHICLE TO MEASURE SHORT-TERM GEOMORPHOLOGICAL CHANGES IN DYNAMIC COASTAL SETTINGS**

3:00 PM **BREAK**

- 48-4** 3:15 PM Schaale, Lauren*; Baxley, Joseph; Pricope, Narcisa; Danner, Raymond M.: **VIEWING HABITAT THROUGH ANOTHER LENS: BIRD NEST-SITE SELECTION AND PRODUCTIVITY ACROSS A BEACH THERMAL LANDSCAPE**
- 48-5** 3:35 PM Magolan, Jessica*; Halls, Joanne: **INVESTIGATING THE TRANSITION FROM FRESHWATER TO SALTWATER WETLANDS IN SOUTHEASTERN NORTH CAROLINA USING GIS, REMOTE SENSING, AND STATE-AND-TRANSITION SIMULATION SOFTWARE**
- 48-6** 3:55 PM Moore, Raymond*; Ghoneim, Eman M.; Wells, Dave; Zamora, P.B.: **MAPPING SUBMARINE GROUNDWATER DISCHARGE USING A THERMAL INFRARED SENSOR MOUNTED ON AN UNMANNED AERIAL SYSTEM IN COASTAL NORTH CAROLINA, USA**

SESSION NO. 49

T12. Natural Hazards Prediction (GSA Mineralogy, Geochemistry, Petrology, and Volcanology Division; GSA Quaternary Geology and Geomorphology Division; GSA Geology and Society Division; GSA Karst Division)

2:00 PM, Francis Marion Hotel, St. Matthews Room

Antonios Marsellos, Katerina Tsakiri, Bret Bennington, Jase Bernhardt and Menas Kafatos, Presiding

- 49-1** 2:00 PM Parton, Michael*; Powell, Christine A.; Cox, Randel Tom: **MODELING HYPOCENTERS TO PREDICT SURFACE FAULT LOCATIONS WITHIN THE EASTERN TENNESSEE SEISMIC ZONE**
- 49-2** 2:20 PM Capps, Rachel*; Brame, Scott; Crafton, Audrey: **STABILITY ANALYSIS OF WEATHERED VOLCANIC ROCK SLOPES IN THE CARIBBEAN**
- 49-3** 2:40 PM Jaume, Steven C.*; Desilets, Reagan D.; Levine, Norman S.: **GETTING UNDER THE SURFACE OF THE CHARLESTON PENINSULA TO PREDICT EARTHQUAKE GROUND MOTION**

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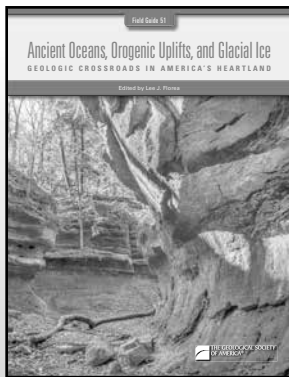
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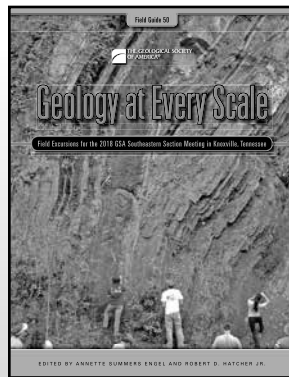


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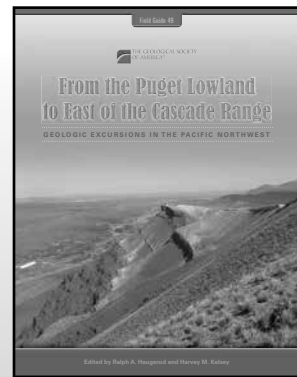


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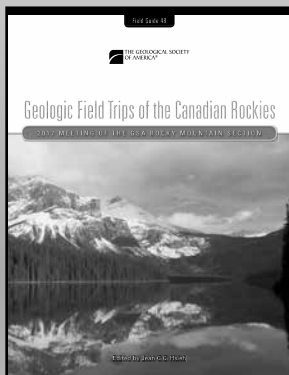


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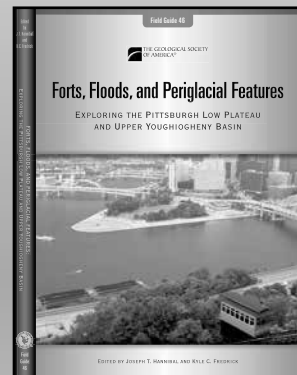


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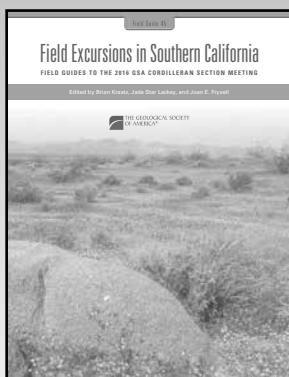


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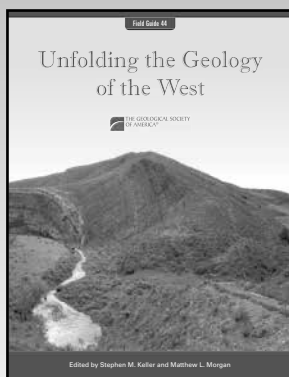


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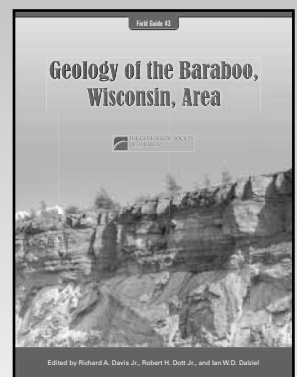


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