SOUTHEASTERN Section Meeting
30–31 March 2017
Omni Richmond Hotel
Richmond, Virginia, USA
66th Annual Meeting
Southeastern Section of the Geological Society of America
Richmond, Virginia, USA
30–31 March 2017
www.geosociety.org/section/se/2017mtg

Rockin’ the Fall Zone

Local Committee for the 2017 Meeting
General Co-Chairs .......................... David Spears, Karen Layou
Technical Program Co-Chairs ....................... Mark Carter, Beth McClellan
Field Trip Co-Chairs ........................... Chuck Bailey, Shelley Jaye
Exhibits Chair .................................. Chee Saunders
Student Volunteer Chair ......................... Lynsey LeMay
Sponsorship Co-Chairs ......................... Matt Heller, Steve Leslie

Southeastern Section Officers 2016–2017
Chair ............................................. Robert J. Tracy
Vice-Chair ..................................... David Spears
Chair-Elect ................................. Jonathan Mies
Secretary-Treasurer ....................... Blair R. Tormey
Past Chair ................................. Elizabeth A. McClellan

Sponsors
We are grateful to those groups recognized below for their generous support! Please, thank them when you meet them. Logos can be seen on page 7.
Virginia Department of Mines, Minerals and Energy
College of William and Mary
James Madison University
Martin Marietta
University of Tennessee
Springer Nature

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 8). If you need to report unacceptable behavior, please contact:
  GSA Executive Director, Vicki McConnell, vmcconnell@geosociety.org
  GSA Past President, Jonathan Price, jprice@unr.edu
You may also stop by the GSA registration desk or the GSA Bookstore to have them directly contacted via phone.
Strategically located on the Fall Zone, Richmond sits where the James River dramatically cascades over the Petersburg Granite at the eastern edge of the Piedmont to the sedimentary strata of the Coastal Plain. The Class IV rapids running through the city’s downtown area, and visible from walking trails along Belle Isle, are recognized as the best urban whitewater in America. As a former capital of the Confederacy, opportunities abound for history buffs, including the Civil War Visitor Center and historic battlefields. Richmond also has a vibrant art and music scene, a growing microbrewery industry, and is home to Lewis Ginter Botanical Garden, named one of the best botanical gardens in the country. With either a stroll around town, or a short drive to the mountains or coast, Richmond is ideally located to explore the geologic diversity of the southeast. The meeting is taking place within the convention facilities of the Omni Richmond Hotel, located at 100 South 12th Street, Richmond, VA 23219, USA, +1-804-344-7000.

ACCOMMODATIONS
To make your reservations, please call Omni Reservations at +1-804-344-7000 and be sure to mention you are attending the Southeastern GSA Meeting.

RICHMOND WEATHER
Virginia spring weather can be variable; expect temperatures to range from highs in the mid-60s to lows in the low 40s. All conference sessions will be held in the conference hotel and will not require walking outdoors.

TRANSPORTATION
Airport: Downtown Richmond is served by the Richmond International Airport. Taxi service to downtown Richmond from the airport is approximately US$25.

Train: The Omni is approximately six blocks from the Amtrak Main Station (Richmond) and eight miles from the Amtrak Staples Mill Station.

Driving directions from I-64 (and I-95): From I-64, take Exit 190, merging onto I-95 South. On I-95 South, take Exit 74A onto I-195 (toll road). Take the Canal Street exit and pay toll ($0.30). Turn right onto 10th Street. Turn right at the light onto Cary Street. For valet parking, take an immediate right onto 12th Street and into the hotel motor entrance.

Parking: The self-parking rate at the Omni is US$3.50/hour plus tax per vehicle and the overnight valet rate is US$25 including tax. Additional parking can be found for variable rates at public parking lots near the Omni. See https://pshs.virginia.gov/media/2165/RIC_Parking.pdf for further information.

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

REGISTRATION
On-Site Registration Schedule
- Wednesday, 29 March 2017: 3–7 p.m.
- Thursday, 30 March 2017: 7 a.m.–5 p.m.
- Friday, 31 March 2017: 7 a.m.–noon

REGISTRATION FEES (all fees are in U.S. dollars)

<table>
<thead>
<tr>
<th>Category</th>
<th>Standard Full Meeting</th>
<th>One Day</th>
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<tbody>
<tr>
<td>Professional member</td>
<td>$230</td>
<td>$140</td>
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<td>Professional nonmember</td>
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<tr>
<td>Field trip/workshop only</td>
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Cancellations, changes, refunds
Requests for additions, changes and cancellations must have been received at GSA Headquarters in writing by 6 March 2017. No refunds will be made on cancellation notices received after this date. Refunds will be mailed from GSA after the meeting; refunds for fees paid by credit card will be credited to the card identified on the registration form. GSA cannot provide refunds for on-site registration or event ticket sales.
Continuing Education Units (CEU)

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.

FIELD TRIPS

All field trips will depart from the Richmond Omni Hotel. Please check in at the Field Trip desk near the Registration Booth prior to the field trip leaving. We are pleased to offer the following rebate amounts to students interested in attending field trips: $10 off for half-day trips, $50 off for one-day trips, and $75 off for multi-day trips. One rebate allowed per student. Reimbursements will be distributed after the meeting.

Pre-Meeting

1. Geology along the Blue Ridge Parkway in Virginia. Check in at 7 a.m., Monday, 27 March. Trip runs 27–29 March. Cost: US$275. Mark Carter, USGS, mcarter@usgs.gov; Scott Southworth, USGS; ssouthw@usgs.gov; Richard Tollo, GWU; rtollo@gwu.edu; Arthur Merschat, USGS; Sara Wagner, GWU, Ava Lazor, GWU; John Aleinikoff; USGS.

   This trip explores the geology along the Blue Ridge Parkway in Virginia, from the Neoproterozoic to Cambrian cover and Mesoproterozoic basement of the Blue Ridge anticlinorium in central Virginia, to the allochthonous eastern Blue Ridge metamorphic complexes in southern Virginia. Several stops will also focus on regional surficial deposits.

2. From Laurentia to Iapetus: Traversing the Blue Ridge–Piedmont Terrane Boundary in Central Virginia. Check in at noon, Tuesday, 28 March. Trip runs 28–29 March. Cost: US$170. Christopher M. Bailey, College of William and Mary, cmbail@wm.edu; Anna V. Spears, College of William and Mary, avspears@email.wm.edu; Aaron Marshall, College of William and Mary.

   Neoproterozoic rifting along the southeastern margin of Laurentia opened the Iapetus Ocean by the Early Cambrian. This trip will examine rocks in the central Virginia Blue Ridge and Piedmont that record faulting, sedimentation, and volcanism associated with rifting, passive margin development, and the subsequent closure of Iapetus in the Paleozoic.

3. Fossil-Collecting from the Middle Miocene Carmel Church Quarry Marine Ecosystem. Check in at 8 a.m., Wednesday, 29 March. Trip runs 29 March. Cost: US$70 (min. 8/max. 21). Alexander K. Hastings, Virginia Museum of Natural History, alexander.hastings@vmnh.virginia.gov; Ray Vodden, Virginia Museum of Natural History, raymond.vodden@vmnh.virginia.gov; Christina Byrd, Virginia Museum of Natural History, christina.byrd@vmnh.virginia.gov.

   Attendees will travel to the Carmel Church Quarry (Ruther Glen, Virginia) to collect fossils from a Paleocene to Pleistocene stratigraphic sequence, including a highly fossiliferous exposure of the Miocene Calvert Formation. Common fossil finds include shark teeth and whale bones, to be curated at the Virginia Museum of Natural History.

4. Geology and Geomorphology of Belle Isle, Richmond. Check in at 1 p.m., Wednesday, 29 March. Trip runs 29 March.
This afternoon walking tour of Belle Isle in downtown Richmond will explore a variety of geological features in easily accessible exposures of the Petersburg Granite at the Falls of the James. The history of human interactions with this landscape will also be discussed. Students are particularly encouraged to participate.

Post-Meeting

5. Geologic Controls on Cave Development in the Burnsville Cove Area, Bath and Highland Counties, Virginia. Check in at 7:30 a.m., Saturday, 1 April. Trip runs 1 April–2 April. Cost: US$200. Christopher Swezey, USGS, cswezey@usgs.gov; John Haynes, James Madison University, haynesjx@jmu.edu; Phil Lucas, Virginia Speleological Survey; Rick Lambert, Virginia Speleological Survey.

This two-day trip examines the principal Silurian and Devonian stratigraphic units associated with cave development in and around the Burnsville Cove, one of the most significant karst areas in the Appalachian Mountains. As part of the stops on this field trip, participants will have the opportunity to enter caves in the area to see the stratigraphic units from the “inside-out” so that their influence on cave development can be better explained and understood.


This two-day trip examines lower Tertiary and upper Tertiary beds along the James River from Richmond to Burwells Bay in east-central Virginia. Collections of samples and specimens will be possible at most localities. Stops will be accessed via boat.

7. Geologic Evolution, Modern Processes, and Management Strategies of Virginia's Mainland Beaches and Barrier Islands. Check in at 7 a.m., Saturday, 1 April. Trip runs 1–2 April. Cost: US$250. Michael Fenster, Randolph Macon College, mfenster@rmc.edu; Christopher Hein, Virginia Institute of Marine Science, hein@vims.edu.

This two-day trip visits beach sites to discuss modern coastal processes and management issues in Virginia Beach, Cape Henry, and Sandbridge on Day 1, and visit (via boat) Parramore and Cedar islands along the Virginia Eastern Shore on Day 2.

8. Geology and Biostratigraphy of the Potomac River Cliffs at Stratford Hall, Westmoreland County, Virginia. Check in at 7 a.m., Saturday, 1 April. Trip runs 1 April. Cost: US$95. Rob Weems, USGS, rweems4@gmail.com; Lucy Edwards, USGS, leedadward@usgs.gov; Bryan Landacre, USGS.

This one-day trip examines fossiliferous Miocene strata exposed along the Potomac River at historic Stratford Hall on Virginia’s Northern Neck. Participants will also visit Stratford Hall for a wine and cheese reception at the end of the day.

9. Geology of the Petersburg Batholith, Eastern Piedmont, Virginia. Check in at 7:30 a.m., Saturday, 1 April. Trip runs 1 April. Cost: US$70. Brent Owens, William & Mary, beowen@wm.edu; Mark Carter, USGS, mcarter@usgs.gov; Christopher M. Bailey, William & Mary, cmbail@wm.edu.

This trip explores the geology of the ~300 Ma Petersburg granitic batholith, one of the largest Alleghanian plutonic complexes in the southern Appalachians. Stops include the extensive exposures at the Falls of the James, an active quarry, and several additional outcrops in the Richmond area.

10. Geology and the Petersburg Campaign in the American Civil War. 7:30 a.m., 1 April. Cost: US$60. C.R. Berquist, VDGMR, crberq@wm.edu; Marcie Occhi, VDGMR, marcie.occhi@dmme.virginia.gov; Aaron Cross, VDGMR, aaron.cross@dmme.virginia.gov; Jessica Strand, VDGMR.

This field trip reveals the relationship between geology and style of combat during the 1864-1865 Petersburg Campaign, which sprawled across the Coastal Plain, the Fall Zone, and the Piedmont in south-central Virginia.


The Arvonia Formation in the Chopawamsic Terrane is actively mined for slate and kyanite at localities in Buckingham County, Virginia. This field trip will include a regional overview of the Chopawamsic Terrane and stops at both Buckingham Slate to view the quarry as well as slate processing facilities and Kyanite Mining Corporation to examine the quarry, and kyanite processing facilities.

TECHNICAL PROGRAMS

All technical sessions are scheduled for oral and poster presentations beginning at 8 a.m., Thursday, 30 March, and concluding 5 p.m., Friday, 31 March.

Session Chair Orientation and Breakfast

Session chairs are invited to attend the complimentary Session Chairs Orientation and Breakfast from 7–7:50 a.m. in the Potomac F, Thursday, 30 March and Friday, 31 March. Please only attend the morning of your assigned session day. Session chairs are requested to adhere strictly to the schedule and to limit speakers to the published allotted times.

Information for Presenters

Oral Presenters

Oral sessions have 20 minutes per presentation (17 minutes presentation; 3 minutes questions and discussions). Presentations must be prepared using PowerPoint or PDF format. One laptop computer with Windows 7 (no Macs available) with PowerPoint 2010, one LCD projector and one screen is provided for all oral sessions. In addition, each
The room is equipped with a lectern, PowerPoint advance, laser pointer, and a speaker timer. Speakers may not use their own laptops for presentation.

**Poster Presenters**

Morning session posters must be removed by noon and afternoon session posters by 5 p.m. Poster presenters will have one 4' by 8' horizontal (landscape) display board. Electrical hookups will not be available for poster boards.

**Speaker Ready Room**

The Speaker Ready Room is located in the Omni Richmond Hotel Canal Room. All oral session presenters must visit the Speaker Ready Room before their scheduled presentation to ensure their PowerPoint or PDF file is properly configured and operating and to load it onto the meeting server. Failure to do so may result in presentations being omitted from session sequences. The Speaker Ready Room is open for program checking and speaker assistance as follows:

**Speaker Ready Room Schedule**

Wednesday, 29 March  noon–7 p.m.
Thursday, 30 March 7 a.m.–5:30 p.m.
Friday, 31 March 7 a.m.–2 p.m.

**Cameras, Sound Equipment and Smoking Policy**

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

**Symposia**

S1. From Mountains to Coast: Biogeochemical Processes Affecting the Water Quality of the Bay in Our Backyard
S2. Tectonics of Blue Ridge and Piedmont Terranes: Insight from Integrated Studies (Posters)
S3. Geologic Maps and Map Derivatives: The Legacy of Mike Higgins (Posters)
S4. Geology and the Civil War

**Theme Session**

T2. Cenozoic Paleontology of the Mid-Atlantic
T3. Geoscience Careers for New Geoscience Graduates
T4. Digital Imaging Techniques for Enhancing Student Learning and Research
T5. Beaches, Barriers, and Marshes of the Southeast Coast: Dynamic Systems in a Changing Climate
T6. Karst Geology and Hazards in the Southeastern U.S. (Posters)
T7. Transforming Geoscience Teaching and Learning at 2Y and 4Y Colleges
T9. Seismic Zones, Paleoseismology, and Neotectonics in the Southeastern United States
T10. Deciphering Metamorphic Histories in Multiply-Deformed Terranes in the Piedmont and Blue Ridge
T11. Hydrology and Hydrogeology in the Southeast: Processes, Problems, and Geologic Controls
T12. Topics in Paleozoic Paleontology and Stratigraphy
T15. Plutonism and Volcanism in the Appalachians and Beyond
T16. Stormwater Control Measures: Runoff Quantity and Pollution Science and Management in the Southeastern U.S.
T17. Geologic Studies of the U.S. Atlantic Coastal Plain Province
T19. Undergraduate Research (Posters)
T20. Clastics, Carbonates, and Soils (Posters)

**Discipline Sessions**

Archaeological Geology, Paleoclimate, and Geomorphology (Posters)
Economic & Energy Geology (Posters)
Environmental Geology & Geochemistry (Posters)
Folds, Faults, Fractures, & Terranes
Geoinformatics and Geoscience Education (Posters)
Paleontology, Paleoeocology, and Taphonomy (Posters)
Sponsored by the Paleontological Society
Petrology and Planetary Geology (Posters)

**ABSTRACTS**

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

**EVENTS**

**Opening Icebreaker.** Wed., 29 March, 5–7 p.m. Join us in the James River Ballroom for an opening reception including hors d’oeuvres and a cash bar.

**Session Chair Orientation and Breakfasts.** Thurs., 30 March and Fri., 31 March, 7–7:50 a.m. Session chairs are invited to attend the complimentary Session Chairs Orientation and Breakfast in Potomac F. Please attend the morning of the day of your assigned session only.

**Library of Virginia Maps Open House.** Thurs., 30 March, 1–4 p.m. The Library of Virginia’s collections house approximately 68,000 maps including those related to the field of geology. The Library of Virginia will display for a limited time geological maps by William Barton Rodgers and Jedidiah Hotchkiss, those published in late 19th century atlases, maps of southwestern Virginia completed by C.R. Boyd, late 19th and early 20th century geologic atlases, and select archival items from the Virginia Geological Survey Records Collection, 1834-1903, Accession 24815. The library is about a 10 minute walk from the Omni and located at 800 E. Broad St., Richmond, VA 23219.

**Southeastern GSA Section Breakfast and Business Meeting.** Thurs., 30 March, 6:30–8 a.m. Rappahannock Room.

**GSA Campus Representative Breakfast.** Fri., 31 March 7–7:50 a.m., Potomac F. Southeast GSA Campus Representatives are invited to attend a complimentary breakfast.

**BOEM Cooperative Agreement Data Coordination Meeting.** Fri., 31 March 2–5 p.m., Potomac F.
STUDENT AND EARLY CAREER PROFESSIONAL OPPORTUNITIES

Geoscience Career Mentoring Luncheons. Jennifer Nocerino, jnocerino@geosociety.org.

Roy J. Shlemon Mentor Program in Applied Geoscience. Thurs., 30 March, noon–1:30 p.m., Rappahannock Room. Students and early career professionals will have the opportunity to discuss career prospects and challenges with applied geoscientists from various sectors over a FREE lunch.

John Mann Mentors in Applied Hydrology Program. Fri., 31 March, noon–1:30 p.m., Rappahannock Room. Students and early career professionals interested in applied hydrogeology or hydrology as a career will have the opportunity to network with professionals in these fields over a FREE lunch.

Geoscience Career Workshops. Jennifer Nocerino, jnocerino@geosociety.org.

Part 1: Career Planning and Informational Interviewing. Thurs., 30 March, 9–10 a.m., Potomac F. Your job-hunting process should begin with career planning, not when you apply for jobs. This workshop will help you begin this process and will introduce you to informational interviewing.

Part 2: Geoscience Career Exploration. Thurs., 30 March, 10–11 a.m., Potomac F. 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.

Part 3: Cover Letters, Résumés, and CVs. Thurs., 30 March, 3–4 p.m., Potomac F. How do you prepare a cover letter? Does your résumé need a good edit? Whether you are currently in the job market or not, learn how to prepare the best résumé possible. You will review numerous examples to help you learn important résumé dos and don'ts.

Student Volunteers. Students previously accepted as meeting volunteers must check in at the Omni Richmond Hotel, York River Room. Please contact Lynsey LeMay, lemayl@tncc.edu, for more information.

EXHIBITS

Exhibits are located in the James River Ballroom and open to conference attendees from 8 a.m.–5 p.m., 30–31 March. As of mid-January, the following exhibitors have agreed to be a part of the exhibits:

2018 Southeastern Geological Society of America Section Meeting—Knoxville, Tennessee
ASBOG
Association for Women Geoscientists
Beta Analytic
Bureau of Ocean Energy Management
Geological Society of America Bookstore
Geological Society of America Foundation
Mineralogical Society of America
Virginia Museum of Natural History

EMERGENGIES
For all emergencies dial 911.
CODE OF CONDUCT AT GSA EVENTS

Approved by GSA Council on 25 September 2016

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

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

Expected Behavior

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

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

Procedures to be followed in an emergency situation:

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

Unacceptable Behavior includes but is not limited to:

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

Examples of unacceptable behavior include but are not limited to:

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

Consequences of Unacceptable Behavior

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

Reporting Unacceptable Behavior

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

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

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<th>EVENT</th>
<th>TIME</th>
<th>LOCATION</th>
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<tr>
<td><strong>MONDAY, 27 MARCH</strong></td>
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<tr>
<td>FT1. Geology along the Blue Ridge Parkway in Virginia (Field Trip)</td>
<td>7 a.m.</td>
<td>Richmond Omni, GSA Field Trip Check-In Desk</td>
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<td><strong>TUESDAY, 28 MARCH</strong></td>
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<td>FT2. From Laurentia to Iapetus: Traversing the Blue Ridge–Piedmont Terrane Boundary in Central Virginia (Field Trip)</td>
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<td>Speaker Ready Room</td>
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<td>Canal Room</td>
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<tr>
<td>Registration</td>
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<td>Main Foyer, Convention Floor</td>
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<tr>
<td>FT4. Geology and Geomorphology of Belle Isle, Richmond (Field Trip)</td>
<td>1–5 p.m.</td>
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<tr>
<td>T19. Undergraduate Research I (Posters)</td>
<td>8 a.m.–noon</td>
<td>James River Ballroom</td>
</tr>
<tr>
<td>Geoscience Career Mentoring Luncheon: Roy J. Shlemon Mentor Program in Applied Geoscience</td>
<td>noon–1:30 p.m.</td>
<td>Rappahannock Room</td>
</tr>
<tr>
<td>Library of Virginia Maps Open House</td>
<td>1–4 p.m.</td>
<td>800 E. Broad St., Richmond</td>
</tr>
<tr>
<td><strong>Afternoon Oral Technical Sessions</strong></td>
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<tr>
<td>T5. Beaches, Barriers, and Marshes of the Southeast Coast: Dynamic Systems in a Changing Climate</td>
<td>1–5 p.m.</td>
<td>Potomac G</td>
</tr>
<tr>
<td>T8. Economic Geology and the Atlantic Continental Shelf: Marine Aggregate, Heavy Minerals, Energy Resources, and Carbon Storage</td>
<td>1–5 p.m.</td>
<td>Shenandoah H</td>
</tr>
<tr>
<td>T10. Deciphering Metamorphic Histories in Multiply-Deformed Terranes in the Piedmont and Blue Ridge</td>
<td>1–5 p.m.</td>
<td>Potomac E</td>
</tr>
<tr>
<td>T13. Topics in Paleozoic Paleontology and Stratigraphy</td>
<td>1–5 p.m.</td>
<td>Roanoke Room</td>
</tr>
<tr>
<td><strong>Afternoon Poster Sessions</strong></td>
<td></td>
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<tr>
<td>T6. Karst Geology and Hazards in the Southeastern U.S. (Posters)</td>
<td>1–5 p.m.</td>
<td>James River Ballroom</td>
</tr>
<tr>
<td>T11. Hydrology and Hydrogeology in the Southeast: Processes, Problems, and Geologic Controls (Posters)</td>
<td>1–5 p.m.</td>
<td>James River Ballroom</td>
</tr>
<tr>
<td>T19. Undergraduate Research II (Posters)</td>
<td>1–5 p.m.</td>
<td>James River Ballroom</td>
</tr>
<tr>
<td>Geoscience Career Workshop: Part 3: Cover Letters, Résumés, and CVs (Workshop)</td>
<td>3–4 p.m.</td>
<td>Potomac F</td>
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<tr>
<td><strong>FRIDAY, 31 MARCH</strong></td>
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<tr>
<td>GSA Campus Representative Breakfast</td>
<td>7–7:50 a.m.</td>
<td>Potomac F</td>
</tr>
<tr>
<td>Session Chair Orientation and Breakfast</td>
<td>7–7:50 a.m.</td>
<td>Potomac F</td>
</tr>
<tr>
<td>Registration</td>
<td>7 a.m.–noon</td>
<td>Main Foyer, Convention Floor</td>
</tr>
<tr>
<td>Speaker Ready Room</td>
<td>7 a.m.–2 p.m.</td>
<td>Canal Room</td>
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<tr>
<td><strong>Morning Oral Technical Sessions</strong></td>
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<tr>
<td>T16. Stormwater Control Measures: Runoff Quantity and Pollution Science and Management in the Southeastern U.S.</td>
<td>8–10 a.m.</td>
<td>Potomac E</td>
</tr>
<tr>
<td>T3. Geoscience Careers for New Geoscience Graduates</td>
<td>8 a.m.–noon</td>
<td>Roanoke Room</td>
</tr>
<tr>
<td>T9. Seismic Zones, Paleoseismology, and Neotectonics in the Southeastern United States</td>
<td>8 a.m.–noon</td>
<td>Potomac G</td>
</tr>
<tr>
<td>T17. Geologic Studies of the U.S. Atlantic Coastal Plain Province</td>
<td>8 a.m.–noon</td>
<td>Shenandoah H</td>
</tr>
<tr>
<td>EVENT</td>
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<tr>
<td><strong>Morning Poster Sessions</strong></td>
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<tr>
<td>Geoinformatics and Geoscience Education (Posters)</td>
<td>8 a.m.–noon</td>
<td>James River Ballroom</td>
</tr>
<tr>
<td>Petrology and Planetary Geology (Posters)</td>
<td>8 a.m.–noon</td>
<td>James River Ballroom</td>
</tr>
<tr>
<td>P2. Tectonics of Blue Ridge and Piedmont Terranes: Insight from Integrated Studies (Posters)</td>
<td>8 a.m.–noon</td>
<td>James River Ballroom</td>
</tr>
<tr>
<td>P3. Geologic Maps and Map Derivatives: The Legacy of Mike Higgins (Posters)</td>
<td>8 a.m.–noon</td>
<td>James River Ballroom</td>
</tr>
<tr>
<td>Geoscience Career Mentoring Luncheon: John Mann Mentors in Applied Hydrology Program</td>
<td>noon–1:30 p.m.</td>
<td>Rappahannock Room</td>
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<tr>
<td><strong>Afternoon Oral Technical Sessions</strong></td>
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<tr>
<td>P4. Geology and the Civil War</td>
<td>1–5 p.m.</td>
<td>Potomac G</td>
</tr>
<tr>
<td>T7. Transforming Geoscience Teaching and Learning at 2Y and 4Y Colleges</td>
<td>1–5 p.m.</td>
<td>Roanoke Room</td>
</tr>
<tr>
<td>T11. Hydrology and Hydrogeology in the Southeast: Processes, Problems, and Geologic Controls II</td>
<td>1–5 p.m.</td>
<td>Potomac E</td>
</tr>
<tr>
<td>T15. Plutonism and Volcanism in the Appalachians and Beyond</td>
<td>1–5 p.m.</td>
<td>Shenandoah H</td>
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<tr>
<td><strong>Afternoon Poster Sessions</strong></td>
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<tr>
<td>Archaeological Geology, Paleoclimate, and Geomorphology (Posters)</td>
<td>1–5 p.m.</td>
<td>James River Ballroom</td>
</tr>
<tr>
<td>Paleontology, Paleoecology, and Taphonomy (Posters) Sponsored by the Paleontological Society</td>
<td>1–5 p.m.</td>
<td>James River Ballroom</td>
</tr>
<tr>
<td>T5. Beaches, Barriers, and Marshes of the Southeast Coast: Dynamic Systems in a Changing Climate (Posters)</td>
<td>1–5 p.m.</td>
<td>James River Ballroom</td>
</tr>
<tr>
<td>T17. Geologic Studies of the U.S. Atlantic Coastal Plain Province (Posters)</td>
<td>1–5 p.m.</td>
<td>James River Ballroom</td>
</tr>
<tr>
<td>T20. Clastics, Carbonates, and Soils (Posters)</td>
<td>1–5 p.m.</td>
<td>James River Ballroom</td>
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<tr>
<td><strong>BOEM Cooperative Agreement Data Coordination Meeting</strong></td>
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<td>2–5 p.m.</td>
<td>Potomac F</td>
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**SATURDAY, 1 APRIL**

<table>
<thead>
<tr>
<th>EVENT</th>
<th>TIME</th>
<th>LOCATION</th>
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<tbody>
<tr>
<td>FT8. Geology and Biostratigraphy of the Potomac River Cliffs at Stratford Hall, Westmoreland County, Virginia (Field Trip)</td>
<td>7 a.m.–7 p.m.</td>
<td>Richmond Omni, GSA Field Trip Check-In Desk</td>
</tr>
<tr>
<td>FT9. Geology of the Petersburg Batholith, Eastern Piedmont, Virginia (Field Trip)</td>
<td>7 a.m.–7 p.m.</td>
<td>Richmond Omni, GSA Field Trip Check-In Desk</td>
</tr>
<tr>
<td>FT6. Tertiary Strata and Paleontology of the James River Region, Virginia (Field Trip)</td>
<td>7 a.m.</td>
<td>Richmond Omni, GSA Field Trip Check-In Desk</td>
</tr>
<tr>
<td>FT7. Geologic Evolution, Modern Processes, and Management Strategies of Virginia’s Mainland Beaches and Barrier Islands (Field Trip)</td>
<td>7 a.m.</td>
<td>Richmond Omni, GSA Field Trip Check-In Desk</td>
</tr>
<tr>
<td>FT10. Geology and the Petersburg Campaign in the American Civil War (Field Trip)</td>
<td>7:30 a.m.–7 p.m.</td>
<td>Richmond Omni, GSA Field Trip Check-In Desk</td>
</tr>
<tr>
<td>FT11. Industrial Minerals and Mines in the Arvonia Formation of the Chopawamsic Terrane, Buckingham County, Virginia (Field Trip)</td>
<td>7:30 a.m.–7 p.m.</td>
<td>Richmond Omni, GSA Field Trip Check-In Desk</td>
</tr>
<tr>
<td>FT5. Geologic Controls on Cave Development in the Burnsville Cove Area, Bath and Highland Counties, Virginia (Field Trip)</td>
<td>7:30 a.m.</td>
<td>Richmond Omni, GSA Field Trip Check-In Desk</td>
</tr>
</tbody>
</table>
**MORNING ORAL TECHNICAL SESSIONS**

**SESSION NO. 1**

*S1. From Mountains to Coast: Biogeochemical Processes Affecting the Water Quality of the Bay in Our Backyard*

8:00 AM, Omni Richmond Hotel Potomac G

Karen C. Rice and Janet S. Herman, Presiding

<table>
<thead>
<tr>
<th>Time</th>
<th>Speaker(s)</th>
<th>Title</th>
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<tbody>
<tr>
<td>8:00 AM</td>
<td><strong>INTRODUCTORY REMARKS</strong></td>
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<tr>
<td>8:05 AM</td>
<td>Webber, James Steven*; Hyer, Ken; Denver, Judith M.; Langland, Michael; Bohlke, J.K.</td>
<td>WATER-QUALITY RESULTS FROM THREE CHESAPEAKE BAY SHOWCASE WATERSHEDS: MONITORING AND ANALYSIS DESIGNED TO ASSESS AND INFORM RESTORATION</td>
</tr>
<tr>
<td>8:25 AM</td>
<td>Denver, Judith M.*</td>
<td>IRRIGATION AS A CONSERVATION PRACTICE TO REDUCE NITRATE CONCENTRATIONS IN COASTAL PLAIN GROUNDWATER, EASTERN SHORE CHESAPEAKE BAY WATERSHED</td>
</tr>
<tr>
<td>8:50 AM</td>
<td>Mills, Aaron L.*; Herman, Janet S.</td>
<td>POTENTIAL FOR DENITRIFICATION UNDER CHANGING LAND USE AND CLIMATE</td>
</tr>
<tr>
<td>9:10 AM</td>
<td>Krask, Julie Lauren*; Beck, Aaron J.</td>
<td>INVESTIGATING NOVEL PATHWAYS FOR N REMOVAL IN THE SUBTERRANEAN ESTUARY</td>
</tr>
<tr>
<td>9:30 AM</td>
<td>Noe, Gregory B.*; Claggett, Peter; Hupp, Cliff R.; Schenk, Edward R.</td>
<td>REGIONAL MEASUREMENT AND MODELING OF FLOODPLAIN WETLAND NUTRIENT AND SEDIMENT FLUXES: THE CHESAPEAKE WATERSHED</td>
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<tr>
<td>9:55 AM</td>
<td><strong>DISCUSSION</strong></td>
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<tr>
<td>10:00 AM</td>
<td><strong>BREAK</strong></td>
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<tr>
<td>10:15 AM</td>
<td>Harman, Ciaran J.*; Putnam, Shane; Cosans, Cassandra; Wilusz, Daniel C.</td>
<td>FLUSHING THE SAPROLITE: BASEFLOW AND QUICKFLOW AGE VARIABILITY IN THE STREAMFLOW OF A DEEPLY-WEATHERED PIEDMONT WATERSHED</td>
</tr>
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</table>

**SESSION NO. 2**

*T2. Cenozoic Paleontology of the Mid-Atlantic*

8:00 AM, Omni Richmond Hotel Roanoke Room

Emily S. Stafford, Presiding

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<tr>
<th>Time</th>
<th>Speaker(s)</th>
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<tbody>
<tr>
<td>8:00 AM</td>
<td><strong>INTRODUCTORY REMARKS</strong></td>
<td></td>
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<tr>
<td>8:20 AM</td>
<td>Smith, Kathlyn M.*; Dooley, Alton C.; Hartland, Trevor</td>
<td>LONG IN THE TOOTH: TUSK MORPHOLOGY OF LATE PLEISTOCENE PROBOSCIDEANS FROM THE DIAMOND VALLEY LAKE LOCAL FAUNA, INLAND SOUTHERN CALIFORNIA</td>
</tr>
<tr>
<td>8:40 AM</td>
<td>Lyle, R. Courtland*; Hastings, Alexander K.; Dooley, Alton C.</td>
<td>NEW MYSTICETE WHALE SPECIMEN COULD REPRESENT FIRST OF ITS KIND FROM MIDDLE MIOCENE SITE IN CAROLINE COUNTY, VIRGINIA</td>
</tr>
<tr>
<td>9:00 AM</td>
<td>Hastings, Alexander K.*; Treado, Lucy; Lyle, R. Courtland; Dooley, Alton C.</td>
<td>SHARK DIVERSITY AND WATER DEPTH ESTIMATION AT THE MIDDLE MIOCENE CARMEL CHURCH QUARRY ECOSYSTEM (CAROLINE COUNTY, VIRGINIA)</td>
</tr>
<tr>
<td>9:20 AM</td>
<td>Campbell, Matthew R.*</td>
<td>MOLLUSCAN FAUNA OF THE UPPER PLEISTOCENE WANDO FORMATION, CHARLESTON, SOUTH CAROLINA</td>
</tr>
<tr>
<td>9:40 AM</td>
<td>Stafford, Emily S.*; Montoya, Leslie Marie; Forcino, Frank L.</td>
<td>COMPARISONS OF COMMUNITY AND PREDATION</td>
</tr>
</tbody>
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**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
SESSION NO. 3

T4. Digital Imaging Techniques for Enhancing Student Learning and Research
8:00 AM, Omni Richmond Hotel Shenandoah H
Parvinder Sethi and Chester F. Watts, Presiding

9:00 AM Amick, Nathan*: Miller, Brigette; Watts, Chester F.: UNMANNED AERIAL SYSTEMS 3D MODELING OF SHRINKING SHORELINES AND THE LEAKING LAKEBED, MOUNTAIN LAKE, GILES COUNTRY, VIRGINIA

9:10 AM Bentley, Callan*: Rohrback, Robin: COMMUNICATING ‘EXPLORABLE’ GEOSCIENCE WITH BIG PICTURES OF SMALL THINGS

9:20 AM Voli, Hans R.; Watts, Chester F.: COMBINING SIDE-SCAN SONAR, SUBMERSIBLE ROVS, AND UNMANNED AERIAL VEHICLES FOR UNDERWATER INSPECTIONS AND BATHYMETRIC MAPPING OF AN INACTIVE QUARRY NEAR CLAY TOR LAKE, VIRGINIA

9:30 AM Marshall, Anita M.: THE USE OF VIRTUAL LEARNING ENVIRONMENTS TO ENHANCE OR REPLACE TRADITIONAL FIELD LEARNING EXPERIENCES AS A MEANS OF SUPPORTING DIVERSITY IN THE GEOSCIENCE STUDENT POPULATION

10:00 AM BREAK

10:10 AM Fink, Sam P.; Vulava, Vijay M.; Beckingham, Barbara A.: DEMONSTRATION OF AN AUGMENTED REALITY SANDBOX TO VISUALIZE EARTH SYSTEMS

10:20 AM Martin, Anthony J.*; Page, Michael; Bransford, Stephen; Salinas, Anandi; Tullus, Alien: THE GEORGIA COAST ATLAS: A MULTI-FACETED DIGITAL SCHOLARSHIP PROJECT INTENDED FOR STUDENTS AND THE PUBLIC

10:30 AM Gammarino, Ian*: Watts, Chester F.: TESTING THE EFFECTIVENESS OF EMERGING TECHNOLOGIES FOR DEVELOPING A SEDIMENTATION MODEL AT CLAYTOR LAKE, DUBLIN, VIRGINIA - A PROGRESS REPORT


10:50 AM De Paor, Declan G.*; Team, Geode: A GRAND TOUR OF THE OCEAN BASINS

SESSION NO. 4

Folds, Faults, Fractures, & Terranes
8:00 AM, Omni Richmond Hotel Potomac E
Christopher M. Bailey and Steven J. Whitmeyer, Presiding

8:00 AM INTRODUCTORY REMARKS

9:00 AM Bartholomew, Mervin J.*; Rich, Frederick J.; Evans, Mark A.: DEVELOPMENT OF MESOZOIC AND CENOZOIC FRACTURE-SETS IN EASTERN GEORGIA

9:20 AM Brown, Summer J.*; Thigpen, J. Ryan; Hoar, Rachel M.; TETON FAULT EVOLUTION PART 1: ONSET TIMING AND SLIP HISTORY

9:40 AM Hoar, Rachel M.*; Brown, Summer J.; Thigpen, J. Ryan: TETON FAULT EVOLUTION PART 2: FAULT GROWTH MODELS AND LENGTH-DISPLACEMENT SCALING RELATIONSHIPS

SESSION NO. 5

T19. Undergraduate Research I (Posters)
8:00 AM, Omni Richmond Hotel James River Ballroom
Authors will be present from 9 to 11 AM

5-1 1 Winter, Justin*: Dupree, Roderick; Edwards, Daniel; Hartman, Courtenay; Hillgrove, Jonathan; Streicher, Mitchell; Taturn, Joshua Michael; Turner, Lian; Fagan, Amy: EXAMINING REGIONAL OLIVINE COMPOSITION IN TERRESTRIAL DUNITE SAMPLES TO BETTER UNDERSTAND COMPOSITIONS COLLECTED FROM APOLLO LUNAR DUNITE SAMPLES

5-2 2 Volk, Natalie Ann*: Mueller, Paul A.: FLORIDA WELL REVEALS NEW BASEMENT ORIGINS AND CONNECTIONS TO GONDWANA

5-3 3 Governo, Brandon*: Daniels, Meredith; McNamara, Brittan D.: IDENTIFICATION OF MINERALS IN SULFIDE BODY WITHIN GRANITE HOST AT NORTH BUNCOMBE QUARRY IN WESTERN NORTH CAROLINA

5-4 4 McGroarty, Fiona C.*; Johnson, Elizabeth A.; Phillips, Ron: DEVELOPING A PROTOCOL FOR BSE IMAGE MAPPING ENTIRE THIN SECTIONS USING A PHENOM XL SEM
SESSION NO. 6

Economic & Energy Geology (Posters)
8:00 AM, Omni Richmond Hotel James River Ballroom
Authors will be present from 9 to 11 AM

Booth #

6-1 32 Edendorf, H.M.*; Zou, Youquin; Yang, Changbin: COMPARISON OF METHODS USED FOR CO2 LEAK DETECTION DURING PULSED RELEASE TESTS INTO POTABLE AQUIFER WELLS

6-2 33 Edendorf, H.M.*; Barna, Joshua; Fink, Madison S.; Herman, Ellen K.; Toran, Laura: DIRECT AND CONTINUOUS MEASUREMENT OF DISSOLVED CO2 IN KARST SPRINGS

6-3 34 Haven, Walter T. *; Marciniak, Katherine J.; Taylor, Kenneth B.; Channell, Ryan A.; Shields, Ann T.: A REVIEW OF ENERGY EXPLORATION IN NORTH CAROLINA

6-4 35 Marciniak, Katherine J.*; Haven, Walter T.; Kennedy B.; Channell, Ryan A.; Shields, Ann T.; Atkinson, Brad: GEOLOGY IN PUBLIC POLICY: NORTH CAROLINA'S OIL & GAS HISTORY, RULES, AND FUTURE POSSIBILITIES

6-5 36 Stone, Amanda J.*; Diemer, John A.; Vinson, David S.; Reynolds, Valerie S.: WATER-ROCK INTERACTION IN THE DEEP RIVER BASIN, NC, A CANDIDATE BASIN FOR SHALE GAS DEVELOPMENT

6-6 37 Lohr, Celeste D.*; Hackley, Paul C.; Valentine, Brett J.; Dulong, Frank T.: PRELIMINARY REGIONAL CHARACTERIZATION UPDATE OF THE TUSCALOOSA MARINE SHALE IN SOUTHERN MISSISSIPPI: IMPLICATIONS FOR CO2 SEQUESTRATION

6-7 38 Luciano, Katherine*: Tweet, Andrew; Koch, Erin; Hughes, Matthew; Harris, M. Scott; Howard, C. Scott; Sanger, Denise: INVESTIGATIONS INTO SOUTH CAROLINA'S OUTER CONTINENTAL SHELF (OCS) SAND RESOURCES: DATA INVENTORY, RESOURCE ASSESSMENT, AND RECENT DATA COLLECTION AND ANALYSIS EFFORTS
SESSION NO. 7
Environmental Geology & Geochemistry (Posters)
8:00 AM, Omni Richmond Hotel James River Ballroom
Authors will be present from 9 to 11 AM
Booth #

7-1  42 Fernandez, Ricardo P.*; Shockley, Caleb; Schreiber, Madeline E.: TRACE ELEMENTS IN DAN RIVER SEDIMENT AFTER THE 2014 COAL ASH SPILL

7-2  43 Turner, Ashley E.*; Vulava, Vijay M.: GEOCHEMICAL FATE AND TRANSPORT OF SILDENAFIL IN THE SEDIMENTS OF THE ROANOKE RIVER

7-3  44 Huffman, Ashley M.*; Sikder, Arif M.: ASSESSMENT OF HEAVY METAL POLLUTION IN THE SEDIMENTS OF THE ROANOKE RIVER

7-4  45 Haydin, Derick R.*; Clinton, Sandra; McMillan, Sara K.; Vinson, David S.: VERTICAL HYDRAULIC GRADIENTS AND HYPOHERIC EXCHANGE IN A PRE-RESTORATION URBAN FOREST STREAM: REEDY CREEK, CHARLOTTE, NC

SESSION NO. 8
T5. Beaches, Barriers, and Marshes of the Southeast Coast: Dynamic Systems in a Changing Climate
1:00 PM, Omni Richmond Hotel Potomac G
Christopher J. Hein and Michael S. Fenster, Presiding

8-1 2:00 PM Wingard, G. Lynn*; Bernhardt, Christopher; Jones, Miriam C.; Wachnicka, Anna; Stackhouse, Bethany L.; Landacre, Bryan D.; Marot, Marci E.: THE INFLUENCE OF SEA LEVEL, CLIMATE, GEOLOGY AND HUMANS ON SOUTH FLORIDA ECOSYSTEMS

8-2 2:10 PM Hyman, Alexander Challen*: TESTING THE UTILITY OF MOLLUSK LIFE AND DEATH ASSEMBLAGES FOR DELINEATING SPATIAL DISTRIBUTION OF SEAGRASS HABITATS ALONG FLORIDA’S GULF COAST

8-3 2:40 PM Querry, Brian*; Mallinson, David; Culver, Steven J.; Leorri, Eduardo: GEOLOGY AND ORIGIN OF SAND RIDGES IN A BACK-BARRIER ESTUARY, PAMLICO SOUND, NC

8-4 2:20 PM Ellis, Alisha M.*; Shaw, Jaimie E.; Osterman, Lisa E.; Smith, Christopher G.: A REGIONAL SCALE FORAMINIFERAL DISTRIBUTION STUDY ENCOMPASSING A MAINLAND MARSH, CHINCOTEAGUE BAY, ASSATEAEGUAGE ISLAND, AND THE INNER SHELF, MD AND VA

8-5 3:20 PM Dominguez, Rachele*: Fenster, Michael S.; Stanek, Mathew: QUANTIFYING STORM IMPACTS ON SANDY BEACHES USING A DETERMINISTIC/THEORETICAL STORM FACTOR MODEL WITH AN APPLICATION ALONG THE VIRGINIA COAST

8-6 3:40 PM Ames, Katherine*: Pusty, Norbert P.; Habeck, Andrea: METRICS OF COASTAL RESILIENCE AND RECOVERY AT FORT TILDEN, GATEWAY NATIONAL RECREATION AREA, POST-HURRICANE SANDY

SESSION NO. 9
1:00 PM, Omni Richmond Hotel Shenandoah H
William L. Lassetter Jr and C. Richerd Berquist, Presiding

9-1 1:20 PM Alexander, Clark*: INTEGRATING NEW AND EXISTING SAND RESOURCES DATA FOR GEORGIA COASTAL RECOVERY AND RESILIENCY

9-2 1:40 PM Shah, Anjana K.*; Harris, M. Scott; Vogt, Peter R.: IMAGING OF HEAVY MINERAL SAND CONCENTRATIONS USING MARINE MAGNETICS OVER ATLANTIC COASTAL PLAIN SEDIMENTS

9-3 2:00 PM Berquist, C.R.*; Dreyer, Jennifer C.; Strand, Jessi M.: HEAVY MINERAL ABUNDANCE IN OFFSHORE MUDDY FINE-GRAINED SANDS CONTAINING THE WORM TUBES SPIOCHAETOPTERUS COSTARUM

9-4 2:20 PM Sikder, Arif M.*; Khander, Nazrul I.; Schleifer, Stanley; Liu, Xin-Chen; Londono, Carlos E. Castano; Mahabir, Krishna; Ali, Zarine: GEOCHEMICAL FINGERPRINTING OF BEACH PLACER DEPOSITS, MONTAUK POINT, LONG ISLAND, NEW YORK

9-5 2:40 PM Schmelz, W. John*: Miller, Kenneth G.; Mountain, Gregory S.; Browning, James V.: CRETACEOUS SEDIMENTATION PATTERNS IN THE SOUTHERN BALTIMORE CANYON TROUGH: CORRELATING THE MARYLAND COASTAL PLAIN TO THE CONTINENTAL RISE

9-6 3:00 PM Reid, Jeffrey C.*; Carpenter, Robert H.; Myers, Carl W.: UNDERGROUND STORAGE OF REFRIGERATED NATURAL GAS IN GRANITES IN NORTH CAROLINA AND SOUTHERN VIRGINIA

9-7 3:40 PM Myers, Carl W.*: POTENTIAL FOR SPECIAL-PURPOSE UNDERGROUND FACILITIES IN GRANITES OF THE SOUTHEASTERN U.S.
SESSION NO. 10

**T10. Deciphering Metamorphic Histories in Multiply-Deformed Terranes in the Piedmont and Blue Ridge**

1:00 PM, Omni Richmond Hotel Potomac E

William C. Burton and Willis E. Hames, Presiding

10-1 1:00 PM Smith, Valerie J.*; Tillo, Richard P.; Southworth, Scott; Aleinikoff, John N.: **TECTONIC EVOLUTION OF THE WEDOWEE AND EMUckiV F groups of the Southern Blue Ridge of East Central Alabama**

10-2 1:20 PM VanDervoort, Dona S.*; Ma, Chong; Steltenpohl, Mark G.; Schwartz, Joshua J.: **THE EARLY PALEOZOIC (TACONIC) DAEVILLE ARC COMPLEX, SOUTHERNMOST APPALACHIANS of ALABAMA and GEORGIA: IMPLICATIONS FOR THE CRUSTAL GROWTH OF EASTERN NORTH AMERICA**

10-3 1:40 PM Hames, Willis*: Uddin, Ashraf: **THE SUBMARINE DEVONIAN BASALTS OF THE ANCESTRAL APPALACHIANS**

10-4 2:00 PM Moecher, David P.*; Larkin, Emma A.; Quinn, Ryan Joel; Loughry, Donald F.; Anderson, Eric D.: **GEOCHEMICAL AND GEOCHRONOLOGICAL EVIDENCE FOR THE MESOPROTEROZOIC TO EARLY PALEOZOIC EVOLUTION OF THE EASTERN LAURENTIAN MARGIN, GREAT SMOKY MOUNTAINS/BLUE RIDGE BASEMENT COMPLEX**

10-5 2:20 PM Merschat, Arthur*: McAleer, Ryan J.; Stokes, M. Rebecca; Southworth, Scott; Kunk, Michael J.; Levine, Jamie S.F.: **DIFFERENT THERMAL HISTORIES OF THE WESTERN AND EASTERN BLUE RIDGE AND EMPLACEMENT OF THE BLUE RIDGE THRUST SHEET DOCUMENTED BY AR/AR**

10-6 2:40 PM Broadnell, Kirkland*: Caddick, Mark; Caton, Summer: **CONSTRAINING THE HIGH-TEMPERATURE POLYMETAMORPHIC HISTORY OF THE MARTINSVILLE CONTACT AUREOLE**

3:00 PM BREAK

10-7 3:20 PM McAleer, Ryan J.*; Burton, William C.; Carter, Mark W.; Kunk, Michael J.; Spears, David B.: **TECTONOTHERMAL SIGNATURES OF TACONIAN AND ALLEGHIAN OROGENESIS IN THE CENTRAL VIRGINIA SEISMIC ZONE**

10-8 3:40 PM Johnson, Thomas A.*; Vervoort, Jeff D.; Ramsey, Molly J.; Southworth, Scott; Aleinikoff, J.N.; Tillo, Richard P.: **CONSTRAINTS ON THE TIMING AND DURATION OF THE GRENVILLE OROGENY**

10-9 4:00 PM Southworth, Scott; Aleinikoff, John N.; Tillo, Richard P.; Dickin, Alan P.; Carter, Mark W.: **PROTEROZOIC TECTONIC EVENTS RECORDED IN BLUE RIDGE ROCKS, VIRGINIA-NORTH CAROLINA**

SESSION NO. 11

**T11. Topics in Paleozoic Paleontology and Stratigraphy**

(Paleontological Society; SEPM Society for Sedimentary Geology)

1:00 PM, Omni Richmond Hotel Roanoke Room

Stephen A. Leslie, Bradley Deline and John T. Haynes, Presiding

11-1 1:00 PM Gibson, Brandt M.*; Danroh, Simon A.F.; Rahman, Imran A.: **RECONSTRUCTING PALEOECOLOGY AND FEEDING STRATEGY IN THE YOUNGEST EDIACARAN MACROFOSSILS**

11-2 1:20 PM Leslie, Stephen A.*: **CORRELATION OF THE LOWER PART OF THE ROSROE FORMATION WITH THE TOURMAKEADY FORMATION, WESTERN IRELAND**

11-3 1:40 PM Cole, Selina R.*; Wright, David F.; Ausich, William I.; Koniecki, Joseph M.: **NEW CRINOIDS FROM THE "KIRKFIELD FAUNA" OF THE BOBCAYGNE AND VERULAM FORMATIONS (UPPER ORDOVICIAN), ONTARIO**

11-4 2:00 PM Deline, Bradley*: Sumrall, Colin D.; Colmenar, Jorge: Sheffield, Sarah L.; Zamora, Samuel: **A NEW UPPER ORDOVICIAN (KATIAN) CRINOID FAUNA FROM SARDINIA, ITALY**

SESSION NO. 12

**T6. Karst Geology and Hazards in the Southeastern U.S. (Posters)**

1:00 PM, Omni Richmond Hotel James River Ballroom

Authors will be present from 2 to 4 PM

Booth #

12-1 1 Hohn, Michael E.*; McCreery, Samantha; Moore, Jessica Pierson; Dinterman, Philip A.: **DEVELOPING A KARST MAP FOR WEST VIRGINIA**

12-2 2 Gochnour, Jacob Alexander*: Adams, Nathaniel: **AUTOMATED MAPPING OF KARST HOLEs IN KARST TOPOGRAPHY USING AIRBORNE LIDAR- DERIVED DEM**

12-3 3 Stewart, Ryan D.*; Schreiber, Madeline E.; McAleer, William B.: **SURFACE-SUBSURFACE CONNECTIVITY IN KARST LANDSCAPES: IMPLICATIONS FOR TERRESTRIAL WATER AND CARBON FLUXES**

12-4 4 Tholen, Jake Michael*: Kambesis, Patricia N.; Toomey, Rickard S.; Kehew, Alan E.: **SUB-BASIN DELINEATION NEAR TURNHOLE BEND, MAMMOTH CAVE NATIONAL PARK**

12-5 5 Madera, Andreana D.*; Hughes, K. Stephen: **QUANTIFICATION OF MOGOTE ASYMMETRY: ARECIBO, PUERTO RICO**

12-6 6 Helm, Tara D.; Ficco, Katarina Kosic; Schreiber, Madeline; Thaler, Evan: **EFFECT OF SWINE MANURE ON LIMESTONE DISSOLUTION**

SESSION NO. 13


1:00 PM, Omni Richmond Hotel James River Ballroom

Authors will be present from 2 to 4 PM
SESSION NO. 14

TI9. Undergraduate Research II (Posters)
1:00 PM, Omni Richmond Hotel James River Ballroom
Authors will be present from 2 to 4 PM

Booth #

14-1 15 Dietel, Matthew C.*; Chowns, Timothy M.: THE ROLE OF ROCK SLIDES IN THE DEVELOPMENT OF ‘ROCK TOWNS’ ON OUTCROPS OF PENNSYLVANIAN SANDSTONE


14-3 17 Earle, Stephanie*; Bartl, Eric; Hudspeth, Reece; Mead, Cody; Ross, Andrew; Winter, Justin; Kinner, David; Lord, Mark; Gannon, J.P.: EROSION AND DEPOSITION IN A DISTURBED WATERSHED: GULLIES, FANS AND TUNNEL FEATURES

14-4 18 Colley, Brooke Elizabeth*; Brooke, James Michael; Black, Alexander; Hilte, Aubrey; Berry, Kimberly; VanGundy, Robert D.: UTILIZING NASA EARTH OBSERVATIONS TO DETECT CHANGES IN ANNUAL SNOWPACK COVERAGE IN INTERMOUNTAIN NATIONAL PARKS

14-5 19 Morris, Catherine S.*; Reilly, Caitlin E.; Johnson, Bradley G.; Paradise, Chris: THE EFFECT OF FLASHINESS ON MACROINVERTEBRATE POPULATIONS IN 1ST ORDER STREAMS NEAR DAVIDSON, NC

14-6 20 Webster, Claire*; Milewski, Adam M.; Rasmussen, Todd C.; Dowd, John; Rotz, Rachel R.; Ertel, Janet; Faustini, John M.; Graves, Grant: IMMEDIATE AND LONG TERM THREATS TO WATER RESOURCE AVAILABILITY AT FELSENTHAL NATIONAL WILDLIFE REFUGE

14-7 21 Counts, Austin*; Phillips, Andrew; Young, Sydney; Stevens, Christine; VanGundy, Robert D.: RIPARIAN LAND COVER CHANGE IN THE LOWER GRAND CANYON, 1998 TO 2016

14-8 22 Stanbury, Matthew*; Diemer, John A.; Rachide, Stephen P.; Moser, Faye L.: ANATOMY OF A MILLPOND DEPOSIT, MILL CREEK, CABARRUS COUNTY, NC


14-10 24 Panth, Himann*; Watts, Chester F.: COMPARING BATHYMETRIC MAPS FROM 2011 AND 2016 USING SIDE-SCAN SONAR AND UNMANNED AERIAL SYSTEMS AT MOUNTAIN LAKE, GILES COUNTY, VIRGINIA


14-12 26 Bua-Iam, Sequoya A.*; Michelson, Andrew; Leonard-Pingel, Jill S.: DATING LACUSTRINE MOLLUSCAN SUBFOSSIL ASSEMBLAGES USING AAR TECHNIQUES TO ASSIST IN RECONSTRUCTING THE PALEOCOMMUNITIES OF TEMPERATE WISCONSIN LAKES

14-13 27 Dannehl, John*; Leonard-Pingel, Jill; Michelson, Andrew; Falls, Emily: ISOTOPIC ANALYSIS OF SEDIMENTS AS A PROXY FOR ENVIRONMENTAL QUALITY IN TEMPERATE LAKES OF WISCONSIN

14-14 28 Maher, Sage*; Milewski, Adam M.; Miller, William; Rotz, Rachel R.: URBANIZATION-DRIVEN HYDRAULIC EROSION IN THE GEORGIA PIEDMONT


14-16 30 Fein, Rachel L.*; Barnum, Drew G.; Vulava, Vijay M.: GEOCHEMICAL FATE AND TRANSPORT OF PHARMACEUTICAL CHEMICALS IN NATURAL SOILS

14-17 31 Soto Perez, Jeniffer*: Vulava, Vijay: GEOCHEMICAL FATE AND TRANSPORT OF DIPHENHYDRAMINE IN NATURAL SOILS

14-18 32 Richter, Lea*: Vulava, Vijay M.: SORPTION AND TRANSPORT OF Vardenafil IN NATURAL SOILS

14-19 33 Lawson, Sydney A.*; Luffman, Ingrid; Nandi, Arpita: A COMPARATIVE STUDY TO CALCULATE HYDRAULIC conductivity IN ULTISOLS ON AN EAST TENNESSEE HILLSLOPE

14-20 34 Plechaek, Amy K.*; Schreiber, Madeline E.; Chermak, John A.: TRACE ELEMENT ANALYSIS OF PYRITES IN GAS SHALES BY LASER ABLATION ICP-MS: IMPLICATIONS FOR MOBILITY

14-21 35 Harrison, Ashley N.*; Donahoe, Rona J.; Hawkins, Patrick D.: CONTROLS FOR SEDIMENT COMPOSITION VARIATION IN A STREAM IMPACTED BY ACID MINE DRAINAGE

14-22 36 White, Eric*: Wolfe, Amy; Beyer, Emily; Rhodes, Tyler; Showers, Amber J.; VanGundy, Robert D.: APPALACHIAN TRAIL HEALTH AND AIR QUALITY

14-23 37 Gardner, C. Layton*: Drehmer, Leon; Peters, Jacob; Hinkle, Michael P.; Browning, Wayne; VanGundy, Robert D.: MICROCLIMATE GRADIENTS AND THEIR RELATIONSHIPS TO TERRESTRIAL AND SUBTERRANEAN BIODIVERSITY ALONG THE HIGH KNOB LANDFORM, VIRGINIA

14-24 38 Blackwell, Emma*: Stewart, Kevin; Montanari, Sandro; Mainiero, Maurizio: STRUCTURAL AND KINEMATIC ANALYSIS OF THE CONERO RIVIERA FROM ANCONA TO PORTONOVO, ITALY

14-25 39 Patterson, Sean D.*; Bush, David M.; Peak, Katie McDowell; Jackson, Chester W.; Young, Robert S.; Weaver, Nicolette: RETURN TO THE HURRICANE IMPACT SCALE: TESTING ITS LARGE-SCALE APPLICATION

14-26 40 McCone, Erin*: Monaghan, Kelly; McGarvey, Aaron; Childers, Daniel P.: STREAM PROJECT BY PHYSICAL GEOLOGY HONOR STUDENTS AT DELAWARE COUNTY COMMUNITY COLLEGE

14-27 41 Grabiniski, Aaron M.*; McGary, R. Shane: INTRODUCING MATLAB AND THE NEXT GENERATION SCIENCE STANDARDS TO A HIGH SCHOOL EARTH SCIENCE CURRICULUM

Booth #

13-1 7 Cameron, Cortney*; Brandmayr, Enrico; Vlahovic, Gordana: UPDATES ON SEISMICITY-HYDROLOGY RELATIONSHIPS IN THE EASTERN TENNESSEE SEISMIC ZONE

13-2 8 Keily, Elizabeth*; Boehling, Daniel; Sikder, Arif M.; McCallister, S. Leigh; Turner, Joseph B. McGee: AN ANALYSIS OF DISSOLVED ORGANIC CARBON IN THE GROUNDWATER OF VIRGINIA COASTAL PLAIN AQUIFERS

13-3 9 Adu Agyemang, Adela B.*; Nandi, Arpita; Luffman, Ingrid; Joyner, Andrew T.: GROUNDWATER NITRATE CONCENTRATION AND ITS RELATION TO LAND COVER AND WATER DEPTH IN BUNCOMBE COUNTY

13-4 10 Vasok, Bryco*: Gannon, J.P.; Kinner, David A.; Lord, Mark: EXAMINING WATER FLOW PATHS AND STREAM RESPONSE OF A DISTURBED HEADWATER CATCHMENT IN THE SOUTHERN APPALACHIAN MOUNTAINS, NC

13-5 11 Hurst, Elizo*; Mann, Aras; Marlor, Don; Ramsey, Sierra; Ross, Andrew; Vasok, Bryco; Lord, Mark; Kinner, David; Gannon, J.P.: CHARACTERISTICS OF GROUNDWATER – STREAM WATER INTERACTION IN A DISTURBED HEADWATER CATCHMENT WITHIN THE SOUTHERN APPALACHIAN MOUNTAINS

13-6 12 Steffy, David A.*; Nichols, Alfred C.; Hobbs, Kristi: ENHANCED GRAVITATIONAL DRAINAGE OF CRUDE OIL THROUGH ALABAMA BEACH SAND CAUSED BY THE DISPERSANT COREXIT 9500A

13-7 13 Tatum, Joshua Michael*: Gannon, J.P.: USING SURFACE AND GROUND WATER CHEMISTRY TO INVESTIGATE SPATIAL VARIATIONS IN STREAMWATER CHEMISTRY AND THEIR POSSIBLE CONNECTION TO PREVIOUS LAND USE IN A HEADWATER STREAM

13-8 14 Miles, Tyler E.*; Peterson, Holly E.; Stracey, Christine; Donati, George L.; Williams, Charles B.: WATER AND SEDIMENT QUALITY ASSESSMENT OF A POTENTIALLY IMPAIRED NORTH CAROLINA STREAM
**SESSION NO. 14**


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**FRIDAY, 31 MARCH 2017**

**MORNING ORAL TECHNICAL SESSIONS**

**SESSION NO. 15**

**T3. Geoscience Careers for New Geoscience Graduates**

8:00 AM, Omni Richmond Hotel Roanoke Room

Ronald J. Wallace and Michael D. Lawless, Presiding

8:00 AM **INTRODUCTORY REMARKS**

15-1 8:05 AM Lawless, Michael D.*; Houlton, Heather R.: **PREPARING OUR WORKFORCE (POW): THINKING DIFFERENTLY ABOUT GEOSCIENCE CAREERS**

15-2 8:25 AM Kath, Randy*; Henthorne, Robert: **GEOLOGIC LICENSURE: HOW THIS WILL IMPACT YOUR CAREER IN GEOSCIENCES**

15-3 8:45 AM Anderson, J. Meade R.*: **GEOSCIENCE CAREERS FOR NEW GEOSCIENCE GRADUATES**

9:05 AM **DISCUSSION**

15-4 9:20 AM Wallace, Ronald J.*: **GEOLOGY EMPLOYMENT OPPORTUNITIES WITH STATE AGENCIES**

15-5 9:40 AM Pennington, Dennis*: **THE ROLE OF GEOLOGY IN TODAY'S SOCIETY**

10:00 AM **BREAK**

15-6 10:20 AM Mason-Deese, Will*: **TRANSITIONING FROM STUDENT LIFE TO THE WORKING WORLD**

15-7 10:40 AM Stewart, John*: **VAPOR INTRUSION 101**

11:00 AM **CONCLUDING REMARKS**

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**SESSION NO. 16**

**T9. Seismic Zones, Paleoseismology, and Neotectonics in the Southeastern United States**

8:00 AM, Omni Richmond Hotel Potomac G

J. Wright Horton Jr. and Ronald Counts, Presiding

8:00 AM **INTRODUCTORY REMARKS**

16-1 8:20 AM Cox, Randel Tom*: Hatcher, Robert D.; Counts, Ronald; Gamble, Eric; Glasbrenner, Jacob C.; Warrell, Kathleen F.: **A SEISMICITY/QUATERNARY FAULTING CORRIDOR IN THE EASTERN TENNESSEE SEISMIC ZONE: AN UPDATE**

16-2 8:40 AM Glasbrenner, Jacob C.*; Hatcher, Robert D.; Li, Yingkui; Cox, Randel T.: **COSMOGENIC 26AL-10BE BURIAL DATING OF TENNESSEE AND LITTLE TENNESSEE RIVER TERRACE DEPOSITS IN THE EASTERN TENNESSEE SEISMIC ZONE**

16-3 9:00 AM Carter, Mark W.*; McLaurin, Brett T.; Glasbrenner, Jacob C.: **PALEOQLUÆFACTION RECONNAISSANCE IN EASTERN NORTH CAROLINA: IS THERE EVIDENCE FOR LARGE MAGNITUDE EARTHQUAKES BETWEEN THE CENTRAL VIRGINIA SEISMIC ZONE AND CHARLESTON SEISMIC ZONE?**

16-4 9:20 AM Horton, J. Wright*; Carter, Mark W.; Chapman, Martin C.; Wu, Olmin; Witt, Anne C.; Shah, Anjana K.: **THE 2011 MINERAL, VIRGINIA, EARTHQUAKE TRIGGERED SHALLOW AFTEershocks ON FAVORABLY ORIENTED STRUCTURES IN AREAS OF POSITIVE STATIC COULOMB STRESS CHANGE**

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**SESSION NO. 17**

**T16. Stormwater Control Measures: Runoff Quantity and Pollution Science and Management in the Southeastern U.S.**

8:00 AM, Omni Richmond Hotel Potomac E

Vijay M. Vulava, Barbara A. Beckingham and Timothy J. Callahan, Presiding

18-1 8:00 AM Vulava, Vijay*: Beckingham, Barbara; Callahan, Timothy: **REVIEW OF THE SOURCES, FATE AND TRANSPORT OF CONTAMINANTS IN ENGINEERED STORMWATER STRUCTURES**

18-2 8:20 AM Kirker, Ashleigh N.*; Woodruff, Chelsea Kingland; Vulava, Vijay M.: **SURFACE WATER CONTAMINATION FROM URBAN STORMWATER RUNOFF IN CHARLESTON, SC**

18-3 8:40 AM Cockerill, Kristan*: Anderson, William; Grothous, Peter; Gu, Chuanhui; Mohr, Tanga; Whitehead, John: **DOES SCIENCE-BASED INFORMATION INFLUENCE PUBLIC ATTITUDES ABOUT STORMWATER RUNOFF?**

18-4 9:00 AM Deemy, James B.*; Heinstall-Cymerman, Jeffrey; Kirkman, L. Katherine; Rasmussen, Todd C.: **WATER QUALITY OF THIRTY-ONE ISOLATED WETLANDS EMBEDDED IN A LONGLEAF PINE / WIRE GRASS ECOSYSTEM REGARDING CONNECTIVITY TO EPISODIC FLOWS GENERATED FROM AGRICULTURAL RUNOFF**

18-5 9:20 AM Hawkins, Patrick D.*; Donahoo, Rona J.: **TEMPORAL AND SPATIAL VARIATIONS IN STREAM WATER CHEMISTRY IN A WATERSHED IMPACTED BY ACID MINE DRAINAGE**

18-6 9:40 AM Levine, Norman*: Rubin, Nicholas; Callahan, Timothy J.: **HIGH RESOLUTION FLOOD MODELING FOR PLANNING, MITIGATION, AND RESPONSE, CHARLESTON SC**

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**SESSION NO. 18**

**T17. Geologic Studies of the U.S. Atlantic Coastal Plain Province**

8:00 AM, Omni Richmond Hotel Shenandoah H

Christopher S. Swezy and C. Richard Bergquist, Presiding

8:00 AM **INTRODUCTORY REMARKS**

19-1 8:20 AM Stadelman, Steve A.*; Horton, J. Wright: **THE MECHANISM OF FORMATION OF ALTERATION RINGS ON CLASTS IN THE CRETACEOUS POTOMAC FORMATION, PRINCE GEORGE, VIRGINIA**

19-2 8:40 AM Lawless, Michael D.*; Callahan, Timothy; Houlton, Heather R.; Kirkman, L. Katherine; Rasmussen, Todd C.: **GEOCHEMICAL ANALYSES OF ESTUARINE SEDIMENTS OF CONTAMINANTS IN ENGINEERED STORMWATER STRUCTURES**

19-3 9:00 AM Diemer, John A.*; Rich, Frederick J.; Yankech, Matthew; Mclean, Rufus C.; Bobyarchick, Andy R.; Eppes, Martha C.: **POLEN EVIDENCE FOR THE AGE OF THE LILESVILLE GRAVELS: A NEOGENE STRATH TERRACE DEPOSIT FROM THE FALL ZONE OF NORTH CAROLINA, USA**

19-4 9:20 AM O’Donnell, Robert J.*; Hawkes, Andrea D.; Engelhart, Simon E.; Horton, Benjamin P.; Lane, Chad S.: **GEOCHEMICAL ANALYSES OF ESTUARINE SEDIMENTS ALONG THE CASCADIAN SUBDUCTION ZONE AND THEIR UTILITY IN ESTIMATING COSEISMIC SUBSIDENCE**
SESSION NO. 19

T11. Hydrology and Hydrogeology in the Southeast: Processes, Problems, and Geologic Controls I

10:20 AM, Omni Richmond Hotel Potomac E

J.P. Gannon, David L. Nelms, David Kinner, Mark Lord, Jerry Miller and E. Randolph McFarland, Presiding

17-1 10:20 AM Vance, R. Kelly*; Reichard, James S.; Kelly, Jacque L.; Meyer, Brian K.; Rich, Fredrick J.; Diederich, Gerald; Delua, Anne: RESOLVING THE AGE CONTROVERSY OF PLEISTOCENE COASTAL DEPOSITS IN THE LOWER COASTAL PLAIN IN NORTHEASTERN SOUTH CAROLINA

17-2 10:40 AM Randich, Mikala R.*; Czwartacki, Brooke J.; Callahan, Timothy J.; Vulava, Vijay: USING MULTIPLE METHODS TO EVALUATE LANDWARD MIGRATION OF SEAWATER INTRUSION IN THE FLORIDIAN AQUIFER

17-3 11:00 AM Manda, Alex K.*; Owers, James E.; Allen, Thomas: SIMULATING MARINE AND GROUNDWATER INUNDATION ON A BARRIER ISLAND SETTING UNDER CHANGING SEA-LEVEL RISE SCENARIOS

17-4 11:20 AM Schreiber, Madelaine E.*; VanDerwerker, Tiffany; Zhang, Lin: EVALUATING SOURCES OF ARSENIC IN GROUNDWATER IN VIRGINIA USING A LOGISTIC REGRESSION MODEL

17-5 11:40 AM Whittecar, G. Richard*; Daniels, W. Lee; Thompson, Tess Wynn; Agioutantis, Zacharias; Stone, Stephen F.: DESIGN CREATED WETLANDS WITH WETBUD – A WATER BUDGET MODELING TOOL

MORNING POSTER TECHNICAL SESSIONS

SESSION NO. 20

S2. Tectonics of Blue Ridge and Piedmont Terranes: Insight from Integrated Studies (Posters)

8:00 AM, Omni Richmond Hotel James River Ballroom

Authors will be present from 9 to 11 AM

Booth #

20-1 1 Barineau, Clinton I.*; Tull, James F.; Allison, David T.; Holm-Denoma, Christopher S.: GEOLOGIC MAP OF THE SOUTHERNMOST APPALACHIANS OF ALABAMA AND GEORGIA: A SYNTHESIS OF RECENT ADVANCES IN MAPPING, GEOCHEMISTRY, GEOCHRONOLOGY, AND TECTONIC INTERPRETATION
SESSION NO. 21

S3. Geologic Maps and Map Derivatives: The Legacy of Mike Higgins (Posters)

8:00 AM, Omni Richmond Hotel James River Ballroom

Authors will be present from 9 to 11 AM

Booth #

21-1 18 Andrews, William*; Hounshell, Terry: COMPILATION OF SURFICIAL GEOLoGIC MAPPING IN THE LOUISVILLE METROPOLITAN AREA

21-2 19 Thomas, William A.*; Irvin, G. Daniel; Drahovzal, James A.: THE ANNISTON TRANSVERSE ZONE IN THE WELLINGTON 7.5-MINUTE QUADRANGLE, APPALACHIAN THRUST BELT, ALABAMA

21-3 20 Hatcher, Robert D.*; Wunderlich, Andrew L.; Strissel, Morgan Marie: STRUCTURE AND DETAILED GEOLoGIC MAP OF THE NORTHERN PORTION OF THE DUMPLIN VALLEY FAULT ZONE

21-4 21 Sommer, Patrick*; Ray, Daniel; Bailey, Christopher M.: STRUCTURAL ANALYSIS OF THE BOLAR ANTICLINE AT SOUNDING KNOB, VALLEY & RIDGE PROVINCE, HIGHLAND COUNTY, VIRGINIA

21-5 22 Dubaz, Adam*; Allison, David T.: 1:24K MAPPING AND U/LTH GEOCHEMICAL SURVEY OF A SEGMENT OF THE EASTERN BLUE RIDGE BELT IN ALABAMA

21-6 23 Bozdog, G. Nicholas*; Cattanach, Bart L.: A NEW MULTILAYERED GEOLoGIC BEDROCK ARCGIS ONLINE WEB MAP OF WESTERN NORTH CAROLINA

21-7 24 Thompson, Hayley N.*; Merschat, Arthur J.; Walsh, Gregory J.; Southworth, Scott: DIGITIZATION OF GEOLoGIC MAPS: PRESERVATION AND INTERPRETATION OF DR. DOUGLAS RANKIN'S LEGACY MAPS OF THE MOUNT ROGERS AREA, VA–NC–TN

21-8 25 Seymour, Bryoe*; Ranson, William A.; Garihan, John M.: DEFORMATION AND METAMORPHISM IN THE FINGERVILLE EAST 7.5-MINUTE QUADRANGLE, SPARTANBURG COUNTY, SOUTH CAROLINA

21-9 26 Donohue, Mary K.*; Sauter, Zachary J.; Bailey, Christopher M.: THE GEOLoGy OF THE JAMES RIVER STATE PARK, EASTERN BLUE RIDGE/WESTERN PIEDEMONT, CENTRAL VIRGINIA

21-10 27 Carter, Mark W.*; Burton, William C.; McAleer, Ryan J.; Regan, Sean P.; Spears, David B.: PROGRESS OF USGS BEDROCK GEOlOMIC MAPPING IN THE CENTRAL VIRGINIA SEISMIC ZONE

21-11 28 Martin, Steven L.*; Curl, Douglas C.: DISSEMINATION OF DETAILED GEOlOMIC MAPPING TO THE PUBLIC: A CASE STUDY OF FLOYDS FORK IN THE FISHERVILLE 7.5-MINUTE QUADRANGLE

21-12 29 Lawrence, Craig*; Bradley, Philip J.: GEOlOMIC MAPPING IN THE GREENSBORO, NC AREA: CITIZEN SCIENCE CONTRIBUTIONS TO UNDERSTANDING THE GEOlGY OF THE AREA

21-13 30 Rojas, Alexis*: MAPPING THE UNKNOWN NEIGHBORHOOD: A SIMPLE APPROACH COMBINING TRADITIONAL GEOlOMIC MAPS AND REMOTE SENSING DATA

21-14 31 Bradley, Philip J.*; Marciniak, Katherine J.; Caldwell, Craig: GROUNDWATER ARSENIC SUSCEPTIBILITY MAP OF ORANGE COUNTY: COUPLING DETAILED GEOlOMIC DATA AND GROUNDWATER QUALITY DATA TO MODEL ARSENIC SUSCEPTIBILITY

21-15 32 Tefend, Karen S.*; Kath, Randy L.: MINERAlOGy AND GEOCHEMISTRY OF SHALE, SLATE AND PHYLLITE FROM THE OAK LEVEL, BORDEN SPRINGS, AND INDIAN MOUNTAIN 7.5 MINUTE QUADRANGLES: A COMPARISON WITH THE ROCKMART SLATE AND ATHENS SHALE IN GEORGIA

SESSION NO. 22

Geoinformatics and Geoscience Education (Posters)

8:00 AM, Omni Richmond Hotel James River Ballroom

Authors will be present from 9 to 11 AM

Booth #

22-1 33 Mies, Jonathan W.*; HURRICANE MATTHEW'S MICROSEISMIC IMPRESSION ON CHATTANOOGA

22-2 34 Ebersole, Sandy*; Keiser, Ken: INTEGRATED GEOSPATIAL DISTRIBUTION SYSTEMS FOR DISASTER EVENT DATA

22-3 35 Bechtel, Randy*; Fuerst, Sam L.: FOSTERING FORMAL AND INFORMAL GEOscIENCE EDUcation IN NORTH CAROLINA

22-4 36 Gardner, Eleanor E.*; Lockner, Cindy; Cronin, Bonnie; Brown, Russell D.: IMPROVING ENGAGEMENT OF MINORITY K-12 STUDENTS IN PALEONTOLOGICAL OUTREACH AND EDUCATION INITIATIVES: A CASE STUDY FROM FLORIDA

22-5 37 Bess, Maddie*; Jovanelly, Tamie J.: DISCUSSING THE CAUSE AND EFFECT RELATIONSHIP OF NATURAL GAS FRACTURING WITH NORTHWESTERN GEORGIA COMMUNITIES

22-6 38 Alamooti, Moones*: Aydin, Adnan: A NEW OPTIMIZATION ALGORITHM IMPROVING REGULARIZED MIGRATION PROCESS IN SEISMIC IMAGING

SESSION NO. 23

Petroleum and Planetary Geology (Posters)

8:00 AM, Omni Richmond Hotel James River Ballroom

Authors will be present from 9 to 11 AM

Booth #

23-1 39 Smith, Robert C.*; Spears, David B.; Skema, Viktors W.*: GEOCHEMICAL DATABASE WITH GENERALIZED INTERPRETATION FOR IGNEOUS ROCKS FROM THE CENTRAL APPALACHIANS OF VIRGINIA, MARYLAND, AND PENNSYLVANIA

23-2 40 Hughes, K. Stephen*; Smith, Robert C.; Miller, Brent V.; Skema, Viktors W.: THE ORDOVICIAN GREEN SPRINGS PLUTON OF CENTRAL VA: POSSIBLE SOURCE OF GLACIOGENIC COBBLES IN THE DEVONIAN ROCKWELL FORMATION OF PA, MD, AND WV?

23-3 41 Griffin, Kayla M.*; Hames, Willis: THE PRE-MIOCENE REGIONAL EXHUMATION HISTORY OF DEEP CRUST EXPOSED IN THE RUBY MOUNTAINS METAMORPHIC CORE COMPLEX, NEVADA

23-4 42 Cato, Michael J.*; Fagan, Amy L.: AN OVERVIEW OF THE TYPE II CHORDRULES IN THE CM CHORDRILTE JBILET WINSELWAN

SESSION NO. 24

S4. Geology and the Civil War

1:00 PM, Omni Richmond Hotel Potomac G

Robert C. Whisonant and Stephen W. Henderson, Presiding

1:00 PM INTRODUCTORY REMARKS

24-1 1:20 PM Galgano, Francis*: GEOGRAPHY, GEOLOGY, AND THE AMERICAN CIVIL WAR

24-2 1:40 PM Whisonant, Robert C.*: BAY, RIVER, AND VALLEY: HOW VIRGINIA’S GEOLOGY AND PHYSIOGRAPHY IMPACTED CAMPAIGNS AND BATTLES IN THE CIVIL WAR

24-3 2:00 PM Henderson, Stephen W.*: AN ANTICLINAL TRAP FOR THE UNION ARMY: HOW GEOLOGY INFLUENCED THE APPROACH TO THE CIVIL WAR BATTLE OF CHICKAMAUGA
SESSION NO. 25

**T7. Transforming Geoscience Teaching and Learning at 2Y and 4Y Colleges**

1:00 PM, Omni Richmond Hotel Roanoke Room

Callan Bentley, Jason P. Jones, Rachel M. Atkins, Peter J. Berquist, LeeAnna Young Chapman, C. Doug Czajka and Jennifer L. Dixon, Presiding

**25-1** 1:00 PM Winters, Steven*: CLF-I AT 2Y: LEARNING GEOSCIENCE THOUGH CLIMATE-CHANGE FICTION

**25-2** 1:20 PM Heller, Matthew J.*: USING GROUP PRESENTATIONS IN A LARGE INTRODUCTORY GEOLGY COURSE TO ENCOURAGE PEER-TO-PEER LEARNING

**25-3** 1:40 PM Heckert, Andrew B.*: SYNTHESIZING INFORMATION THROUGH A DINOSAUR TOY: AN INTEGRATIVE ASSIGNMENT IN A LARGE NON-MAJORS' COURSE

**25-4** 2:00 PM Khandaker, Nazrul I.*; Skidler, Anf M.; Schleifer, Stanley; Londono, Carlos E. Castano; Turner, Joseph B. McGee; Sohel, Mohammad A.: INTRODUCING MICRO-ANALYTICAL TOOLS TO THE UNDERGRADUATES AS PART OF THE GEOSCIENCE CURRICULUM ENHANCEMENT ACTIVITY

**25-5** 2:20 PM McNamee, Britanni D.*: MULTIDISCIPLINARY MICROSCOPY COURSE FOR UNDERGRADUATE RESEARCH STUDENTS IN THE NATURAL SCIENCES

**25-6** 2:40 PM Childers, Daniel P.*; Etherington, Christopher N.: INCORPORATING FIELD AND LABORATORY RESEARCH PROJECTS IN EARLY UNDERGRADUATE GEOSCIENCES AT DELAWARE COUNTY COMMUNITY COLLEGE

**25-7** 3:00 PM BREAK


**25-9** 3:40 PM Manda, Alex K.*: QUANTITATIVELY ASSESSING THE INFLUENCE OF THE ‘THINK-PAIR-SHARE’ ACTIVE LEARNING PEDAGOGICAL APPROACH ON CONTENT KNOWLEDGE AND SELF-CONFIDENCE OF STUDENTS IN AN INTRODUCTORY LEVEL GEOLOGY COURSE

**SESSION NO. 27**

**T15. Plutonism and Volcanism in the Appalachians and Beyond**

1:00 PM, Omni Richmond Hotel Shenandoah H

Brent E. Owens and Elizabeth A. Johnson, Presiding

**27-1** 1:00 PM Tull, James F.*; Barineau, Clinton I.; Holm-Denoma, Christopher S.: BUILDING A UNIFIED TECTONIC MODEL FOR THE TACONIC OROGENY IN THE SOUTHERNMOST APPALACHIANS

**27-2** 1:20 PM Sagul, D. Austin*; Mueller, Paul A.; Barineau, Clinton I.; Holm-Denoma, Christopher S.; Tull, James F.; Carpenter, Nicholas D.: PETROGENETIC SETTING OF ORDOVICIAN PLUTONISM, EASTERN BLUE RIDGE, ALABAMA

**SESSION NO. 26**

**T11. Hydrology and Hydrogeology in the Southeast: Processes, Problems, and Geologic Controls II**

1:00 PM, Omni Richmond Hotel Potomac E

J.P. Gannon, David L. Nelms, David Kriner, Mark Lord, Jerry Miller and E. Randolph McFarland, Presiding

**26-1** 1:00 PM Gannon, J.P.*; Kimmer, David; Lord, Mark; Spyers, Diane: GENERATION AND IMPLICATIONS OF WINTER DIEL DISCHARGE FLUCTUATIONS IN A HEADWATER CATCHMENT IN WESTERN NC, USA

**26-2** 1:20 PM Brown, Terri*: ABIOTIC, BIOTIC, AND DIEL INFLUENCES ON SHALLOW GROUNDWATER QUALITY CAN INFORM SAMPLING STRATEGIES

**26-3** 1:40 PM Kuharsky, Jill M.*; Ikenberry, Coleman; Peterson, Holly E.; Williams, Charles B.; Donati, George L.; Stracey, Christine: BIOACCUMULATION OF VARIOUS ELEMENTS IN AQUATIC AND TERRESTRIAL MACROINVERTEBRATES NEAR AN ACTIVE NORTH CAROLINA COAL-ASH POND

**26-4** 2:00 PM Knapp, Abigail S.*; Milewski, Adam M.; Rotz, Rachel R.: TEMPORAL RELATIONSHIP BETWEEN DROUGHT-PRECIPITATION PATTERNS AND THE ONSET, DURATION, AND SEVERITY OF FRESHWATER HARMFUL ALGAL BLOOMS IN LAKE ALLATOONA, GA

**26-5** 2:20 PM Lord, Mark*; Knimer, David A.; Gannon, J.P.; Campbell, Ted R.; Miller, Jerry: IT’S COMPLEX: GROUNDWATER – SURFACE WATER INTERACTION IN HEADWATER STREAMS IN THE SOUTHERN APPALACHIANS

**26-6** 2:40 PM Stewart, Ryan D.*; Chen, Jingjing: HYDROLOGICAL IMPACTS OF WILDFIRE IN THE SOUTHERN APPALACHIANS MOUNTAINS

**26-7** 3:00 PM Snice, Luke T.: HIDING IN PLAIN SIGHT: GEOLOGIC CONTEXT OF THE CAMP NELSON CIVIL WAR DEPOT IN CENTRAL KENTUCKY

**26-8** 3:20 PM Harris, Claire Lee Otelia*; Gu, Chuanhui: HYDROGRAPH SEPARATION TO DETERMINE STORM RUNOFF GENERATION IN AN URBAN WATERSHED IN THE SOUTHERN APPALACHIANS MOUNTAINS

**26-9** 3:40 PM Wilcox, Jeffrey D.*; Warwick, Adam: HYDROLOGIC RESPONSE TO FIRE AND DROUGHT IN A SOUTHERN APPALACHIANS WETLAND

**26-10** 4:00 PM Erwin, Elizabeth G.*; Gannon, J.P.; Zimmer, Margaret: VARIATIONS IN ACTIVE STREAM LENGTH WITH DISCHARGE IN TWO HEADWATER STREAMS: IMPLICATIONS FOR SPATIAL AND TEMPORAL VARIABILITY IN RUNOFF GENERATION

**26-11** 4:20 PM Fedders, Emily R.*; Anderson, William P.: EFFECTS OF URBANIZATION ON AIR TEMPERATURE/WATER TEMPERATURE RELATIONSHIP IN TWO SMALL, MOUNTAIN STREAMS

**26-12** 4:40 PM Johnson, Bradley G.*; Morris, Catherine S.; Reilly, Caitlin E.: BLOOMS IN LAKE ALLATOONA, GA AND SEVERITY OF FRESHWATER HARMFUL ALGAL BLOOMS IN LAKE ALLATOONA, GA

**SESSION NO. 27**

**T27. Sedimentary Geology and the Effectiveness of Confedere Temporary Coastal Fortifications**

1:00 PM, Omni Richmond Hotel Shenandoah H

Lee Morgan B., Stuart, Custer, Kilpatrick and Barnsworth: TOPOGRAPHY, MILITARY GEOLOGY AND DRAMA OF THE EAST AND SOUTH CAVALRY FIELDS AT THE CIVIL WAR BATTLE OF GETTYSBURG, ADAMS COUNTY, PENNSYLVANIA - JULY 3, 1863

**27-1** 1:00 PM Neubauan, John C.*; Keen, Richard C.; Inners, Jon D.: EFFECTIVENESS OF CONFEDERATE TEMORARY COASTAL FORTIFICATIONS

**27-2** 1:20 PM Hippensteel, Scott P.: SEDIMENTARY GEOLOGY AND THE EFFECTIVENESS OF CONFEDERATE TEMORARY COASTAL FORTIFICATIONS

**27-3** 1:40 PM Manda, Alex K.*; Peffer, Colby: A MODERN GEOLOGIC HISTORY OF COCKSPUR ISLAND AND FORT PULASKI, GA

**27-4** 2:00 PM Forcino, Frank L.*; Salter, Rachel L.: SCARPS, RIDGES, AND SWALES: THE ROLE OF COASTAL PLAIN GEOLOGY AT THE BATTLE OF GREEN SPRING, AMERICAN REVOLUTION

**27-5** 2:20 PM McNamee, Britanni D.*: MULTIDISCIPLINARY MICROSCOPY COURSE FOR UNDERGRADUATE RESEARCH STUDENTS IN THE NATURAL SCIENCES

**27-6** 2:40 PM Childers, Daniel P.*: OTHERS*NO MUNDY FIELD AND LABORATORY RESEARCH PROJECTS IN EARLY UNDERGRADUATE GEOSCIENCES AT DELAWARE COUNTY COMMUNITY COLLEGE

**27-7** 3:00 PM BREAK


**27-9** 3:40 PM Manda, Alex K.*: QUANTITATIVELY ASSESSING THE INFLUENCE OF THE ‘THINK-PAIR-SHARE’ ACTIVE LEARNING PEDAGOGICAL APPROACH ON CONTENT KNOWLEDGE AND SELF-CONFIDENCE OF STUDENTS IN AN INTRODUCTORY LEVEL GEOLOGY COURSE

**27-10** 4:00 PM Salter, Rachel L.*: RAPID RESPONSE RUBRIC (3R): A NOVEL TOOL FOR INSTRUCTOR-GENERATED FEEDBACK

**27-11** 4:20 PM Stoddard, Edward F.*; Bradley, Philip J.: GEOLOGY OF WAKE COUNTY, NC: A VIEW FROM THE GREENWAYS

**27-12** 4:40 PM CONCLUDING REMARKS
SESSION NO. 27

T20. Clastics, Carbonates, and Soils (Posters)

SESSION NO. 29

T17. Geologic Studies of the U.S. Atlantic Coastal Plain Province (Posters)

SESSION NO. 30

T20. Clastics, Carbonates, and Soils (Posters)
SESSION NO. 31
Archaeological Geology, Paleoclimate, and Geomorphology (Posters)
1:00 PM, Omni Richmond Hotel James River Ballroom
Authors will be present from 2 to 4 PM

Booth #

31-1 19 Ferguson, Benedict W.*; Stinchcomb, Gary E.: HOW DO ALLUVIAL LANDFORMS AFFECT THE STORAGE OF SOIL ORGANIC CARBON? A CASE STUDY FROM HUMID-TEMPERATE WESTERN KENTUCKY

31-2 20 Steele, Kristen L.*; Dowsett, Harry J.; Robinson, Marc M.; St. John, Kristen E.: RECONSTRUCTING INDIAN MONSOON STRENGTH IN THE BAY OF BENGAL DURING THE PLIOCENE M2 EVENT: ESTIMATION OF PALEOSALINITY LEVELS

31-3 21 Minkara, Karim E.*; Rabideaux, Nathan; Deocampo, Daniel; Kingston, John D.; Cohen, Andrew S.: PALEOVOLCENVIRONMENTAL INTERPRETATION OF DRILL CORE FROM TUGEN HILLS, KENYA USING X-RAY DIFFRACTION

31-4 22 Davis, David M.*; Deocampo, Daniel M.; Campisano, Christopher J.: A MINERALOGICAL ANALYSIS OF HSPPD CORE SAMPLES FROM THE NORTHERN AWASH: RECORD OF AN EAST AFRICAN PALEOLEAKE FROM THE PLIOCENE HADAR FORMATION, ETHIOPIA

31-5 23 Savrda, Charles E.*: BIOEROSION OF A BEDROCK STREAMBED BY MODERN INSECT LARVAE, CONECUH RIVER, SOUTH ALABAMA

31-6 24 Moore, Christopher R.*; West, Allen; LeCompte, Malcolm; Brooks, Mark J.; Daniel, I. Randolph; Goodyear, Albert C.; Ferguson, Terry A.; Ivester, Andrew H.; Feathers, James K.; Kennett, James; Tankersley, Kenneth B.; Aedeji, A. Victor; Bunch, T.: WIDESPREAD PLATINUM ANOMALY DOCUMENTED AT THE YOUNGER DRYAS ONSET IN NORTH AMERICAN SEDIMENTARY SEQUENCES CONSISTENT WITH GREENLAND ICE CORE DATA

31-7 25 Weisberger, Benjamin*; Eppes, Martha Cary: THE MORPHOLOGY AND HISTORY OF EXFOLIATION ON PLUTONIC DOMES IN THE SOUTHEASTERN UNITED STATES

31-8 26 Nelson, Michelle Summa*; Rittenour, Tammy; Mahan, Shannon A.; Ideker, Carlie: BRINGING THE MID-ATLANTIC REGION TO THE LIGHT: A SUMMARY OF PUBLISHED LUMINESCENCE AGES (OSL, IRSL, TL) FROM THE AREA, WHAT WE HAVE LEARNED AND NEW UTILITIES OF THE TECHNIQUE IN REGIONAL GEOMORPHOLOGY AND ARCHAEOLOGY

31-9 27 Jain, Jinesh C.*; Bhatt, Chet R.; Gougeuel, Christian L.; Edenborn, Harry M.; McIntyre, Dustin L.: A RAPID METHOD FOR THE CHEMICAL ANALYSIS OF CHARCOAL IRON FURNACE SLAGS

SESSION NO. 32
Paleontology, Paleoeocology, and Taphonomy (Posters)
(Paleontological Society)
1:00 PM, Omni Richmond Hotel James River Ballroom
Authors will be present from 2 to 4 PM

Booth #

32-1 28 Ritter, Matias do Nascimento*; Erthal, Fernando; Kosnik, Matthew A.; Coimbra, João Carlos; Kaufman, Darrell S.; Kowalewski, Michal: QUANTITATIVE ESTIMATES OF TIME-AVERAGING IN MOLLUSK DEATH ASSEMBLAGES ON THE SOUTHERN BRAZILIAN SHELF

29 Thompson, Carmi Milagros*; Ramsey, Kelvin W.; Lockwood, Rowan: SURVEY OF MOLLUSCAN FAUNA FROM THE OFFSHORE MID-ATLANTIC UNITED STATES

30 Irwin, Margaret*; Wingard, G. Lynn; Lockwood, R.; Landacre, Bryan D.: MARINE AND ESTUARINE MOLLUSCAN ASSEMBLAGE AND SUB-AQUATIC VEGETATION CHANGE IN FLORIDA BAY THROUGHOUT THE PAST MILLENNIUM

31-4 31 Portell, Roger W.*; Lee, Gary G.; Edwards, Richard L.; Heatherington, Anne: FLORIDA MARINE MICROMOLLUSKS FROM THE PINECREST BEDS, TAMIAI FORMATION: HIGHER-LEVEL TAXA HITHERTO UNREPORTED THEREIN AND IN SUBSEQUENT WESTERN ATLANTIC PLIOCENE AND QUATERNARY FAUNAS

32-5 32 Pedigo, Richardson M.*; Forcino, Frank L.; Stafford, Emily S.; Hurding-Jones, Holly: VARIATIONS OF COMMUNITY DYNAMICS BETWEEN SIZE CATEGORIES IN THE TAMIAI FORMATION, FLORIDA

33 Hurding-Jones, Holly*; Forcino, Frank L.; Stafford, Emily S.: DOES SPATIAL HETEROGENEITY AFFECT PREDATION WITHIN THE PINECREST BEDS, TAMIAI FORMATION, FLORIDA?

34 Howard, Rainee L.*; Stafford, Emily S.; Forcino, Frank L.: PREDATION REPAIR FREQUENCY IN BRACHIOPODS OF THE ORDOVICIAN CORYVILLE MEMBER, GRANT LAKE FORMATION, KENTUCKY

35 Rosbach, Thomas J.*: AN UNUSUALLY LARGE LATE DEVONIAN DISCINID BRACHIOPOD FROM FORT LEWIS MOUNTAIN, VIRGINIA

36 Gibson, Michael A.*; Rhenberg, Elizabeth C.; Gibson, Brandt M.: FIRST REPORTED OCCURRENCE OF RHAPHANOCRINUS FROM GRAVEL DEPOSITS OF WEST TENNESSEE

37 Paton, Timothy*; Sumrall, Colin D.; Brett, Carlton E.: A HIGH-DENSITY EDROASTEROID-ENCRUSTED HARDGROUND FROM THE BRANNON MEMBER OF THE LEXINGTON LIMESTONE (UPPER ORDOVICIAN, KATIAN, MOHAWKIAN)

38 Godkin, Russell S.*; Sheffield, Sarah L.: A GROWTH STUDY OF ORDOVICIAN SPAHERONITES (DIPOLOPORITA: ECHINODERMATA)

39 Johnson, Sarah R.*; Sheffield, Sarah L.: ONTOGENETIC AND SYSTEMATIC STUDY OF EUCYSTIS (DIPOLOPORITA: ECHINODERMATA)

40 Paulik, Mallory*; Jovanelly, Tamie J.; Santamaria, Jose: UPDATING THE GEORGIA FOSSIL RECORD (CAMBRIAN THROUGH OLIGOCENE)

41 Alford, Aaron A.*; Nance, John; Murray, James: A PORTABLE AND MODULAR SCUBA-BASED AIR-TOOL SYSTEM FOR EXCAVATION AND PREPARATION OF LARGE VERTEBRATE SPECIMENS IN CHALLENGING FIELD CONDITIONS

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