



THE  
GEOLOGICAL  
SOCIETY  
OF AMERICA®

# SOUTHEASTERN Section Meeting

30–31 March 2017

Omni Richmond Hotel  
Richmond, Virginia, USA



Abstract

**66th Annual Meeting**  
**Southeastern Section of the Geological Society of America**  
**Richmond, Virginia, USA**  
**30–31 March 2017**

**[www.geosociety.org/section/se/2017mtg](http://www.geosociety.org/section/se/2017mtg)**



*Rockin' the Fall Zone*

**Local Committee for the 2017 Meeting**

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***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  
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University of Tennessee  
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**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](mailto:vmcconnell@geosociety.org)

GSA Past President, Jonathan Price, [jprice@unr.edu](mailto:jprice@unr.edu)

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

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## 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

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

Category	Standard	
	Full Meeting	One day
Professional member .....	\$230.....	\$140
Professional nonmember.....	\$250.....	\$160
Early Career Professional .....	\$160.....	\$105
Student member.....	\$90.....	\$70
Student nonmember .....	\$120.....	\$90
K–12 Professional.....	\$50.....	\$40
Guest .....	\$50.....	N/A
Field trip/workshop only.....	\$40.....	N/A

## 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.

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**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](https://pshs.virginia.gov/media/2165/RIC_Parking.pdf) for further information.

## 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](mailto:mcarter@usgs.gov); Scott Southworth, USGS, [ssouthw@usgs.gov](mailto:ssouthw@usgs.gov); Richard Tollo, GWU, [rtollo@gwu.edu](mailto: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.

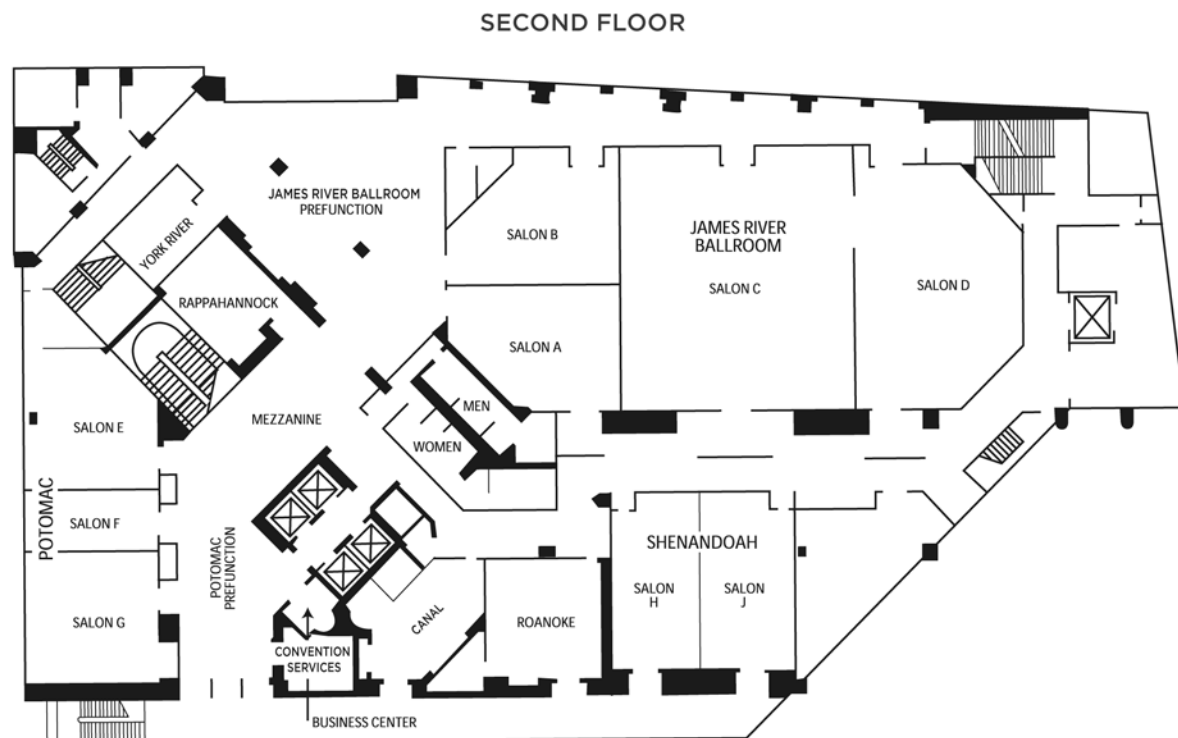
**2. From Laurentia to Iapetus: Traversing the Blue Ridge–Piedmont Terrane Boundary in Central Virginia.** Check in at noon, Tuesday, 28 March. Trip runs 28–29 March. Cost: US\$170. Christopher M. Bailey, College of William and Mary, [cmvail@wm.edu](mailto:cmvail@wm.edu); Anna V. Spears, College of William and Mary, [avspears@email.wm.edu](mailto: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](mailto:alexander.hastings@vmnh.virginia.gov); Ray Vodden, Virginia Museum of Natural History, [raymond.vodden@vmnh.virginia.gov](mailto:raymond.vodden@vmnh.virginia.gov); Christina Byrd, Virginia Museum of Natural History, [christina.byrd@vmnh.virginia.gov](mailto: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.



Cost: US\$20. Karen M. Layou, Reynolds Community College, KLayout@reynolds.edu; Brent Owens, College of William and Mary, beowen@wm.edu.

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.

**6. Tertiary Strata and Paleontology of the James River Region, Virginia.** Check in at 7 a.m., Saturday, 1 April. Trip runs 1–2 April. Lauck W. Ward, Virginia Museum of Natural History, Lauck.Ward@vmnh.virginia.gov; Harry Dowsett, USGS. Cost: US\$300.

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, leedward@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.

**11. Industrial Minerals and Mines in the Arvonion Formation of the Chopawamsic Terrane, Buckingham County, Virginia.** 7:30 a.m., 1 April. Cost: US\$70. Chee Saunders, Cardno Inc., chee.saunders@cardno.com.

The Arvonion 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

room is equipped with a lectern, PowerPoint advancer, 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

T8. Economic Geology and the Atlantic Continental Shelf: Marine Aggregate, Heavy Minerals, Energy Resources, and Carbon Storage

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

T13. 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, Paleocology, 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](mailto: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](mailto: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](mailto: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

## EMERGENCIES

For all emergencies dial 911.

## Sponsor Logos



**SPRINGER NATURE**



## 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

EVENT	TIME	LOCATION
<b>MONDAY, 27 MARCH</b>		
FT1. Geology along the Blue Ridge Parkway in Virginia (Field Trip)	7 a.m.	Richmond Omni, GSA Field Trip Check-In Desk
<b>TUESDAY, 28 MARCH</b>		
FT2. From Laurentia to Iapetus: Traversing the Blue Ridge–Piedmont Terrane Boundary in Central Virginia (Field Trip)	noon	Richmond Omni, GSA Field Trip Check-In Desk
<b>WEDNESDAY, 29 MARCH</b>		
FT3. Fossil-Collecting from the Middle Miocene Carmel Church Quarry Marine Ecosystem (Field Trip)	8 a.m.–5:15 p.m.	Richmond Omni, GSA Field Trip Check-In Desk
Speaker Ready Room	noon–7 p.m.	Canal Room
Registration	3–7 p.m.	Main Foyer, Convention Floor
FT4. Geology and Geomorphology of Belle Isle, Richmond (Field Trip)	1–5 p.m.	Richmond Omni, GSA Field Trip Check-In Desk
Opening Icebreaker	5–7 p.m.	James River Ballroom
<b>THURSDAY, 30 MARCH</b>		
Southeastern GSA Section Breakfast and Business Meeting	6:30–8 a.m.	Rappahannock Room
Session Chair Orientation and Breakfast	7–7:50 a.m.	Potomac F
Registration	7 a.m.–5 p.m.	Main Foyer, Convention Floor
Speaker Ready Room	7 a.m.–5:30 p.m.	Canal Room
Geoscience Career Workshop: Part 1: Career Planning and Informational Interviewing (Workshop)	9–10 a.m.	Potomac F
Geoscience Career Workshop: Part 2: Geoscience Career Exploration (Workshop)	10–11 a.m.	Potomac F
<b>Morning Oral Technical Sessions</b>		
Folds, Faults, Fractures, & Terranes	8 a.m.–noon	Potomac E
P1. From Mountains to Coast: Biogeochemical Processes Affecting the Water Quality of the Bay in Our Backyard	8 a.m.–noon	Potomac G
T2. Cenozoic Paleontology of the Mid-Atlantic	8 a.m.–noon	Roanoke Room
T4. Digital Imaging Techniques for Enhancing Student Learning and Research	8 a.m.–noon	Shenandoah H

EVENT	TIME	LOCATION
<b>Morning Poster Sessions</b>		
Economic & Energy Geology (Posters)	8 a.m.–noon	James River Ballroom
Environmental Geology & Geochemistry (Posters)	8 a.m.–noon	James River Ballroom
T19. Undergraduate Research I (Posters)	8 a.m.–noon	James River Ballroom
Geoscience Career Mentoring Luncheon: Roy J. Shlemon Mentor Program in Applied Geoscience	noon–1:30 p.m.	Rappahannock Room
Library of Virginia Maps Open House	1–4 p.m.	800 E. Broad St., Richmond
<b>Afternoon Oral Technical Sessions</b>		
T5. Beaches, Barriers, and Marshes of the Southeast Coast: Dynamic Systems in a Changing Climate	1–5 p.m.	Potomac G
T8. Economic Geology and the Atlantic Continental Shelf: Marine Aggregate, Heavy Minerals, Energy Resources, and Carbon Storage	1–5 p.m.	Shenandoah H
T10. Deciphering Metamorphic Histories in Multiply-Deformed Terranes in the Piedmont and Blue Ridge	1–5 p.m.	Potomac E
T13. Topics in Paleozoic Paleontology and Stratigraphy	1–5 p.m.	Roanoke Room
<b>Afternoon Poster Sessions</b>		
T6. Karst Geology and Hazards in the Southeastern U.S. (Posters)	1–5 p.m.	James River Ballroom
T11. Hydrology and Hydrogeology in the Southeast: Processes, Problems, and Geologic Controls (Posters)	1–5 p.m.	James River Ballroom
T19. Undergraduate Research II (Posters)	1–5 p.m.	James River Ballroom
Geoscience Career Workshop: Part 3: Cover Letters, Résumés, and CVs (Workshop)	3–4 p.m.	Potomac F

## FRIDAY, 31 MARCH

GSA Campus Representative Breakfast	7–7:50 a.m.	Potomac F
Session Chair Orientation and Breakfast	7–7:50 a.m.	Potomac F
Registration	7 a.m.–noon	Main Foyer, Convention Floor
Speaker Ready Room	7 a.m.–2 p.m.	Canal Room
<b>Morning Oral Technical Sessions</b>		
T16. Stormwater Control Measures: Runoff Quantity and Pollution Science and Management in the Southeastern U.S.	8–10 a.m.	Potomac E
T3. Geoscience Careers for New Geoscience Graduates	8 a.m.–noon	Roanoke Room
T9. Seismic Zones, Paleoseismology, and Neotectonics in the Southeastern United States	8 a.m.–noon	Potomac G
T17. Geologic Studies of the U.S. Atlantic Coastal Plain Province	8 a.m.–noon	Shenandoah H
T11. Hydrology and Hydrogeology in the Southeast: Processes, Problems, and Geologic Controls I	10:20 a.m.–noon	Potomac E

EVENT	TIME	LOCATION
<b>Morning Poster Sessions</b>		
Geoinformatics and Geoscience Education (Posters)	8 a.m.–noon	James River Ballroom
Petrology and Planetary Geology (Posters)	8 a.m.–noon	James River Ballroom
P2. Tectonics of Blue Ridge and Piedmont Terranes: Insight from Integrated Studies (Posters)	8 a.m.–noon	James River Ballroom
P3. Geologic Maps and Map Derivatives: The Legacy of Mike Higgins (Posters)	8 a.m.–noon	James River Ballroom
Geoscience Career Mentoring Luncheon: John Mann Mentors in Applied Hydrology Program	noon–1:30 p.m.	Rappahannock Room
<b>Afternoon Oral Technical Sessions</b>		
P4. Geology and the Civil War	1–5 p.m.	Potomac G
T7. Transforming Geoscience Teaching and Learning at 2Y and 4Y Colleges	1–5 p.m.	Roanoke Room
T11. Hydrology and Hydrogeology in the Southeast: Processes, Problems, and Geologic Controls II	1–5 p.m.	Potomac E
T15. Plutonism and Volcanism in the Appalachians and Beyond	1–5 p.m.	Shenandoah H
<b>Afternoon Poster Sessions</b>		
Archaeological Geology, Paleoclimate, and Geomorphology (Posters)	1–5 p.m.	James River Ballroom
Paleontology, Paleocology, and Taphonomy (Posters) <i>Sponsored by the Paleontological Society</i>	1–5 p.m.	James River Ballroom
T5. Beaches, Barriers, and Marshes of the Southeast Coast: Dynamic Systems in a Changing Climate (Posters)	1–5 p.m.	James River Ballroom
T17. Geologic Studies of the U.S. Atlantic Coastal Plain Province (Posters)	1–5 p.m.	James River Ballroom
T20. Clastics, Carbonates, and Soils (Posters)	1–5 p.m.	James River Ballroom
BOEM Cooperative Agreement Data Coordination Meeting	2–5 p.m.	Potomac F
<b>SATURDAY, 1 APRIL</b>		
FT8. Geology and Biostratigraphy of the Potomac River Cliffs at Stratford Hall, Westmoreland County, Virginia (Field Trip)	7 a.m.–7 p.m.	Richmond Omni, GSA Field Trip Check-In Desk
FT9. Geology of the Petersburg Batholith, Eastern Piedmont, Virginia (Field Trip)	7 a.m.–7 p.m.	Richmond Omni, GSA Field Trip Check-In Desk
FT6. Tertiary Strata and Paleontology of the James River Region, Virginia (Field Trip)	7 a.m.	Richmond Omni, GSA Field Trip Check-In Desk
FT7. Geologic Evolution, Modern Processes, and Management Strategies of Virginia's Mainland Beaches and Barrier Islands (Field Trip)	7 a.m.	Richmond Omni, GSA Field Trip Check-In Desk
FT10. Geology and the Petersburg Campaign in the American Civil War (Field Trip)	7:30 a.m.–7 p.m.	Richmond Omni, GSA Field Trip Check-In Desk
FT11. Industrial Minerals and Mines in the Arvonja Formation of the Chopawamsic Terrane, Buckingham County, Virginia (Field Trip)	7:30 a.m.–7 p.m.	Richmond Omni, GSA Field Trip Check-In Desk
FT5. Geologic Controls on Cave Development in the Burnsville Cove Area, Bath and Highland Counties, Virginia (Field Trip)	7:30 a.m.	Richmond Omni, GSA Field Trip Check-In Desk

# 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, 30 MARCH 2017

### 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

#### 8:00 AM INTRODUCTORY REMARKS

- 1-1 8:05 AM Webber, James Steven\*; Hyer, Ken; Denver, Judith M.; Langland, Michael; Bohlke, J.K.: **WATER-QUALITY RESULTS FROM THREE CHESAPEAKE BAY SHOWCASE WATERSHEDS: MONITORING AND ANALYSIS DESIGNED TO ASSESS AND INFORM RESTORATION**
- 1-2 8:25 AM Denver, Judith M.\*: **IRRIGATION AS A CONSERVATION PRACTICE TO REDUCE NITRATE CONCENTRATIONS IN COASTAL PLAIN GROUNDWATER, EASTERN SHORE CHESAPEAKE BAY WATERSHED**
- 1-3 8:50 AM Mills, Aaron L.\*; Herman, Janet S.: **POTENTIAL FOR DENITRIFICATION UNDER CHANGING LAND USE AND CLIMATE**
- 1-4 9:10 AM Krask, Julie Lauren\*; Beck, Aaron J.: **INVESTIGATING NOVEL PATHWAYS FOR N REMOVAL IN THE SUBTERRANEAN ESTUARY**
- 1-5 9:30 AM Noe, Gregory B.\*; Claggett, Peter; Hupp, Cliff R.; Schenk, Edward R.: **REGIONAL MEASUREMENT AND MODELING OF FLOODPLAIN WETLAND NUTRIENT AND SEDIMENT FLUXES: THE CHESAPEAKE WATERSHED**
- 9:55 AM DISCUSSION
- 10:00 AM BREAK
- 1-6 10:15 AM Harman, Ciaran J.\*; Putnam, Shane; Cosans, Cassandra; Wilusz, Daniel C.: **FLUSHING THE SAPROLITE: BASEFLOW AND QUICKFLOW AGE VARIABILITY IN THE STREAMFLOW OF A DEEPLY-WEATHERED PIEDMONT WATERSHED**

- 1-7 10:40 AM Rice, Karen C.\*; Moyer, Douglas L.; Mills, Aaron L.: **RIVERINE DISCHARGES TO CHESAPEAKE BAY: ANALYSIS OF LONG-TERM (1927-2014) RECORDS AND IMPLICATIONS FOR FUTURE FLOWS IN THE CHESAPEAKE BAY BASIN**
- 1-8 11:00 AM Noe, Gregory B.\*; Gillespie, Jaimie; Hupp, Cliff R.; Krauss, Ken: **DOES WATERSHED SEDIMENT DELIVERY INCREASE THE RESILIENCE OF TIDAL FRESHWATER WETLANDS TO SEA LEVEL RISE?**
- 1-9 11:20 AM Lorah, Michelle M.\*; Cozzarelli, Isabelle M.; Akob, Denise M.: **BIOGEOCHEMICAL PROCESSES AFFECTING GROUNDWATER DISCHARGE IN A CHLOROBENZENE-CONTAMINATED WETLAND**
- 11:45 AM CONCLUDING REMARKS

#### SESSION NO. 2

##### *T2. Cenozoic Paleontology of the Mid-Atlantic*

8:00 AM, Omni Richmond Hotel Roanoke Room

Emily S. Stafford, Presiding

#### 8:00 AM INTRODUCTORY REMARKS

- 2-1 8:20 AM Smith, Kathlyn M.\*; Dooley, Alton C.; Hanfland, Trevor: **LONG IN THE TOOTH: TUSK MORPHOLOGY OF LATE PLEISTOCENE PROBOSCIDEANS FROM THE DIAMOND VALLEY LAKE LOCAL FAUNA, INLAND SOUTHERN CALIFORNIA**
- 2-2 8:40 AM Lyle, R. Courtland\*; Hastings, Alexander K.; Dooley, Alton C.: **NEW MYSTICETE WHALE SPECIMEN COULD REPRESENT FIRST OF ITS KIND FROM MIDDLE MIOCENE SITE IN CAROLINE COUNTY, VIRGINIA**
- 2-3 9:00 AM Hastings, Alexander K.\*; Treado, Lucy; Lyle, R. Courtland; Dooley, Alton C.: **SHARK DIVERSITY AND WATER DEPTH ESTIMATION AT THE MIDDLE MIOCENE CARMEL CHURCH QUARRY ECOSYSTEM (CAROLINE COUNTY, VIRGINIA)**
- 2-4 9:20 AM Campbell, Matthew R.\*: **MOLLUSCAN FAUNA OF THE UPPER PLEISTOCENE WANDO FORMATION, CHARLESTON, SOUTH CAROLINA**
- 2-5 9:40 AM Stafford, Emily S.\*; Montoya, Leslie Marie; Forcino, Frank L.: **COMPARISONS OF COMMUNITY AND PREDATION**

# BETWEEN LARGE AND SMALL GASTROPODS IN THE MIOCENE ST. MARY'S FORMATION, MARYLAND

- 10:00 AM **BREAK**
- 2-6 10:20 AM Roberson, R. Philip\*; Casey, Michelle M.: **MORPHOMETRIC ANALYSIS OF *ASTARTE* (BIVALVIA: ASTARTIDAE) FROM THE ATLANTIC COASTAL PLAIN**
- 2-7 10:40 AM Kelley, Patricia H.\*; Hansen, Thor A.: **TEMPORAL PATTERNS IN EDGE- AND WALL-DRILLING PREDATION ON OLIGOCENE THROUGH PLEISTOCENE BIVALVES OF THE MIDDLE ATLANTIC COASTAL PLAIN**
- 2-8 11:00 AM Tennakoon, Shamindri Dinusha\*; Lindberg, William; Kowalewski, Michał: **MOLLUSKS AS A PROXY FOR ASSESSING ECOLOGICAL IMPACTS OF ARTIFICIAL REEFS: A COMPARISON OF DEAD AND LIVING MOLLUSK ASSEMBLAGES IN THE SUWANNEE REGIONAL REEF SYSTEM, FLORIDA**
- 2-9 11:20 AM Kowalewski, Michał\*; Tyler, Carrie L.: **MOLLUSKS AS ARCHIVES OF SPATIAL BIODIVERSITY PATTERNS IN MARINE BENTHIC COMMUNITIES: AN EXAMPLE FROM COASTAL NORTH CAROLINA, USA**

## 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

- 8:00 AM **INTRODUCTORY REMARKS**
- 3-1 8:20 AM Sethi, Parvinder\*; Philippart, Dylan: **UNIVERSAL DESIGN ASPECTS FOR CREATING CUTTING-EDGE, DIGITAL IMAGING-BASED, LABORATORY APPLICATIONS FOR TEACHING GEOSCIENCES**
- 3-2 8:40 AM Bentley, Callan\*; Rohrbach, Robin: **COMMUNICATING 'EXPLORABLE' GEOSCIENCE WITH BIG PICTURES OF SMALL THINGS**
- 3-3 9:00 AM Amick, Nathan\*; Miller, Brigitte; Watts, Chester F.: **UNMANNED AERIAL SYSTEMS 3D MODELING OF SHRINKING SHORELINES AND THE LEAKING LAKEBED, MOUNTAIN LAKE, GILES COUNTRY, VIRGINIA**
- 3-4 9:20 AM Voll, 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 CLAYTOR LAKE, VIRGINIA**
- 3-5 9:40 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**
- 3-6 10:20 AM Fink, Sam P.\*; Vulava, Vijay M.; Beckingham, Barbara A.: **DEMONSTRATION OF AN AUGMENTED REALITY SANDBOX TO VISUALIZE EARTH SYSTEMS**
- 3-7 10:40 AM Martin, Anthony J.\*; Page, Michael; Bransford, Stephen; Salinas, Anandi; Tullios, Allen: **THE GEORGIA COAST ATLAS: A MULTI-FACETED DIGITAL SCHOLARSHIP PROJECT INTENDED FOR STUDENTS AND THE PUBLIC**
- 3-8 11:00 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**
- 3-9 11:20 AM Wood, R. Seth\*; Manning-Berg, Ashley R.; Williford, Kenneth H.; Kah, Linda C.: **ASSESSING MICROFOSSIL TAPHONOMY WITH HIGH-RESOLUTION IMAGERY**
- 3-10 11:40 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**
- 4-1 8:20 AM Churnet, Habte G.\*: **COMPLEX STRUCTURES IN THE LOOKOUT VALLEY ANTICLINE, GEORGIA, NEAR THE TENNESSEE BOUNDARY**
- 4-2 8:40 AM Walker, Trenton J.\*; Hatcher, Robert D.: **EMPLACEMENT KINEMATICS OF TWO LARGE HORSES ALONG THE GREAT SMOKY FAULT IN THE PARKSVILLE 7.5-MINUTE QUADRANGLE, SOUTHEASTERN TENNESSEE**
- 4-3 9:00 AM Bartholomew, Mervin J.\*; Rich, Frederick J.; Evans, Mark A.: **DEVELOPMENT OF MESOZOIC AND CENOZOIC FRACTURE-SETS IN EASTERN GEORGIA**
- 4-4 9:20 AM Brown, Summer J.\*; Thigpen, J. Ryan; Hoar, Rachel M.: **TETON FAULT EVOLUTION PART 1: ONSET TIMING AND SLIP HISTORY**
- 4-5 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**
- 10:00 AM **BREAK**
- 4-6 10:20 AM Koteas, G. Christopher\*; Eddy, Christopher M.; Lortie, Kirstin; Del Avellano, Adele; Maciel, Tomas; DeFelice, Christopher: **INFLUENCE OF LOCALIZED HIGH-STRAIN AND REGIONAL PLUTONISM ON THE TACONIC-ACADIAN INTERFACE IN CENTRAL VERMONT**
- 4-7 10:40 AM Burton, William C.\*; Southworth, Scott: **DISCONTINUITIES AND CONNECTIONS IN PIEDMONT AND BLUE RIDGE TERRANES FROM MARYLAND TO VIRGINIA**
- 4-8 11:00 AM Bailey, Christopher M.\*: **TRACKING TERRANES IN VIRGINIA: SOUTHWESTWARD TRANSPORT ACROSS A TRANSPRESSIONAL OROGEN**
- 4-9 11:20 AM Thomas, William A.\*: **TERRANE ACCRETION AND TECTONIC HISTORY OF THE SOUTHERN MARGIN OF LAURENTIA**

## MORNING POSTER TECHNICAL SESSIONS

## 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

Booth #

- 5-1 1 Winter, Justin\*; Dupree, Roderick; Edwards, Daniel; Hartman, Courtney; Hills Grove, Jonathan; Streicher, Mitchell; Tatum, Joshua Michael; Turner, Liam; 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; McNamee, Brittani 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. 5

- 5-5 5 Nordling, Adam\*; McTaggart, Elizabeth; Johnson, Elizabeth A.; Myers, Madison L.; Wallace, Paul; Wilson, Colin J.N.: **ESTIMATING WATER CONTENTS OF BISHOP TUFF MAGMA FROM HYDROXYL CONCENTRATIONS IN FELDSPAR PHENOCRYSTS**
- 5-6 6 McTaggart, Elizabeth\*; Nordling, Adam; Johnson, Elizabeth A.; Myers, Madison L.; Wallace, Paul; Wilson, Colin J.N.: **INSIGHTS INTO MAGMATIC WATER CONTENTS AT THE ONSET OF A YELLOWSTONE SUPERERUPTION FROM HYDROXYL CONTENTS IN FELDSPAR**
- 5-7 7 Rose, Jared W.\*; Kuehn, Stephen C.: **EXPANDED AND REVISED TEPHROCHRONOLOGY FOR THE 220,000-YEAR RECORD FROM CARP LAKE, WASHINGTON, USA**
- 5-8 8 Botticher, Joshua J.\*; Allison, Jerry D.; Mobasher, Katayoun: **X-RAY FLUORESCENCE ANALYSIS OF SAW CUTTINGS OF GRANITIC ROCKS**
- 5-9 9 Skolrood, Lydia N.\*; Allison, Jerry D.: **A DATABASE MANAGEMENT TOOL FOR THE PHREEQC AND MINTEQA2 GEOCHEMICAL MODELS**
- 5-10 10 Qualls, Logan M.\*; Bauer, Jennifer E.; Sumrall, Colin D.: **FIRST 3D RECONSTRUCTION OF INTERNAL HYDROSPIRE RESPIRATORY STRUCTURES IN FISSICULATE BLASTOIDS (ECHINODERMATA)**
- 5-11 11 Firat, Connor Bora\*; Holmes, Ann E.: **SILURIAN-DEVONIAN BOUNDARY LOCATION NARROWED AT MUSTOE, VA OUTCROP ON THE BASIS OF STROMATOPOROID GENERA, SPECIES**
- 5-12 12 Ellis, Nicholas M.\*; Tobin, Thomas S.: **USING CARBONATE STABLE ISOTOPES TO IDENTIFY SEASONAL TRENDS IN LATE CRETACEOUS AMMONITES**
- 5-13 13 Takashita-Bynum, Kevin K.\*; Liutkus-Pierce, Cynthia M.: **STRATIGRAPHIC ANALYSIS AND PALEOENVIRONMENTAL INTERPRETATION OF AN EARLY MIOCENE PRIMATE FOSSIL SITE IN THE TURKANA BASIN; WESTERN KENYA**
- 5-14 14 Beane, Luke\*; Liutkus-Pierce, Cynthia M.; Wright, James D.: **EARLY MIOCENE PALEOLANDSCAPE OF THE LOPEROT PRIMATE FOSSIL SITE (KENYA) DETERMINED BY RHIZOLITH SIZE VARIANCE AND STABLE ISOTOPIC SIGNATURE**
- 5-15 15 Melander, Scott\*; Stone, Michael; Spivey, Whitney E.; Rice, Brooks; Albright, Brandon; St. John, Kristen: **A MULTI-PROXY ANALYSIS OF CORE MD02-2555 FROM THE TEXAS-LOUISIANA SLOPE ON THE GULF OF MEXICO**
- 5-16 16 Crouch, Joseph D.\*; Chowns, Timothy M.: **DISCONTINUITIES IN THE PROGRADATION OF JEKYLL SPIT TIED TO THE BREACHING OF ST. SIMONS SOUND AND THE SEPARATION OF JEKYLL FROM ST. SIMONS ISLAND, GEORGIA, USA**
- 5-17 17 O'Brien, Sydney T.\*; Ivester, Andrew H.; Jennings, Thomas A.; Elliott, Daniel T.; Ashlock, Dawn C.; Hanson, Paul R.: **RECONSTRUCTING ARCHAIC LANDSCAPES IN THE SANDHILLS: A GEOARCHAEOLOGICAL ANALYSIS OF EOLIAN DEPOSITIONAL ENVIRONMENTS AT FORT BENNING, GEORGIA**
- 5-18 18 Grove, Alisson L.\*; Shmorhun, Nina; Culver, S.J.; Mallinson, David J.; Farrell, Kathleen M.; Riggs, Stanley R.: **FORAMINIFERAL ASSEMBLAGE CHARACTERISTICS IN HOLOCENE SHOREFACE AND SHELF FACIES OF BOGUE BANKS, NC**
- 5-19 19 Cressman, Amy W.\*; Shmorhun, Nina; Culver, S.J.; Mallinson, David J.; Farrell, Kathleen M.; Riggs, Stanley R.: **USING FORAMINIFERAL ASSEMBLAGES TO IDENTIFY HOLOCENE MARINE SUBENVIRONMENTS OF BOGUE INLET, NORTH CAROLINA**
- 5-20 20 Gammarino, Ian\*; Stephenson, George; McClellan, Elizabeth: **SEDIMENT SIZE ANALYSIS OF OUTER BANKS SAND SAMPLES**
- 5-21 21 Holcomb, Marshall\*; Scharman, Mitchell R.: **LATE PALEOZOIC DISPLACEMENT AND FAULT ZONE STRUCTURE, WALBRIDGE FAULT, ROME TROUGH, EASTERN KENTUCKY**
- 5-22 22 Hall, Casey\*; Scharman, Mitchell R.: **STRUCTURAL INVESTIGATION OF LATE PALEOZOIC NORMAL FAULTS, NORTHERN CARTER COUNTY, KENTUCKY**

- 5-23 23 Simonds, Mark H.K.\*; Abbott, Caroline P.; Lang, Katie E.; Kirkwood, Warren P.; Bailey, Christopher M.: **KINEMATIC HISTORY OF GRANITIC GNEISSES AT THE FALLS OF THE NOTTOWAY IN THE CAROLINA TERRANE, EASTERN PIEDMONT, VIRGINIA**
- 5-24 24 Allen, Kathryn\*; Waters-Tormey, Cheryl; Styers, Diane: **COMBINING GEOLOGICAL MAPPING AND LIDAR DATA TO ANALYZE THE CONTRIBUTION OF "LOCAL" VERSUS "REGIONAL" BEDROCK FRACTURE SETS IN WESTERN NORTH CAROLINA**
- 5-25 25 Ligush, John Paul\*; Gribbin, Matthew Vernon; Admassu, Yonathan: **COMPARING TERRESTRIAL LIDAR WITH STRUCTURE FROM MOTION FOR DISCONTINUITY ORIENTATION MEASUREMENT**
- 5-26 26 Proulx, Michelle\*; Cronin, Reagan A.; Varney, Donovan K.; McGary, R. Shane: **ESTABLISHING THE LOCATION OF UNMARKED BURIALS IN SLAVE/HISTORICAL CEMETERIES IN SHENENDOAH COUNTY, VA., USING GROUND-PENETRATING RADAR**
- 5-27 27 Brei, Genevieve\*; Bailey, Christopher M.: **PROVENANCE OF FERRUGINOUS SANDSTONE AT MENOKIN ON THE NORTHERN NECK PENINSULA, VIRGINIA**
- 5-28 28 Suranovic, Benjamin S.\*; Gochenour, Jacob Alexander; Gosselin, Greg; McGary, R. Shane: **CHARACTERIZATION OF GROUNDWATER FLOW FROM KARST SINKHOLE AT SURFACE INTO THE GRAND CAVERNS CAVE SYSTEM IN GROTTOS, VA. USING RESISTIVITY**
- 5-29 29 Gosselin, Greg\*; Gochenour, Jacob Alexander; Suranovic, Benjamin S.; McGary, R. Shane: **CHARACTERIZING VOID SPACES AND HYDROLOGICAL FEATURES ASSOCIATED WITH A KARSTIC SWALE AT GRAND CAVERNS, VA USING RESISTIVITY**
- 5-30 30 Weidlich, Kent\*; Watts, Chester F.: **USING UNMANNED AERIAL SYSTEMS, LIDAR, AND GEOPHYSICS TO STUDY KARST AT THE SELU CONSERVANCY, RADFORD, VIRGINIA**
- 5-31 31 Hill, Morgan\*; Ebersole, Sandy: **KARST GEOLOGY AT RICKWOOD CAVERNS STATE PARK**

## 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 Edenborn, H.M.\*; Zou, Youquin; Yang, Changbing: **COMPARISON OF METHODS USED FOR CO<sub>2</sub> LEAK DETECTION DURING PULSED RELEASE TESTS INTO POTABLE AQUIFER WELLS**
- 6-2 33 Edenborn, H.M.\*; Barna, Joshua; Fink, Madison S.; Herman, Ellen K.; Toran, Laura: **DIRECT AND CONTINUOUS MEASUREMENT OF DISSOLVED CO<sub>2</sub> 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.; Taylor, Kenneth 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 CO<sub>2</sub> SEQUESTRATION**
- 6-7 38 Luciano, Katherine\*; Tweel, 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**



- 6-8 39 Hughes, Matthew\*; Harris, M. Scott; Luciano, Katherine; Howard, C. Scott; Spirek, Jim: **INVESTIGATIONS INTO SOUTH CAROLINA'S OUTER CONTINENTAL SHELF (OCS) RESOURCES: IDENTIFICATION AND MAPPING OF PALEOLANDSCAPES OFFSHORE SOUTH CAROLINA USING NEW GEOPHYSICAL DATA**
- 6-9 40 Noles, Jonathan R.\*; Neal, Donald W.: **STRATIGRAPHIC AND STRUCTURAL CONTROLS ON GAS PRODUCTION OF THE UPPER DEVONIAN GORDON SANDSTONE LOCATED ALONG THE CATSKILL SHORELINE COMPLEX IN SOUTHERN WEST VIRGINIA**
- 6-10 41 Reid, Jeffrey C.\*; Taylor, Kenneth B.; Mensah-Biney, Robert; Simms, Jonathan; Akbari, Hamid: **TUNGSTEN QUEEN MINE TAILINGS EVALUATION, VANCE CO., NC: A POTENTIAL SILICA RESOURCE**

## 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 NATURAL SOILS**
- 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 HYPORHEIC EXCHANGE IN A PRE-RESTORATION URBAN FOREST STREAM: REEDY CREEK, CHARLOTTE, NC**

## AFTERNOON ORAL TECHNICAL SESSIONS

## 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 1:00 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 1:20 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 1:40 PM Atencio, Anna Nicole\*; Rodriguez, Antonio B.; McKee, Brent A.: **TEMPERATURE EFFECTS ON THE CARBON CONTENT OF MARSH CORE SUBSAMPLES THROUGH TIME**
- 8-4 2:00 PM Querry, Brian\*; Mallinson, David; Culver, Steven J.; Leorri, Eduardo: **GEOLOGY AND ORIGIN OF SAND RIDGES IN A BACK-BARRIER ESTUARY, PAMLICO SOUND, NC**
- 8-5 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, ASSATEAGUE ISLAND, AND THE INNER SHELF, MD AND VA**

- 8-6 2:40 PM Raff, Jessica L.\*; Shawler, Justin L.; Ciarletta, Daniel J.; Hein, Christopher J.; Hein, Emily A.: **BARRIER ISLAND CHANGE ALONG THE EASTERN SHORE OF VIRGINIA: INSIGHTS FROM A CHRONOLOGICAL AND SEDIMENTOLOGICAL STUDY OF PARRAMORE ISLAND**
- 3:00 PM **BREAK**
- 8-7 3:20 PM Dominguez, Rachele\*; Fenster, Michael S.; Stanek, Mathew: **QUANTIFYING STORM IMPACTS ON SANDY BEACHES USING A DETERMINISTIC/THEORETICAL STORM IMPACT FACTOR MODEL WITH AN APPLICATION ALONG THE VIRGINIA COAST**
- 8-8 3:40 PM Ames, Katherine\*; Psuty, Norbert P.; Habeck, Andrea: **METRICS OF COASTAL RESILIENCE AND RECOVERY AT FORT TILDEN, GATEWAY NATIONAL RECREATION AREA, POST-HURRICANE SANDY**
- 8-9 4:00 PM Seminack, Christopher T.\*; McBride, Randolph A.: **A LIFE-CYCLE MODEL FOR WAVE-DOMINATED TIDAL INLETS ALONG THE NORTH AMERICAN, ATLANTIC COAST: PRIMARY FACTORS INFLUENCING INLET EVOLUTION**
- 8-10 4:20 PM Fabian, Stephen\*; Leonard, Lynn; Hawkes, Andrea; Nooner, Scott: **INVESTIGATING THE MORPHOLOGICAL EVOLUTION AND CLOSURE DYNAMICS OF THE RELICT CABBAGE INLET, MASONBORO ISLAND, N.C**
- 8-11 4:40 PM Fenster, Michael S.\*; Rizzo, Brian; McManus, John: **NON-LINEAR SHORELINE CHANGE MODELING OF THE NORTHERN VIRGINIA COAST: VIRGINIA BARRIER ISLANDS AND ASSATEAGUE ISLAND**

## SESSION NO. 9

### *T8. Economic Geology and the Atlantic Continental Shelf: Marine Aggregate, Heavy Minerals, Energy Resources, and Carbon Storage*

1:00 PM, Omni Richmond Hotel Shenandoah H

William L. Lassetter Jr and C. Richard Berquist, Presiding

- 1:00 PM **INTRODUCTORY REMARKS**
- 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.\*; Khandaker, 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**
- 3:00 PM **BREAK**
- 9-6 3:20 PM Myers, Carl W.\*: **POTENTIAL FOR SPECIAL-PURPOSE UNDERGROUND FACILITIES IN GRANITES OF THE SOUTHEASTERN U.S.**
- 9-7 3:40 PM Reid, Jeffrey C.\*; Carpenter, Robert H.; Myers, Carl W.: **UNDERGROUND STORAGE OF REFRIGERATED NATURAL GAS IN GRANITES IN NORTH CAROLINA AND SOUTHERN VIRGINIA**

## 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, Valarie J.\*: **TECTONIC EVOLUTION OF THE WEDOWEE AND EMUCKFAW GROUPS OF THE SOUTHERN BLUE RIDGE OF EAST CENTRAL ALABAMA**
- 10-2** 1:20 PM VanDervoort, Dane S.\*; Ma, Chong; Steltenpohl, Mark G.; Schwartz, Joshua J.: **THE EARLY PALEOZOIC (TACONIC) DADEVILLE 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 <sup>40</sup>AR/<sup>39</sup>AR THERMOCHRONOLOGY, VA–NC–TN**
- 10-6** 2:40 PM Broadwell, 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 ALLEGHANIAN 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.; Tollo, Richard P.: **CONSTRAINTS ON THE TIMING AND DURATION OF THE GRENVILLE OROGENY**
- 10-9** 4:00 PM Southworth, Scott\*; Aleinikoff, John N.; Tollo, Richard P.; Dickinson, Alan P.; Carter, Mark W.: **PROTEROZOIC TECTONIC EVENTS RECORDED IN BLUE RIDGE ROCKS, VIRGINIA–NORTH CAROLINA**

## SESSION NO. 11

**T13. 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.\*; Darroch, Simon A.F.; Rahman, Imran A.: **RECONSTRUCTING PALEOECOLOGY AND FEEDING STRATEGY IN THE 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.; Konecki, Joseph M.: **NEW CRINOIDS FROM THE “KIRKFIELD FAUNA” OF THE BOBCAYGEON 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**

- 11-5** 2:20 PM Wright, David F.\*: **TIME, STRATIGRAPHY, AND FOSSIL PHYLOGENIES: RE-EVALUATING THE USE OF TEMPORAL DATA IN PHYLOGENY RECONSTRUCTION AND TRAIT EVOLUTION**
- 11-6** 2:40 PM Jeffery, David L.\*: **DISTRIBUTION OF CALCAREOUS ALGAE FROM MUSTOE REEF, SILURIAN KEYSER FORMATION, HIGHLAND COUNTY, VIRGINIA**
- 3:00 PM **BREAK**
- 11-7** 3:20 PM Ettensohn, Frank R.\*; Udgata, Devi P.: **THE BORDEN-GRAINGER-FT. PAYNE STRATIGRAPHIC COMPLEX OF THE APPALACHIAN BASIN, CENTRAL KENTUCKY, U.S.A.: THE SYNERGISTIC INFLUENCE OF TECTONICS, PALEOCLIMATE AND PALEOGEOGRAPHY**
- 11-8** 3:40 PM Khandaker, Nazrul I.\*; Sikder, Arif M.; Schleifer, Stanley; Liu, Xin-Chen; Turner, Joseph B. McGee; Londono, Carlos E. Castano: **LITHOFACIES, STRUCTURE, AND GEOCHEMISTRY OF THE EXPOSED SEDIMENTARY ROCKS, ROSENDALE, NEW YORK**
- 11-9** 4:00 PM Lannom, Michael F.\*; Bauer, Jennifer E.; Sumrall, Colin D.: **USING A GIS-BASED MODEL TO IDENTIFY OUTCROPS ALONG ROADWAYS**
- 11-10** 4:20 PM Michelson, Andrew\*; Park Boush, Lisa E.: **SPACE, ENVIRONMENT, AND THEIR JOINT EFFECTS ON COMMUNITY ASSEMBLY OF NON-MARINE OSTRACODES ACROSS A NESTED SUBSET OF LAKES FROM THE BAHAMIAN ARCHIPELAGO**
- 11-11** 4:40 PM Casey, Michelle M.\*: **POSSIBLE OMNIVORY IN THE MURICID GASTROPOD *UROSALPINX CINEREA* FROM LONG ISLAND SOUND, USA**

## AFTERNOON POSTER TECHNICAL SESSIONS

## 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 Gochenour, Jacob Alexander\*; Admassu, Yonathan: **AUTOMATED MAPPING OF SINKHOLES IN KARST TOPOGRAPHY USING AIRBORNE LIDAR-DERIVED DEM**
- 12-3** 3 Stewart, Ryan D.\*; Schreiber, Madeline E.; McLaughlin, Daniel L.: **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 Helms, Tara D.\*; Ficco, Katarina Kosić; Schreiber, Madeline; Thaler, Evan: **EFFECT OF SWINE MANURE ON LIMESTONE DISSOLUTION**

## SESSION NO. 13

**T11. Hydrology and Hydrogeology in the Southeast: Processes, Problems, and Geologic Controls (Posters)**

1:00 PM, Omni Richmond Hotel James River Ballroom

Authors will be present from 2 to 4 PM



Booth #					
13-1	7	Cameron, Cortney*; Brandmayr, Enrico; Vlahovic, Gordana: <b>UPDATES ON SEISMICITY-HYDROLOGY RELATIONSHIPS IN THE EASTERN TENNESSEE SEISMIC ZONE</b>	14-8	22	Stanbury, Matthew*; Diemer, John A.; Rachide, Stephen P.; Moser, Faye L.: <b>ANATOMY OF A MILLPOND DEPOSIT, MILL CREEK, CABARRUS COUNTY, NC</b>
13-2	8	Keily, Elizabeth*; Boehling, Daniel; Sikder, Arif M.; McCallister, S. Leigh; Turner, Joseph B. McGee: <b>AN ANALYSIS OF DISSOLVED ORGANIC CARBON IN THE GROUNDWATER OF VIRGINIA COASTAL PLAIN AQUIFERS</b>	14-9	23	Meyer, M.G.*; Smith, K.L.; Balascio, N.L.; Kaste, J.M.: <b>A SEDIMENTARY RECORD OF ENVIRONMENTAL CHANGE SINCE 1720 FROM LAKE MATOAKA, WILLIAMSBURG, VIRGINIA</b>
13-3	9	Adu Agyemang, Adela B.*; Nandi, Arpita; Luffman, Ingrid; Joyner, Andrew T.: <b>GROUNDWATER NITRATE CONCENTRATION AND ITS RELATION TO LAND COVER AND WATER DEPTH IN BUNCOMBE COUNTY</b>	14-10	24	Panth, Himani*; Watts, Chester F.: <b>COMPARING BATHYMETRIC MAPS FROM 2011 AND 2016 USING SIDE-SCAN SONAR AND UNMANNED AERIAL SYSTEMS AT MOUNTAIN LAKE, GILES COUNTY, VIRGINIA</b>
13-4	10	Vascik, Bryce*; Gannon, J.P.; Kinner, David A.; Lord, Mark: <b>EXAMINING WATER FLOW PATHS AND STREAM RESPONSE OF A DISTURBED HEADWATER CATCHMENT IN THE SOUTHERN APPALACHIAN MOUNTAINS, NC</b>	14-11	25	Pugsley, E.*; Balascio, N.L.; Kaste, J.M.; Morse, L.: <b>INVESTIGATING EVIDENCE FOR STORM-INDUCED OVERWASH DEPOSITS IN A POND ALONG THE JAMES RIVER, VIRGINIA</b>
13-5	11	Hurst, Eliza*; Mann, Aras; Marlor, Don; Ramsey, Sierra; Ross, Andrew; Vascik, Bryce; Lord, Mark; Kinner, David; Gannon, J.P.: <b>CHARACTERISTICS OF GROUNDWATER – STREAM WATER INTERACTION IN A DISTURBED HEADWATER CATCHMENT WITHIN THE SOUTHERN APPALACHIAN MOUNTAINS</b>	14-12	26	Bua-lam, Sequoya A.*; Michelson, Andrew; Leonard-Pingel, Jill S.: <b>DATING LACUSTRINE MOLLUSCAN SUBFOSSIL ASSEMBLAGES USING AAR TECHNIQUES TO ASSIST IN RECONSTRUCTING THE PALEOCOMMUNITIES OF TEMPERATE WISCONSIN LAKES</b>
13-6	12	Steffy, David A.*; Nichols, Alfred C.; Hobbs, Kristi: <b>ENHANCED GRAVITATIONAL DRAINAGE OF CRUDE OIL THROUGH ALABAMA BEACH SAND CAUSED BY THE DISPERSANT COREXIT 9500A</b>	14-13	27	Dannehl, John*; Leonard-Pingel, Jill; Michelson, Andrew; Falls, Emily: <b>ISOTOPIC ANALYSIS OF SEDIMENTS AS A PROXY FOR ENVIRONMENTAL QUALITY IN TEMPERATE LAKES OF WISCONSIN</b>
13-7	13	Tatum, Joshua Michael*; Gannon, J.P.: <b>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</b>	14-14	28	Maher, Sage*; Milewski, Adam M.; Miller, William; Rotz, Rachel R.: <b>URBANIZATION-DRIVEN HYDRAULIC EROSION IN THE GEORGIA PIEDMONT</b>
13-8	14	Miles, Tyler E.*; Peterson, Holly E.; Stracey, Christine; Donati, George L.; Williams, Charles B.: <b>WATER AND SEDIMENT QUALITY ASSESSMENT OF A POTENTIALLY IMPAIRED NORTH CAROLINA STREAM</b>	14-15	29	Spell, Rosalind L.*; Johnson, Bradley G.: <b>THE TIMING AND CAUSE OF GULLY FORMATION IN THE NORTH CAROLINA PIEDMONT</b>
<b>SESSION NO. 14</b>			14-16	30	Fein, Rachel L.*; Barnum, Drew G.; Vulava, Vijay M.: <b>GEOCHEMICAL FATE AND TRANSPORT OF PHARMACEUTICAL CHEMICALS IN NATURAL SOILS</b>
<b>T19. Undergraduate Research II (Posters)</b>			14-17	31	Soto Perez, Jeniffer*; Vulava, Vijay: <b>GEOCHEMICAL FATE AND TRANSPORT OF DIPHENHYDRAMINE IN NATURAL SOILS</b>
1:00 PM, Omni Richmond Hotel James River Ballroom			14-18	32	Richter, Lea*; Vulava, Vijay M.: <b>SORPTION AND TRANSPORT OF VARDENAFIL IN NATURAL SOILS</b>
Authors will be present from 2 to 4 PM			14-19	33	Lawson, Sydney A.*; Luffman, Ingrid; Nandi, Arpita: <b>A COMPARATIVE STUDY TO CALCULATE HYDRAULIC CONDUCTIVITY IN ULTISOLS ON AN EAST TENNESSEE HILLSLOPE</b>
Booth #			14-20	34	Plechacek, Amy K.*; Schreiber, Madeline E.; Chermak, John A.: <b>TRACE ELEMENT ANALYSIS OF PYRITES IN GAS SHALES BY LASER ABLATION ICP-MS: IMPLICATIONS FOR MOBILITY</b>
14-1	15	Dietel, Matthew C.*; Chowns, Timothy M.: <b>THE ROLE OF ROCK SLIDES IN THE DEVELOPMENT OF 'ROCK TOWNS' ON OUTCROPS OF PENNSYLVANIAN SANDSTONE</b>	14-21	35	Harrison, Ashley N.*; Donahoe, Rona J.; Hawkins, Patrick D.: <b>CONTROLS FOR SEDIMENT COMPOSITION VARIATION IN A STREAM IMPACTED BY ACID MINE DRAINAGE</b>
14-2	16	Thomas, John B.*; Ferguson, Terry A.; Ivester, Andrew H.: <b>A COMPARATIVE STUDY OF LEGACY SEDIMENTS IN THE FERGUSON CREEK WATERSHED: 1937 TO 2016</b>	14-22	36	White, Eric*; Wolfe, Amy; Beyer, Emily; Rhodes, Tyler; Showers, Amber J.; VanGundy, Robert D.: <b>APPALACHIAN TRAIL HEALTH AND AIR QUALITY</b>
14-3	17	Earle, Stephanie*; Bartl, Eric; Hudspeth, Reece; Mead, Cody; Ross, Andrew; Winter, Justin; Kinner, David; Lord, Mark; Gannon, J.P.: <b>EROSION AND DEPOSITION IN A DISTURBED WATERSHED: GULLIES, FANS AND TUNNEL FEATURES</b>	14-23	37	Gardner, C. Layton*; Dreher, Leon; Peters, Jacob; Hinkle, Michael P.; Browning, Wayne; VanGundy, Robert D.: <b>MICROCLIMATE GRADIENTS AND THEIR RELATIONSHIPS TO TERRESTRIAL AND SUBTERRANEAN BIODIVERSITY ALONG THE HIGH KNOB LANDFORM, VIRGINIA</b>
14-4	18	Colley, Brooke Elizabeth*; Brooke, James Michael; Black, Alexander; Hilde, Aubrey; Berry, Kimberly; VanGundy, Robert D.: <b>UTILIZING NASA EARTH OBSERVATIONS TO DETECT CHANGES IN ANNUAL SNOWPACK COVERAGE IN INTERMOUNTAIN NATIONAL PARKS</b>	14-24	38	Blackwell, Emma*; Stewart, Kevin; Montanari, Sandro; Mainiero, Maurizio: <b>STRUCTURAL AND KINEMATIC ANALYSIS OF THE CONERO RIVIERA FROM ANCONA TO PORTONOVO, ITALY</b>
14-5	19	Morris, Catherine S.*; Reilly, Caitlin E.; Johnson, Bradley G.; Paradise, Chris: <b>THE EFFECT OF FLASHINESS ON MACROINVERTEBRATE POPULATIONS IN 1<sup>ST</sup> ORDER STREAMS NEAR DAVIDSON, NC</b>	14-25	39	Patterson, Sean D.*; Bush, David M.; Peek, Katie McDowell; Jackson, Chester W.; Young, Robert S.; Weaver, Nicolette: <b>RETURN TO THE HURRICANE IMPACT SCALE: TESTING ITS LARGE-SCALE APPLICATION</b>
14-6	20	Webster, Claire*; Milewski, Adam M.; Rasmussen, Todd C.; Dowd, John; Rotz, Rachel R.; Ertel, Janet; Faustini, John M.; Graves, Grant: <b>IMMEDIATE AND LONG TERM THREATS TO WATER RESOURCE AVAILABILITY AT FELSANTHAL NATIONAL WILDLIFE REFUGE</b>	14-26	40	McCone, Erin*; Monaghan, Kelly; McGarvey, Aaron; Childers, Daniel P.: <b>STREAM PROJECT BY PHYSICAL GEOLOGY HONOR STUDENTS AT DELAWARE COUNTY COMMUNITY COLLEGE</b>
14-7	21	Counts, Austin*; Phillips, Andrew; Young, Sydney; Stevens, Christine; VanGundy, Robert D.: <b>RIPARIAN LAND COVER CHANGE IN THE LOWER GRAND CANYON, 1998 TO 2016</b>	14-27	41	Grabinski, Aaron M.*; McGary, R. Shane: <b>INTRODUCING MATLAB AND THE NEXT GENERATION SCIENCE STANDARDS TO A HIGH SCHOOL EARTH SCIENCE CURRICULUM</b>

## SESSION NO. 14

- 14-28 42 Treon, Morgan E.\*; Johnson, Elijah T.; Anderson, Sarah L.; Whitmeyer, Shelley J.: **EFFECTIVENESS OF THE AUGMENTED REALITY SANDBOX FOR INFORMAL EDUCATION**

**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**

### 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 <sup>26</sup>Al-<sup>10</sup>Be 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.: **PALEOLIQUEFACTION 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, Qimin; Witt, Anne C.; Shah, Anjana K.: **THE 2011 MINERAL, VIRGINIA, EARTHQUAKE TRIGGERED SHALLOW AFTERSHOCKS ON FAVORABLY ORIENTED STRUCTURES IN AREAS OF POSITIVE STATIC COULOMB STRESS CHANGE**

- 16-5 9:40 AM Counts, Ronald\*; Powars, David S.; Schindler, J. Stephen; Horton, J. Wright; Landacre, Bryan D.: **INVESTIGATING FAULTED TERRACE DEPOSITS AT THE SMITHSONIAN NATIONAL ZOO, WASHINGTON, D.C**
- 10:00 AM **BREAK**
- 16-6 10:20 AM Adams, C. Scott\*; Hawkes, Andrea D.; Engelhart, Simon E.; Horton, Benjamin P.: **FORAMINIFERAL ESTIMATE OF COSEISMIC SUBSIDENCE DURING THE AD 1700 MEGATHRUST EARTHQUAKE FROM SOUTHERN WASHINGTON**
- 16-7 10:40 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. 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 Kingsland; Vulava, Vijay M.: **SURFACE WATER CONTAMINATION FROM URBAN STORMWATER RUNOFF IN CHARLESTON, SC**
- 18-3 8:40 AM Cockerill, Kristan\*; Anderson, William; Groothuis, 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.\*; Hepinstall-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.\*; Donahoe, 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**

### SESSION NO. 18

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

8:00 AM, Omni Richmond Hotel Shenandoah H

Christopher S. Swezey and C. Richard Berquist, Presiding

- 8:00 AM **INTRODUCTORY REMARKS**
- 19-1 8:20 AM Sikder, Arif M.\*; Horton, J. Wright: **THE MECHANISM OF FORMATION OF ALTERATION RINDS ON CLASTS IN THE CRETACEOUS POTOMAC FORMATION, PRINCE GEORGE, VIRGINIA**
- 19-2 8:40 AM Stadelman, Steve A.\*: **PRELIMINARY CHARACTERIZATION AND MAPPING OF LATE CENEZOIC MARINE-ESTUARINE SEDIMENTS IN THE UPPER TAR RIVER WATERSHED IN THE FALL ZONE OF NORTH CAROLINA**
- 19-3 9:00 AM Diemer, John A.\*; Rich, Frederick J.; Yankech, Matthew; McLean, Rufus C.; Bobyarchick, Andy R.; Eppes, Martha C.: **POLLEN 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 Haynes, John T.\*: **PETROGRAPHY OF LIMESTONE OF THE EOCENE PINEY POINT FORMATION FROM THE BANBURY CROSS COREHOLE (USGS WELL 57G128), YORK COUNTY, VIRGINIA**

- 19-5** 9:40 AM Wehmiller, J.F.\*; Ramsey, Kelvin W.; Thiel, E. Robert: **PAIRED RACEMIZATION AND RADIOCARBON ANALYSIS OF PLEISTOCENE AND HOLOCENE SHELLS, US ATLANTIC COASTAL PLAIN: IMPLICATIONS FOR SHELL GEOCHRONOLOGY, PLEISTOCENE SEA LEVEL HISTORY, AND PALEOCLIMATE**
- 10:00 AM **BREAK**
- 19-6** 10:20 AM Shen, Zhixiong\*; Wright, Eric; Loh, Benjamin; Mauz, Barbara: **RESOLVING THE AGE CONTROVERSY OF PLEISTOCENE COASTAL DEPOSITS IN THE LOWER COASTAL PLAIN IN NORTHEASTERN SOUTH CAROLINA**
- 19-7** 10:40 AM Swezey, Christopher S.\*; Fitzwater, Bradley A.; Whittecar, G. Richard: **EOLIAN SEDIMENTS AND PALEOWIND BEHAVIOR IN THE SOUTHEASTERN UNITED STATES DURING THE LAST GLACIAL MAXIMUM**
- 19-8** 11:00 AM Ramsey, Kelvin W.\*; Tomlinson, Jaime L.: **SEA LEVEL AND CLIMATE HISTORY OF THE DELMARVA PENINSULA OVER THE PAST 40,000 YEARS: A RADIOCARBON DATE PERSPECTIVE**
- 19-9** 11:20 AM Bliley, Daniel\*: **COARSE FRAGMENT RE-DISTRIBUTION IN THE GENESIS OF SOME FALL ZONE CAROLINA BAYS**
- 19-10** 11:40 AM Davias, Michael\*: **THE CAROLINA BAYS OF RIDGE SPRING, SC**
- 20-2** 2 Harstad, Rylleigh P.\*; Whitmore, John P.; Steltenpohl, Mark G.; Kath, Randy L.; Tefend, Karen S.; Schwartz, Joshua J.: **GEOLOGICAL INVESTIGATIONS OF THE LONG ISLAND CREEK GNEISS WITHIN THE SOUTHERNMOST BREVARD SHEAR ZONE, ALABAMA AND GEORGIA**
- 20-3** 3 VanDervoort, Dane S.\*; Harstad, Rylleigh P.; Ma, Chong; Steltenpohl, Mark G.: **UPDATE ON 1:24,000 GEOLOGIC MAPPING OF THE BREVARD ZONE AND RELATED STRUCTURES IN EAST-CENTRAL ALABAMA**
- 20-4** 4 Fraser, Kelley\*; Casale, Gabriele; Levine, Jamie S.F.: **IMPLICATIONS FOR THE TIMING OF DOME FORMATION IN THE TALLULAH FALLS DOME, NORTHEAST GEORGIA**
- 20-5** 5 Isard, Sierra J.\*; Cattanach, Bart L.; Bozdog, G. Nicholas; Wooten, Richard M.: **A NEW 1:24,000-SCALE BEDROCK GEOLOGIC MAP OF THE MONTREAT 7.5-MINUTE QUADRANGLE, BUNCOMBE, MCDOWELL, AND YANCEY COUNTIES, NC**
- 20-6** 6 Cattanach, Bart L.\*; Bozdog, G. Nicholas; Isard, Sierra J.; Wooten, Richard M.: **A NEW 1:24,000-SCALE BEDROCK GEOLOGIC MAP OF THE PEA RIDGE 7.5-MINUTE QUADRANGLE, RUTHERFORD AND POLK COUNTIES, NORTH CAROLINA**
- 20-7** 7 Walsh, Kevin\*; Larkin, Emma A.; Moecher, David P.: **GEOCHRONOLOGICAL, GEOCHEMICAL, AND PETROLOGICAL CONSTRAINTS ON THE ORIGIN OF THE CARTOOGEC HAYE TERRANE, CLYDE-DELLWOOD AREA, WESTERN NORTH CAROLINA: IMPLICATIONS FOR THE LATE PRECAMBRIAN TO EARLY PALEOZOIC EVOLUTION OF THE EASTERN LAURENTIAN MARGIN**
- 20-8** 8 DeYoung, Samuel G.\*; Peterson, Virginia L.; Rahl, Jeffrey M.: **USING OLIVINE LPO AND MISORIENTATION ANALYSIS TO CONSTRAIN DEFORMATION AND EMPLACEMENT CONDITIONS OF THE BUCK CREEK ULTRAMAFIC COMPLEX, BLUE RIDGE PROVINCE, NORTH CAROLINA**
- 20-9** 9 Zucker, Samuel L.\*; Johanesen, Katharine; Ianno, Adam: **DEFORMATION IN THE EDMONDS ULTRAMAFIC BODY OF NORTH CAROLINA AND VIRGINIA**
- 20-10** 10 Merschat, Arthur\*; McAleer, Ryan J.: **THE LINVILLE FALLS FAULT: MICROTEXTURAL EVIDENCE FOR OSCILLATION BETWEEN DUCTILE AND BRITTLE CONDITIONS**
- 20-11** 11 Scharman, Mitchell R.\*: **A NEWLY RECOGNIZED THRUST FAULT AND THE BYLLESBY-FALLS FAULT ZONE, IRON MOUNTAINS, VIRGINIA: INSIGHTS INTO STRUCTURAL PROGRESSION IN THE BLUE RIDGE-VALLEY AND RIDGE TRANSITION**
- 20-12** 12 McClellan, Elizabeth\*: **BASIN INVERSION OF NEOPROTEROZOIC VOLCANO-SEDIMENTARY STRATIGRAPHY IN THE MOUNT ROGERS REGION, SW VA**
- 20-13** 13 Henika, William S.\*: **INSIGHTS ON STRUCTURAL CONTROL OF MESOPROTEROZOIC MAGMATIC MINERALIZATION, NEOPROTEROZOIC RIFTING AND HYPOTHETICAL TERRANE BOUNDARIES WITHIN THE VIRGINIA BLUE RIDGE OVERTHRUST PROVINCE NEAR ROANOKE, VIRGINIA**
- 20-14** 14 Peach, Brandon Tyler\*; Blake, David E.; LaMaskin, Todd A.: **ZIRCON GEOCHRONOLOGY OF THE RALEIGH TERRANE IN THE NORTH CAROLINA EASTERN PIEDMONT**
- 20-15** 15 Regan, Sean P.\*; Carter, Mark W.; McAleer, Ryan J.; Spears, David B.: **NEW SHRIMP U-PB ZIRCON DATA FROM THE CENTRAL VIRGINIA PIEDMONT**
- 20-16** 16 Parker, Mercer\*; Carter, Mark W.; McAleer, Ryan J.; Burton, William C.; Johnson, Elizabeth A.: **TEXTURAL ANALYSIS OF AMPHIBOLITES AND SCHIST FROM THE CENTRAL VIRGINIA SEISMIC ZONE: CONSTRAINING THE PALEOZOIC TECTONIC FRAMEWORK IN A SEISMICALLY ACTIVE REGION**
- 20-17** 17 Girven, Erin E.\*; Owens, Brent E.: **EVALUATING POSSIBLE HIGH-P AND T AMPHIBOLITES IN THE GOOCHLAND TERRANE, PIEDMONT PROVINCE, VIRGINIA**

## 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: **INVESTIGATION OF THE SHALLOW HYDROGEOLOGIC SYSTEM ON ST. CATHERINES ISLAND, GEORGIA**
- 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 FLORIDAN 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, Madeline 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: <b>COMPILATION OF SURFICIAL GEOLOGIC MAPPING IN THE LOUISVILLE METROPOLITAN AREA</b>                                                                                                                           |
| 21-2  | 19      | Thomas, William A.*; Irvin, G. Daniel; Drahovzal, James A.: <b>THE ANNISTON TRANSVERSE ZONE IN THE WELLINGTON 7.5-MINUTE QUADRANGLE, APPALACHIAN THRUST BELT, ALABAMA</b>                                                                           |
| 21-3  | 20      | Hatcher, Robert D.*; Wunderlich, Andrew L.; Strissel, Morgan Marie: <b>STRUCTURE AND DETAILED GEOLOGIC MAP OF THE NORTHERN PORTION OF THE DUMPLIN VALLEY FAULT ZONE</b>                                                                             |
| 21-4  | 21      | Sommer, Patrick*; Ray, Daniel; Bailey, Christopher M.: <b>STRUCTURAL ANALYSIS OF THE BOLAR ANTICLINE AT SOUNDING KNOB, VALLEY &amp; RIDGE PROVINCE, HIGHLAND COUNTY, VIRGINIA</b>                                                                   |
| 21-5  | 22      | Dubaz, Adam*; Allison, David T.: <b>1:24K MAPPING AND U/TH GEOCHEMICAL SURVEY OF A SEGMENT OF THE EASTERN BLUE RIDGE BELT IN ALABAMA</b>                                                                                                            |
| 21-6  | 23      | Bozdog, G. Nicholas*; Cattanach, Bart L.: <b>A NEW MULTILAYERED GEOLOGIC BEDROCK ARCGIS ONLINE WEB MAP OF WESTERN NORTH CAROLINA</b>                                                                                                                |
| 21-7  | 24      | Thompson, Hayley N.*; Merschat, Arthur J.; Walsh, Gregory J.; Southworth, Scott: <b>DIGITIZATION OF GEOLOGIC MAPS: PRESERVATION AND INTERPRETATION OF DR. DOUGLAS RANKIN'S LEGACY MAPS OF THE MOUNT ROGERS AREA, VA-NC-TN</b>                       |
| 21-8  | 25      | Seymour, Bryce*; Ranson, William A.; Garihan, John M.: <b>DEFORMATION AND METAMORPHISM IN THE FINGERVILLE EAST 7.5-MINUTE QUADRANGLE, SPARTANBURG COUNTY, SOUTH CAROLINA</b>                                                                        |
| 21-9  | 26      | Donohue, Mary K.*; Sauter, Zachary J.; Bailey, Christopher M.: <b>THE GEOLOGY OF THE JAMES RIVER STATE PARK, EASTERN BLUE RIDGE/WESTERN PIEDMONT, CENTRAL VIRGINIA</b>                                                                              |
| 21-10 | 27      | Carter, Mark W.*; Burton, William C.; McAleer, Ryan J.; Regan, Sean P.; Spears, David B.: <b>PROGRESS OF USGS BEDROCK GEOLOGIC MAPPING IN THE CENTRAL VIRGINIA SEISMIC ZONE</b>                                                                     |
| 21-11 | 28      | Martin, Steven L.*; Curl, Douglas C.: <b>DISSEMINATION OF DETAILED GEOLOGIC MAPPING TO THE PUBLIC: A CASE STUDY OF FLOYDS FORK IN THE FISHERVILLE 7.5-MINUTE QUADRANGLE</b>                                                                         |
| 21-12 | 29      | Lawrence, Craig*; Bradley, Philip J.: <b>GEOLOGIC MAPPING IN THE GREENSBORO, NC AREA: CITIZEN SCIENCE CONTRIBUTIONS TO UNDERSTANDING THE GEOLOGY OF THE AREA</b>                                                                                    |
| 21-13 | 30      | Rojas, Alexis*: <b>MAPPING THE UNKNOWN NEIGHBORHOOD: A SIMPLE APPROACH COMBINING TRADITIONAL GEOLOGICAL MAPS AND REMOTE SENSING DATA</b>                                                                                                            |
| 21-14 | 31      | Bradley, Philip J.*; Marciniak, Katherine J.; Caldwell, Craig: <b>GROUNDWATER ARSENIC SUSCEPTIBILITY MAP OF ORANGE COUNTY: COUPLING DETAILED GEOLOGIC DATA AND GROUNDWATER QUALITY DATA TO MODEL ARSENIC SUSCEPTIBILITY</b>                         |
| 21-15 | 32      | Tefend, Karen S.*; Kath, Randy L.: <b>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</b> |

## 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.*: <b>HURRICANE MATTHEW'S MICROSEISMIC IMPRESSION ON CHATTANOOGA</b>                                                                                                                           |
| 22-2 | 34      | Ebersole, Sandy*; Keiser, Ken: <b>INTEGRATED GEOSPATIAL DISTRIBUTION SYSTEMS FOR DISASTER EVENT DATA</b>                                                                                                        |
| 22-3 | 35      | Bechtel, Randy*; Fuerst, Sam I.: <b>FOSTERING FORMAL AND INFORMAL GEOSCIENCE EDUCATION IN NORTH CAROLINA</b>                                                                                                    |
| 22-4 | 36      | Gardner, Eleanor E.*; Lockner, Cindy; Cronin, Bonnie; Brown, Russell D.: <b>IMPROVING ENGAGEMENT OF MINORITY K-12 STUDENTS IN PALEONTOLOGICAL OUTREACH AND EDUCATION INITIATIVES: A CASE STUDY FROM FLORIDA</b> |
| 22-5 | 37      | Bess, Maddie*; Jovanelly, Tamie J.: <b>EDUCATION AND OUTREACH: DISCUSSING THE CAUSE AND EFFECT RELATIONSHIP OF NATURAL GAS FRACTURING WITH NORTHWESTERN GEORGIA COMMUNITIES</b>                                 |
| 22-6 | 38      | Alamooti, Moones*; Aydin, Adnan: <b>A NEW OPTIMIZATION ALGORITHM IMPROVING REGULARIZED MIGRATION PROCESS IN SEISMIC IMAGING</b>                                                                                 |

## SESSION NO. 23

**Petrology 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, Viktoras W.: <b>GEOCHEMICAL DATABASE WITH GENERALIZED INTERPRETATION FOR IGNEOUS ROCKS FROM THE CENTRAL APPALACHIANS OF VIRGINIA, MARYLAND, AND PENNSYLVANIA</b>                        |
| 23-2 | 40      | Hughes, K. Stephen*; Smith, Robert C.; Miller, Brent V.; Skema, Viktoras W.: <b>THE ORDOVICIAN GREEN SPRINGS PLUTON OF CENTRAL VA: POSSIBLE SOURCE OF GLACIOGENIC COBBLES IN THE DEVONIAN ROCKWELL FORMATION OF PA, MD, AND WV?</b> |
| 23-3 | 41      | Griffin, Kayla M.*; Hames, Willis: <b>THE PRE-MIOCENE REGIONAL EXHUMATION HISTORY OF DEEP CRUST EXPOSED IN THE RUBY MOUNTAINS METAMORPHIC CORE COMPLEX, NEVADA</b>                                                                  |
| 23-4 | 42      | Cato, Michael J.*; Fagan, Amy L.: <b>AN OVERVIEW OF THE TYPE II CHONDRULES IN THE CM CHONDRILITE JBILET WINSELWAN</b>                                                                                                               |

## AFTERNOON ORAL TECHNICAL SESSIONS

## 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 | <b>INTRODUCTORY REMARKS</b>                                                                                                                      |
| 24-1 | 1:20 PM | Galgano, Francis*: <b>GEOGRAPHY, GEOLOGY, AND THE AMERICAN CIVIL WAR</b>                                                                         |
| 24-2 | 1:40 PM | Whisonant, Robert C.*: <b>BAY, RIVER, AND VALLEY: HOW VIRGINIA'S GEOLOGY AND PHYSIOGRAPHY IMPACTED CAMPAIGNS AND BATTLES IN THE CIVIL WAR</b>    |
| 24-3 | 2:00 PM | Henderson, Stephen W.*: <b>AN ANTICLINAL TRAP FOR THE UNION ARMY: HOW GEOLOGY INFLUENCED THE APPROACH TO THE CIVIL WAR BATTLE OF CHICKAMAUGA</b> |

- 24-4** 2:20 PM Neubaum, John C.\*; Keen, Richard C.; Inners, Jon D.; Lee, Morgan B.: **STUART, CUSTER, KILPATRICK AND FARNSWORTH: 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**
- 24-5** 2:40 PM Hippensteel, Scott P.\*: **SEDIMENTARY GEOLOGY AND THE EFFECTIVENESS OF CONFEDERATE TEMPORARY COASTAL FORTIFICATIONS**
- 3:00 PM **BREAK**
- 24-6** 3:20 PM Alexander, Clark\*; Peffer, Colby: **A MODERN GEOLOGIC HISTORY OF COCKSPUR ISLAND AND FORT PULASKI, GA**
- 24-7** 3:40 PM Andrews, William\*: **HIDING IN PLAIN SIGHT: GEOLOGIC CONTEXT OF THE CAMP NELSON CIVIL WAR DEPOT IN CENTRAL KENTUCKY**
- 24-8** 4:00 PM Bailey, Christopher M.\*; Berquist, C.R.: **SCARPS, RIDGES, AND SWALES: THE ROLE OF COASTAL PLAIN GEOLOGY AT THE BATTLE OF GREEN SPRING, AMERICAN REVOLUTION**

## 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\*: **CLI-FI AT 2Y: LEARNING GEOSCIENCE THOUGH CLIMATE-CHANGE FICTION**
- 25-2** 1:20 PM Heller, Matthew J.\*: **USING GROUP PRESENTATIONS IN A LARGE INTRODUCTORY GEOLOGY 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.\*; Sikder, Arif 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, Brittani 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**
- 3:00 PM **BREAK**
- 25-7** 3:20 PM Forcino, Frank L.\*; Salter, Rachel L.: **ARE OPEN ENDED QUESTIONS WORTH THE EXTRA TIME? A COMPARISON OF OPEN-ENDED, MULTIPLE CHOICE, AND LIKERT SCALE ITEMS FOR ASSESSING THE GENERAL PUBLIC'S UNDERSTANDING OF EVOLUTION**
- 25-8** 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**
- 25-9** 4:00 PM Salter, Rachel L.\*: **RAPID RESPONSE RUBRIC (3R): A NOVEL TOOL FOR INSTRUCTOR-GENERATED FEEDBACK**
- 25-10** 4:20 PM Stoddard, Edward F.\*; Bradley, Philip J.: **GEOLOGY OF WAKE COUNTY, NC: A VIEW FROM THE GREENWAYS**
- 4:40 PM **CONCLUDING REMARKS**

## 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 Kinner, Mark Lord, Jerry Miller and E. Randolph McFarland, Presiding

- 26-1** 1:00 PM Gannon, J.P.\*; Kinner, David; Lord, Mark; Styers, 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\*; Kinner, 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 APPALACHIAN MOUNTAINS**
- 3:00 PM **BREAK**
- 26-7** 3:20 PM Harris, Claire Lee Otelia\*; Gu, Chuanhui: **HYDROGRAPH SEPARATION TO DETERMINE STORM RUNOFF GENERATION IN AN URBAN WATERSHED IN THE SOUTHERN APPALACHIAN MOUNTAINS**
- 26-8** 3:40 PM Wilcox, Jeffrey D.\*; Warwick, Adam: **HYDROLOGIC RESPONSE TO FIRE AND DROUGHT IN A SOUTHERN APPALACHIAN WETLAND**
- 26-9** 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**
- 26-10** 4:20 PM Fedders, Emily R.\*; Anderson, William P.: **EFFECTS OF URBANIZATION ON AIR TEMPERATURE/WATER TEMPERATURE RELATIONSHIP IN TWO SMALL, MOUNTAIN STREAMS**
- 26-11** 4:40 PM Johnson, Bradley G.\*; Morris, Catherine S.; Reilly, Caitlin E.; Preston, Abigail C.; Macek, Carolyn L.: **INITIAL FINDINGS FROM A NETWORK OF STREAM GAUGES ON HEADWATER STREAMS IN THE NORTH CAROLINA PIEDMONT**

## 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. 27

- 27-3** 1:40 PM Sparks, Stephanie A.\*; Thigpen, J. Ryan; Lee, Jeff: **EVALUATING GNEISS DOME THERMAL EVOLUTION USING 2-D COUPLED THERMOMECHANICAL FINITE-ELEMENT MODELING**
- 27-4** 2:00 PM Mitchell, Nicholas\*; Heimann, Adriana: **TRACE-ELEMENT COMPOSITION OF GARNET AS A TOOL TO DISTINGUISH PEGMATITE FAMILIES**
- 27-5** 2:20 PM Burk, Samantha R.\*; Moecher, David P.; Samson, Scott D.: **ZIRCON AS A PROXY FOR "TAKING THE TEMPERATURE" OF GRANITES: AN EXAMPLE USING ZIRCON THERMOMETRY APPLIED TO GRENVILLIAN MID-CRUSTAL MAGMAS IN THE BLUE RIDGE PROVINCE, VIRGINIA**
- 27-6** 2:40 PM Aylor, Joseph\*; Beard, James; Potter, Christopher J.: **MICROSTRUCTURES RECORDING BRITTLE OVERPRINT ON DUCTILE STRUCTURES IN THE FOOTWALL OF THE CHATHAM FAULT - STRUCTURAL CONTROL ON THE COLES HILL URANIUM DEPOSIT, GRETN, VA**
- 3:00 PM **BREAK**
- 27-7** 3:20 PM Roig, Claudia I.\*; Hughes, K. Stephen; Miller, Brent V.: **AGE AND TECTONIC SIGNIFICANCE OF THE ELK HILL VOLCANIC COMPLEX AND PEGMATITE BELT, CENTRAL APPALACHIAN PIEDMONT, VIRGINIA, USA**
- 27-8** 3:40 PM Owens, Brent E.\*; Carter, Elizabeth S.; Garry, W. Brent: **METAMORPHOSED MANTLE XENOLITHS IN THE MAFIC TO ULTRAMAFIC DIANA MILLS PLUTON, PIEDMONT PROVINCE, VIRGINIA**
- 27-9** 4:00 PM Beguelin, Paul\*; Bizimis, Michael; McIntosh, Eleanor Carmen; Cousens, Brian; Clague, David A.: **HF ISOTOPE SYSTEMATICS OF REJUVENATED HAWAIIAN MAGMAS**

## AFTERNOON POSTER TECHNICAL SESSIONS

### SESSION NO. 28

#### ***T5. Beaches, Barriers, and Marshes of the Southeast Coast: Dynamic Systems in a Changing Climate (Posters)***

1:00 PM, Omni Richmond Hotel James River Ballroom

Authors will be present from 2 to 4 PM

- Booth #
- 28-1** 1 Deemy, James B.\*; Hepinstall-Cymerman, Jeffrey; Kirkman, L. Katherine; Rasmussen, Todd C.: **HYDROLOGIC DESCRIPTION OF THIRTY-ONE ISOLATED WETLANDS EMBEDDED IN A LONGLEAF PINE / WIRE GRASS FOREST: INFLUENCE OF CONNECTIVITY TO REFERENCE CONDITION AND AGRICULTURAL STORM RUNOFF**
- 28-2** 2 Dibble, Michael Samuel\*; Hladik, Christine M.: **EXAMINATION OF SALT MARSH DIEBACK DEVELOPMENT AND RECOVERY WITH THE USE OF HISTORICAL AERIAL PHOTOGRAPHY AND ENVIRONMENTAL AND CLIMATIC CONDITIONS**
- 28-3** 3 Johnson, Christine\*; Fenster, Michael S.: **ANALYZING HISTORICAL CHANGES TO TIDAL INLET AND TIDAL DELTA GEOMETRIES ALONG THE VIRGINIA BARRIER ISLANDS: A TEST OF THE RUNAWAY BARRIER ISLAND TRANSGRESSION MODEL**
- 28-4** 4 Shawler, Justin L.\*; Raff, Jessica L.; Hein, Christopher J.: **HOLOCENE BACKBARRIER DEVELOPMENT IN RESPONSE TO SEA-LEVEL RISE, ANTECEDENT TOPOGRAPHY, AND BARRIER GEOMORPHIC CHANGE: PARRAMORE AND CEDAR ISLANDS, VIRGINIA'S EASTERN SHORE**

### SESSION NO. 29

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

1:00 PM, Omni Richmond Hotel James River Ballroom

Authors will be present from 2 to 4 PM

- Booth #
- 29-1** 5 Aleman Gonzalez, Wilma B.\*; Self-Trail, Jean M.; Harris, W. Burleigh; Farrell, Kathleen M.; Moore, Jessica Pierson: **DEPOSITIONAL SEQUENCE STRATIGRAPHY OF CENOMANIAN TO SANTONIAN SEDIMENTS, CAPE FEAR ARCH, NORTH CAROLINA COASTAL PLAIN**
- 29-2** 6 Parker, Mercer\*: **GEOLOGY OF THE UPPER FLORIDAN AQUIFER: A LITHOLOGIC, BIOSTRATIGRAPHIC, AND PETROGRAPHIC ANALYSIS OF THREE CORES IN THE GREATER SAVANNAH REGION**
- 29-3** 7 Occhi, Marcie\*; Strand, Jessi M.; Berquist, C.R.: **MIOCENE-PLIOCENE MARINE SEDIMENT PRESERVATION IN THE FALL ZONE: RESULTS FROM 1:24,000 SCALE MAPPING NEAR PETERSBURG, VIRGINIA**
- 29-4** 8 Thornton, Erik\*; Farrell, Kathleen M.: **SEDIMENTARY FACIES AND BOUNDING SURFACES ASSOCIATED WITH THE EARLY PLEISTOCENE SURRY PALEOSHORELINE COMPLEX, COASTAL PLAIN, NORTH CAROLINA**
- 29-5** 9 Harris, M. Scott\*; Wright, Eric E.; Shen, Zhixiong; Nelson, Douglas D.: **LANDSCAPE EVOLUTION AND SURFICIAL GEOLOGY OF A SIGNIFICANT PLEISTOCENE BARRIER SEQUENCE: HORRY, GEORGETOWN, AND PORTIONS OF BERKELEY, CHARLESTON, FLORENCE, MARION AND WILLIAMSBURG COUNTIES, SOUTH CAROLINA (USA)**
- 29-6** 10 Jahan, Shakura\*; Wang, Yang; Liu, Jin; Means, Harley; Donoghue, Joseph F.: **RECONSTRUCTION OF PALEOSTORM HISTORY USING GEOCHEMICAL PROXIES ARCHIVED IN THE SEDIMENTS OF A COASTAL LAKE IN NORTH FLORIDA**
- 29-7** 11 Wehmiller, J.F.\*: **ON-LINE DATABASES FOR ATLANTIC COASTAL PLAIN AMINOSTRATIGRAPHIC DATA**

### SESSION NO. 30

#### ***T20. Clastics, Carbonates, and Soils (Posters)***

1:00 PM, Omni Richmond Hotel James River Ballroom

Authors will be present from 2 to 4 PM

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- 30-1** 12 Patterson, Justyn A.\*: **RESTORING THE COASTAL PRAIRIE: A SOIL STUDY OF THE TEXAS CITY PRAIRIE PRESERVE**
- 30-2** 13 Simmons, Jack C.\*; Holland, Steven M.: **SANDSTONE PROVENANCE IN THE JURASSIC SUNDANCE SEAWAY, WYOMING, USA**
- 30-3** 14 McCormick, Henry\*; Vogt, Peter; Pecha, Mark; Chiarenzelli, Jeffrey: **DETRITAL ZIRCON U-PB GEOCHRONOLOGY OF SANDS FROM AND NEAR THE CALVERT CLIFFS, MARYLAND**
- 30-4** 15 Edwards, Cole T.\*; Fike, David A.; Saltzman, Matthew R.; Lu, Zunli:  **$\delta^{13}\text{C}$ ,  $\delta^{34}\text{S}$ , AND I/CA EVIDENCE FOR ANOXIA AT AN EARLY ORDOVICIAN (TREMADOCIAN) MASS EXTINCTION**
- 30-5** 16 Clay, Czarinna K.\*; Hillis, Kayla R.; Wolak, Jeannette M.: **BUMPED, BRUISED AND BROKEN: MISSISSIPPIAN CRINOIDS AS INDICATORS OF PALEOFLOW CONDITIONS**
- 30-6** 17 Wolak, Jeannette M.\*; Koehl, Daniel; Huskey, Sidney; Stapor, Frank: **PORE SPACES TO P-WAVES: RECONSTRUCTING PALEOCHANNEL GEOMETRIES ON A MIDDLE MISSISSIPPIAN SLOPE**
- 30-7** 18 Jones, Michael L.\*: **A SEDIMENTOLOGICAL CASE FOR ORNITHOGENIC GASTROLITHS AT THE GRAY FOSSIL SITE, EAST TENNESSEE**

**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

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- 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, Marci 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.: **PALEOENVIRONMENTAL 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 HSPDP CORE SAMPLES FROM THE NORTHERN AWASH: RECORD OF AN EAST AFRICAN PALEOLAKE 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.; Adediji, 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 Weiserbs, Benjamin\*; Eppes, Martha Cary: **THE MORPHOLOGY AND HISTORY OF EXFOLIATION ON PLUTONIC DOMES IN THE SOUTHEASTERN UNITED STATES**
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- 31-9 27 Jain, Jinesh C.\*; Bhatt, Chet R.; Goueguel, Christian L.; Edenborn, Harry M.; McIntyre, Dustin L.: **A RAPID METHOD FOR THE CHEMICAL ANALYSIS OF CHARCOAL IRON FURNACE SLAGS**

**SESSION NO. 32****Paleontology, Paleoecology, and Taphonomy (Posters) (Paleontological Society)**

1:00 PM, Omni Richmond Hotel James River Ballroom

Authors will be present from 2 to 4 PM

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

- 32-2 29 Thompson, Carmi Milagros\*; Ramsey, Kelvin W.; Lockwood, Rowan: **SURVEY OF MOLLUSCAN FAUNA FROM THE OFFSHORE MID-ATLANTIC UNITED STATES**
- 32-3 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**
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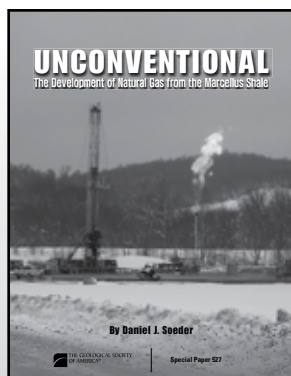
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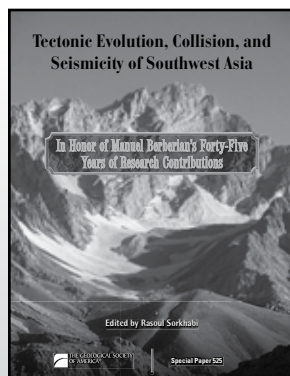
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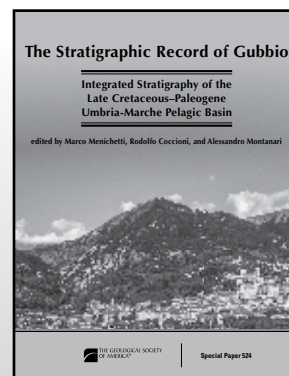
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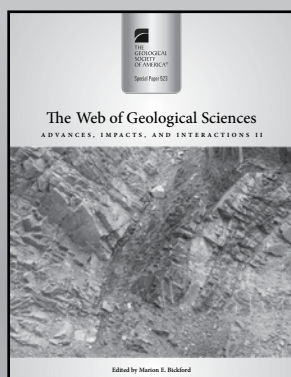
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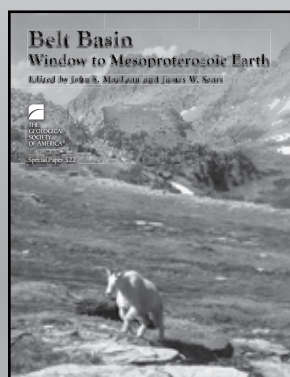
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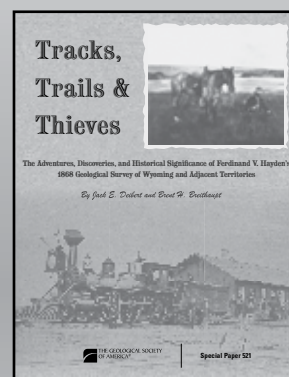
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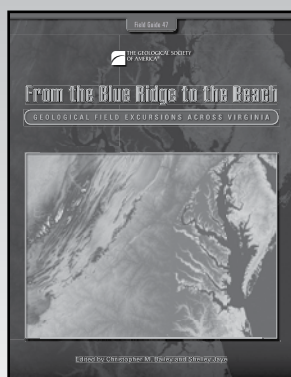
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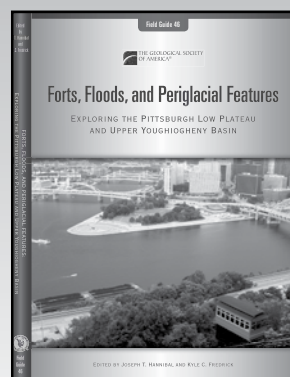
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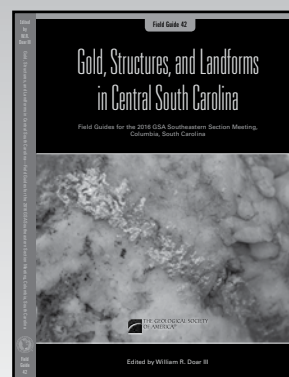
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