

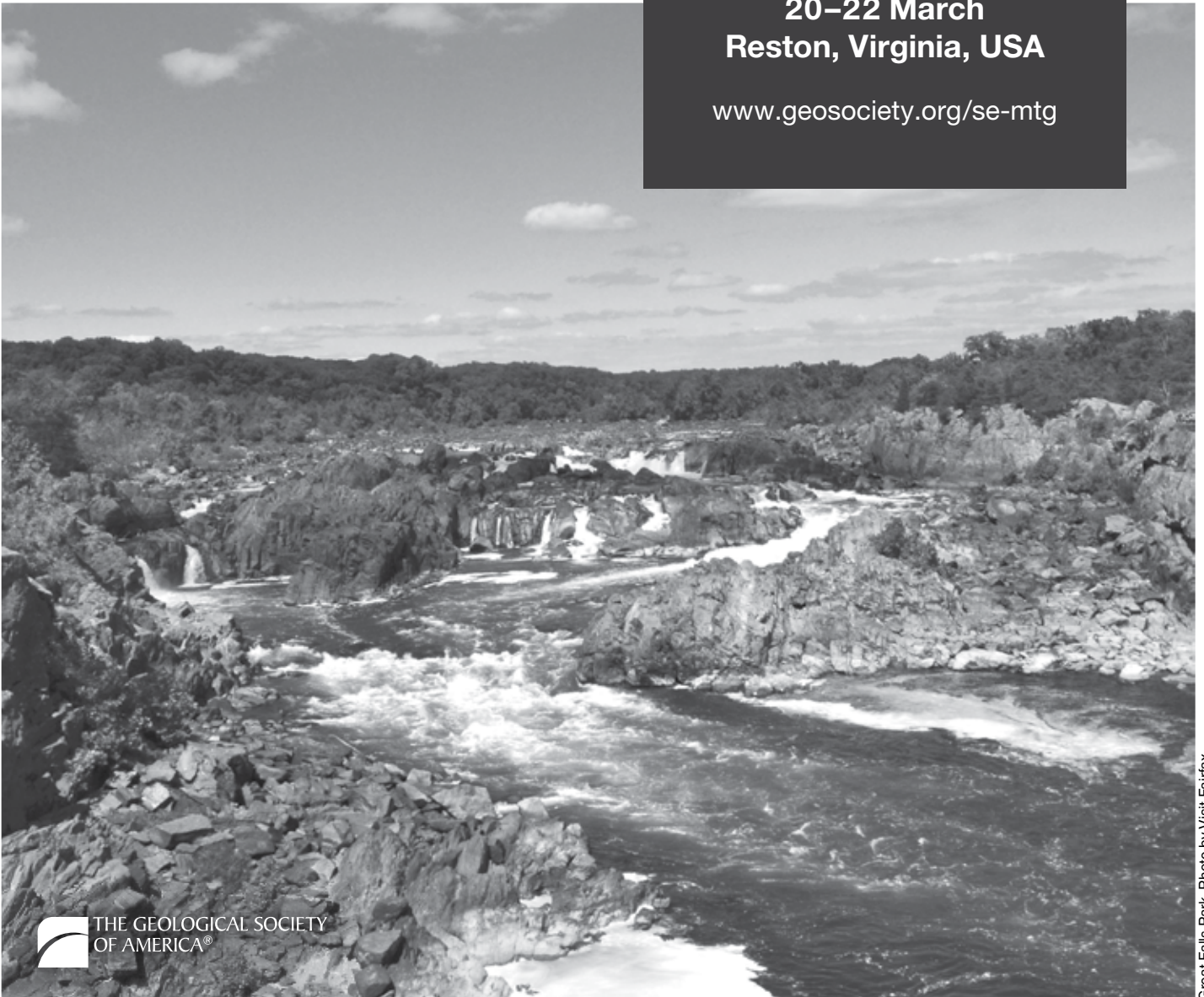
2020 Program

VOL. 52, NO. 2

Joint Southeastern- Northeastern

20–22 March
Reston, Virginia, USA

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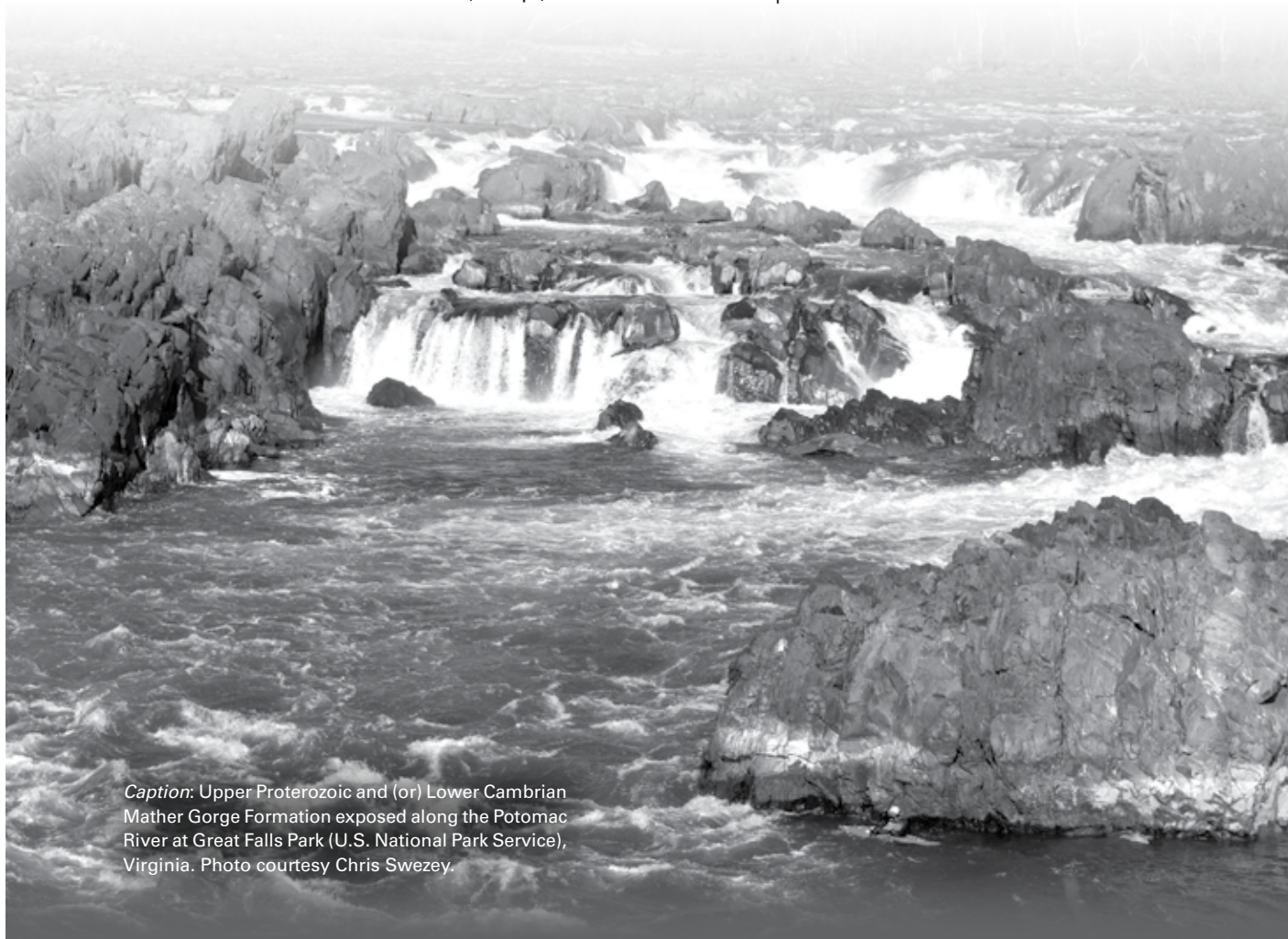
THE GEOLOGICAL SOCIETY
OF AMERICA®

Geology Field Trips in and around the U.S. Capital

Edited by Christopher S. Swezey and Mark W. Carter

Prepared in conjunction with the Southeastern and Northeastern Sections Joint Meeting in Reston, Virginia, the four field trips in this guide explore various locations in Virginia, Maryland, and West Virginia. The physiographic provinces include the Piedmont, the Blue Ridge, the Valley and Ridge, and the Allegheny Plateau of the Appalachian Basin. The sites exhibit a wide range of igneous, metamorphic, and sedimentary rocks, as well as rocks with a wide range of geologic ages from the Mesoproterozoic to the Paleozoic. One of the trips is to a well-known cave system in West Virginia. We hope that this guidebook provides new motivation for geologists to examine rocks in situ and to discuss ideas with colleagues in the field.

FLD057, 103 p., ISBN 9780813700571 | **IN PRESS**



Caption: Upper Proterozoic and (or) Lower Cambrian Mather Gorge Formation exposed along the Potomac River at Great Falls Park (U.S. National Park Service), Virginia. Photo courtesy Chris Swezey.

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THE GEOLOGICAL SOCIETY
OF AMERICA®

FINAL PROGRAM
FOR
ABSTRACTS WITH PROGRAMS

69th Annual Meeting
Southeastern Section of The Geological Society of America
And
55th Annual Meeting
Northeastern Section of The Geological Society of America

Sediments, Structures, Shores, and Storms:
Keeping a keen eye on eastern geology



Southeastern Section GSA Officers for 2019–2020

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SPONSORS

We are grateful to several societies, companies, and agencies that made substantial contributions to underwrite the cost of the meeting. Please look for their names prominently displayed on signs at the meeting. Please take time to thank these sponsors for their contributions to help make this meeting a success. Listed below are sponsorship received by time of press in early January 2020.

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

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

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

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



2020 SE-NE GSA Keynote Speaker

Please join us for the 2020 SE-NE GSA Keynote Talk by Dr. David Kring in Regency B at 6 p.m. on Saturday, 21 March. The talk is sponsored by GSA Continental Scientific Drilling Division.

Drilling into the Chicxulub Impact Crater And a World-wide Calamity 66 Million Years Ago Dr. David Kring

One of the greatest sedimentological events in the Phanerozoic occurred when an impacting asteroid collided with the margin of the Gulf of Mexico, displacing $\sim 1 \times 10^5 \text{ km}^3$ of the Earth's crust and ejecting >25 trillion metric tons of debris, most of which splashed down on the surrounding seas and continental surfaces in the western hemisphere, but included debris distributed globally in a layer of silt- and sand-sized particles. IODP-ICDP Expedition 364 recently drilled to a depth of 1.3 km into the peak ring of that crater, the Chicxulub crater, providing new insights into the crater-forming processes that excavated a 180-km diameter structure and, simultaneously, uplifted rocks from a depth of 8 to 10 km to the surface where they formed, within minutes, a 100-km diameter ring of rocky peaks. The drill core also reveals how surges of water and sediment blanketed those peaks and how life recovered within the basin. These observations at impact ground zero are being tied together with observations made elsewhere in the world and, incrementally, revealing how life at the end of the Cretaceous was extinguished and how survivors thereafter recovered.

Biosketch:

Dr. David A. Kring received his Ph.D. in earth and planetary sciences from Harvard University. He specializes in impact cratering processes produced when asteroids and comets collide with planetary surfaces. Kring is perhaps best known for his work with the discovery of the Chicxulub impact crater, which he and his colleagues linked to the K-T boundary mass extinction of dinosaurs and over half of the plants and animals that existed on Earth 65 million years ago. He has also studied the environmental effects of impact cratering and shown how impact processes can affect both the geological and biological evolution of a planet. This work includes studies of the dramatic environmental perturbations (e.g., prolonged darkness, acid rain, wildfires) expected after the Chicxulub impact event, plus studies of several smaller local, regional, and global effects produced by the thousands of impact events that affected Earth after life evolved. Kring is a Principal Scientist for the Universities Space Research Association's Lunar and Planetary Institute where he leads the Center for Lunar Science and Exploration. He is a Fellow of GSA, a former Chair of the GSA Planetary Geology Division, currently the Chair of the Eugene M. Shoemaker Impact Crater Award Committee for the GSA Planetary Geology Division, and a recipient of that division's Ronald Greeley Award for Distinguished Service.

General Information



Welcome

The local committee and officers of the Southeastern and Northeastern Sections graciously welcome you to the 2020 Joint Meeting of the 69th Annual Meeting of the Southeastern Section and 55th Annual Meeting of the Northeastern Section of the Geological Society of America in Reston, Virginia. The joint meeting is hosted by representatives of the U.S. Geological Survey, Department of Geography, Geology, and the Environment at the Slippery Rock University, the Department of Geology at The College of William and Mary, Barner Consulting, the Department of Geology at Allegheny College, and the Department of Earth Sciences at California University of Pennsylvania.

Location

The 2020 Joint Meeting of the Southeastern and Northeastern sections of the Geological Society of America is in Reston, Virginia, at the Hyatt Regency Reston, in the Reston Town Center. Located in Fairfax County in northern Virginia, Reston is in the D.C. Capital Region and near the heart of America's government and federal agencies, and numerous historical and cultural attractions, and national museums, parks and monuments. The location of the meeting offers a unique opportunity to explore many aspects of eastern geology.

Reston is a planned community and was named after founder Robert E. Simon, who envisioned a modern community that intertwined residential and commercial property with greenspaces and nature. The goal was to create a community where people could Live, Work, and Play, a motto that remains with the town today. The residential and commercial properties are often nestled in forested spaces throughout the town, and greenways connect parks, lakes and other recreational areas for the residents to enjoy. The Town Center is lined with inviting restaurants, bistros, bars, and shops, which are literally just out the door of the Hyatt Regency Reston, the meeting venue. The town has received many accolades, which include the 2018 Best Place to Live in Virginia. Reston is part of the Dulles Technology Corridor, which contains many defense and technology companies, e.g., Carasoft, Leidos, Verisign. Reston is home to the headquarters for the U.S. Geological Survey and is a short distance from Washington D.C. and many National Monuments and Parks, the Smithsonian Museums, and many other government and historical attractions.

Reston is situated near the Fall zone, the onlap of Coastal Plain on crystalline bedrock, and the structural and stratigraphic break between the southern, and central and northern Appalachians. Reston is located on an elevated high of

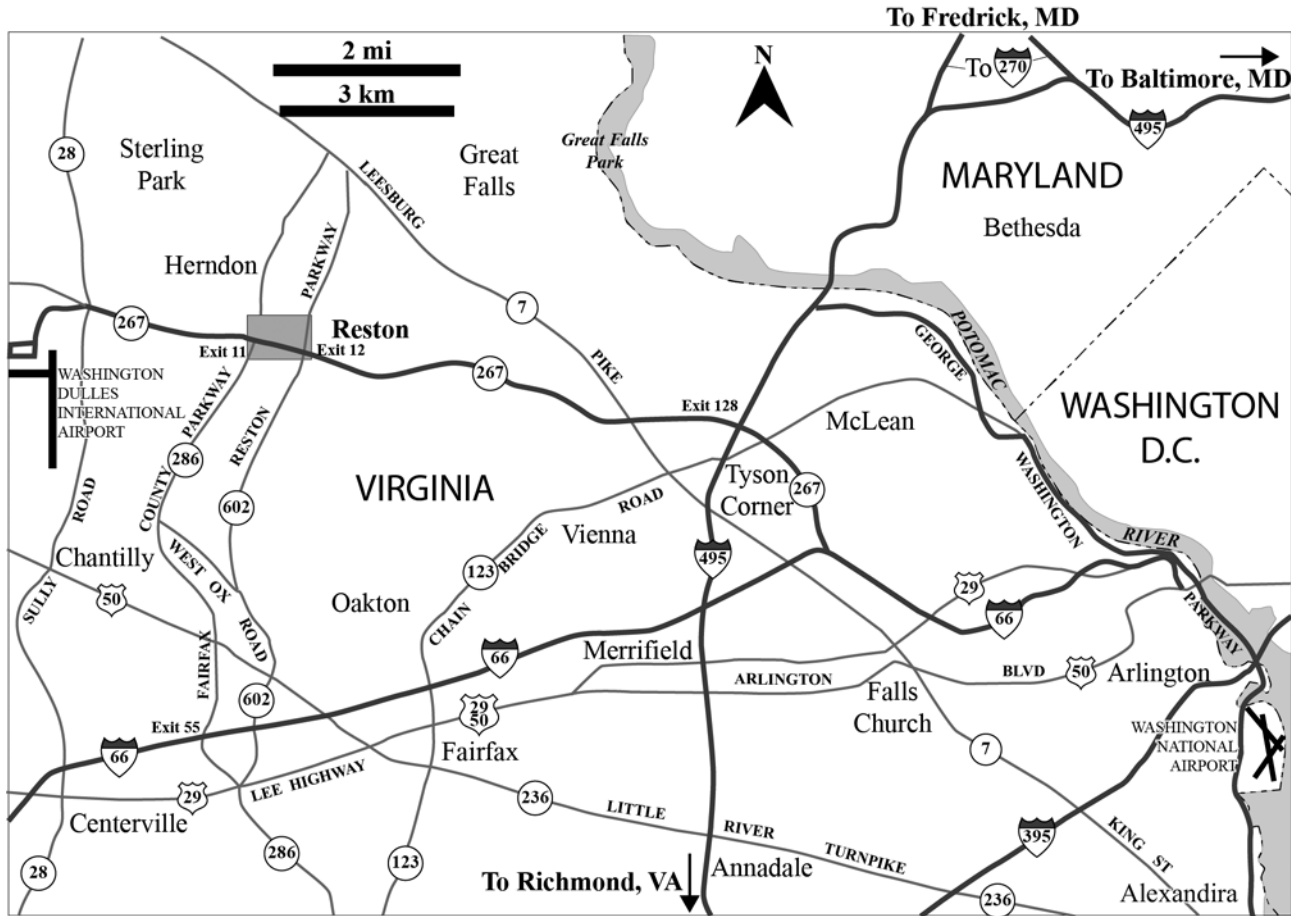
crystalline rocks of the Potomac terrane; to the west, Late Triassic sedimentary rocks of the Culpeper Basin unconformably overlie the crystalline rocks. The contact between the Mesozoic Culpeper Basin and Precambrian rocks strikes north-northeast and crosses the through Town Center (west of the Hyatt). The sandstones and conglomerates belong to the Reston Member of the Manassas Sandstone. The Potomac terrane consists of the Peters Creek schist and meta-graywacke, and are dramatically exposed at Great Falls on the Potomac River and Mather Gorge before the river drains into the Chesapeake Bay. Blocks of ultramafic rocks occur in the Peters Creek Schist; the Bear Island Granodiorite intruded the Peters Creek Schist. East of Reston and the Fall zone, Coastal Plain sediments unconformably overlie crystalline rocks of the Potomac and other buried terranes. The Coastal Plain records evidence of dramatic paleoclimatic changes, the Miocene Chesapeake impact structure, and the effects of modern climate change on the environment and civilization. There is much to study and learn about eastern geology, so bring keen eyes and mind to Reston 2020. Reston will rock!

Climate

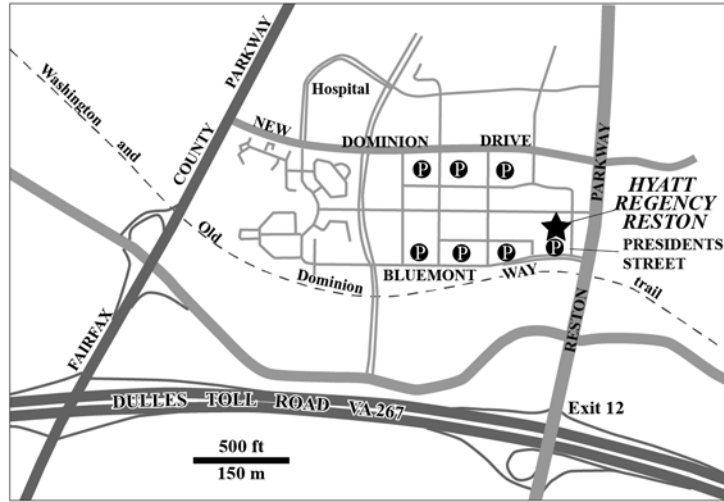
Springtime weather can be variable, and Reston is not an exception. Temperatures in late March may vary drastically from highs in the 70s to 30s, but typical daily temperatures range in the mid-50s with nighttime lows in the 30s. Precipitation is common and even light snow is possible. Please be prepared for all possibilities, especially if participating in any field trips.

Transportation and Directions

The Washington D.C. metropolitan area offers numerous ways to get to the meeting: a large network of interstates, parkways and roads, international airports, rail, and even bicycle and pedestrian trails. Local commuters may take advantage of the meeting venue being located along the Washington and Old Dominion Trail pedestrian and bike trail, or commute via car and park in one of the Reston Town Center garages. Those traveling by automobile from farther away have various possible routes to take to the meeting. Below are a few general directions following major routes from the south and north. If you are traveling from Pennsylvania, West Virginia, Ohio and parts of western Maryland, there several different routes to follow; however, consult a map or mobile navigation device for the best route. Traffic in the Capital Region, especially I-495 Beltway, can be high volume and congested, so plan accordingly. Try to arrive before the 4 p.m. to 6:30 p.m. rush-hours traffic.



- Ⓟ Public Parking
- ★ Meeting Venue
- - - Pedestrian and bike trail



From I-81 traveling north and south. Traveling north on I-81 from the Shenandoah Valley and further south, take exit 300 to I-66 east. Continue 55 miles and take exit 55 toward Reston/Herndon, and merge onto VA 286 Fairfax County Parkway and continue north 8.7 miles. Turn right onto New Dominion Parkway, continue 0.7 miles to Reston Parkway, VA 602. Turn right on Reston Parkway, then right onto Market Street, and then after ~125 feet turn right onto Presidents Street and the Hyatt Regency is on your right

(main entrance to hotel and parking garage). If you are traveling south from Pennsylvania, West Virginia, Ohio and parts of western Maryland, it is possible to follow I-81 south to the intersection with I-66 and follow the instructions above. Alternately, there are several other routes to Reston (see I-270 traveling south), but some may involve multiple turns. These are not described here, and one should consult maps or mobile navigation devices for the best route.

From I-95 traveling north. Take I-95 N to northern Virginia and then onto I-495 N; keep right at the fork and continue to I-395 N and follow signs for I-495 N Washington/Tysons Corner/I-395 N, use the right two lanes to merge onto I-495 N toward Tysons Corner. Continue 11.9 miles and take exit 45 to VA-267 W toward Dulles Airport (note this is a toll road). Continue 8 miles to exit 12 Reston Parkway, VA 602, turn right onto Reston Parkway continue 0.3 miles and turn left onto Bluemont Way. After ~250 feet turn right onto Presidents Street and the Hyatt Regency is on your left (main entrance to hotel and parking garage).

From I-95 traveling south. Take I-95 south to Washington D.C. Take exit 27 W using the right two lanes to merge onto I-495 W toward Silver Spring, Maryland. Continue 19.3 miles and take exit 45A to VA-267 W toward Dulles Airport (note this is a toll road). Continue 8 miles to exit 12 Reston Parkway, turn right onto Reston Parkway continue 0.3 miles and turn left onto Bluemont Way. After ~250 feet turn right onto Presidents Street and the Hyatt Regency is on your left (main entrance to hotel and parking garage).

From I-270 traveling south. If you are traveling from parts of central and western Pennsylvania, and western Maryland, it is possible to follow I-70 or another route to Fredrick, Maryland then south on I-270 and merge with I-495. Take the I-270 south spur to I-495 W. Continue 8 miles and take exit 45A to VA-267 W toward Dulles Airport (note this is a toll road). Continue 8 miles to exit 12 Reston Parkway, turn right onto Reston Parkway continue 0.3 miles and turn left onto Bluemont Way. After ~250 feet turn right onto Presidents Street and the Hyatt Regency is on your left (main entrance to hotel and parking garage).

From Air. Two major airports are located within 25 miles of Reston. Dulles International Airport in Herndon, VA is 6 miles away. Take the VA 267 E toward Reston and Washington, D.C. Take exit 11 to VA-286/Fairfax County Parkway and use the left to lanes to turn left. Follow Fairfax County Parkway 0.7 miles and right onto New Dominion Parkway, continue 0.7 miles to Reston Parkway, VA 602. Turn right on Reston Parkway, then right onto Market Street, and then after ~125 feet turn right onto Presidents Street and the Hyatt Regency is on your right (main entrance to hotel and parking garage). Ronald Reagan Washington National Airport in Washington, D.C. is 24 miles away the Hyatt Regency. Leaving Reagan National Airport take the Aviation Circle/W Entrance Road and S Smith Boulevard to George Washington Memorial Parkway and follow the parkway 8 miles to State Route 123/VA-123 South Chain Bridge Road in McLean, VA. Take the VA-123 S exit from George Washington Memorial Parkway and continue 4 miles on VA-123 Chain Bridge Road to McLean, VA. Exit on right to VA-267W toward Reston and Dulles International Airport (note this a toll road). Continue on VA 267 8 miles to exit 12 to Reston Parkway. Turn right onto Reston Parkway continue 0.3 miles and turn left onto Bluemont Way. After ~250 feet turn right onto Presidents Street and the Hyatt Regency is on your left (main entrance to hotel and parking garage).

D.C. Metro. Local commuters may take advantage of the rapid rail transit system of the Metro now extending service

to Wiehle Station-East Reston on the Silver Line. Wiehle Station is 2 miles from the Hyatt Regency with either a brisk walk or short ride on a bus or taxi.

Accommodations

We strongly encourage meeting participants to reserve rooms at the Hyatt Regency Reston, 1800 Presidents Street, Reston, Virginia, 20190, USA. The Hyatt Regency Reston is the official venue of the meeting and all conference activities take place here. The hotel offers many amenities (restaurants, bar, pool, Wi-Fi) and a complimentary shuttle to/from Dulles International Airport. Reservations can be made by calling +1-703-709-1234. Please be sure to identify yourself with the group code G-GSOC and that you are attending the GSA Southeastern and Northeastern Sections Joint Meeting.

Parking

Parking is available at the hotel garage, 1800 Presidents Street, Reston, Virginia, and in several Reston Town Center parking garages located with in a few blocks of the meeting venue. Entrances are on Library and Explorer Streets. Reston Town Center garages do not allow overnight parking. Also, limited public parking spaces are available on some streets in the Town Center.

Registration

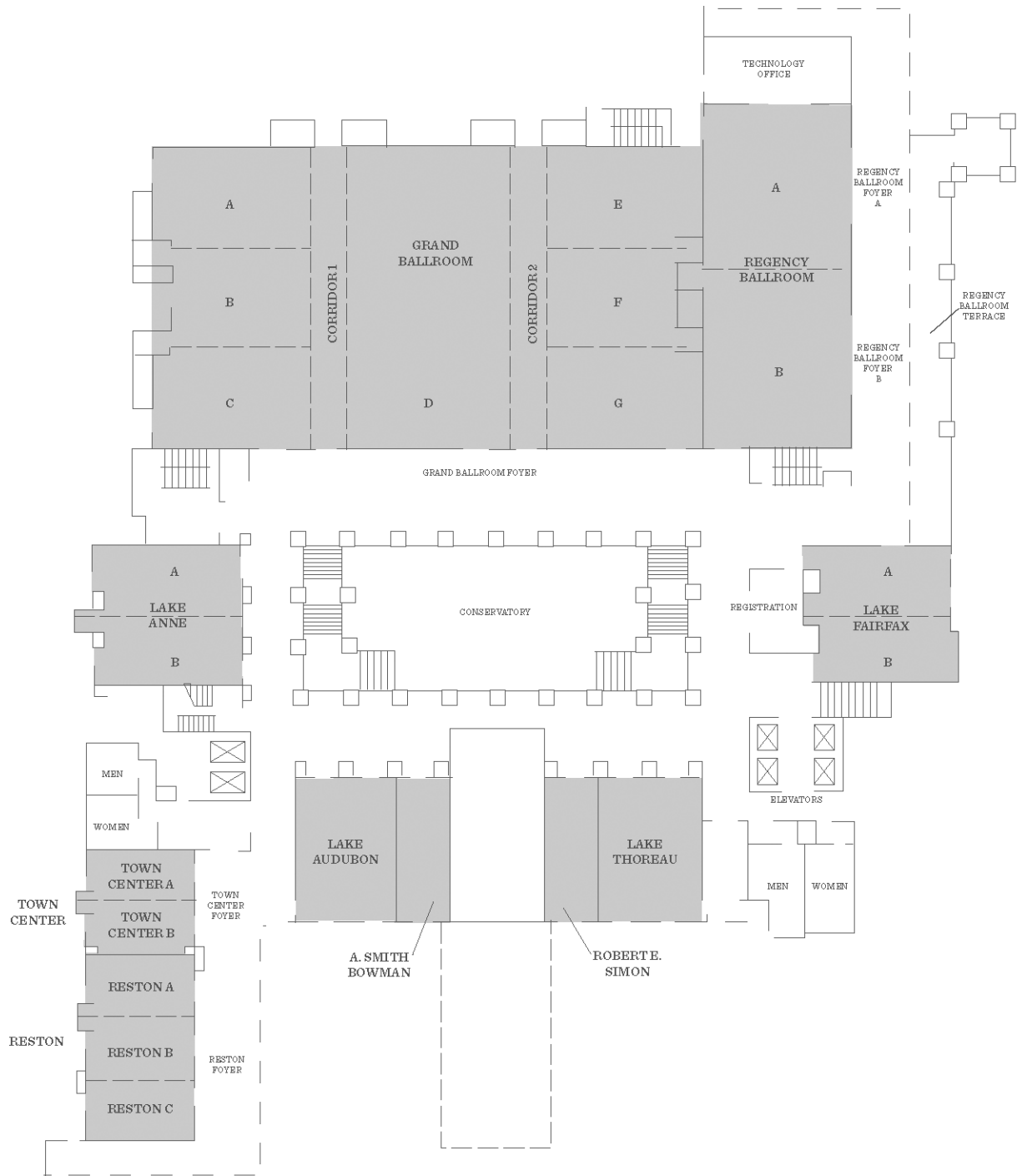
Registration is required to participate in all events associated with the meeting, including technical sessions, field trips, short courses, exhibits, special meetings, and planned social events. Registration badges must be worn for access to all activities, and guest registration is required for attendance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

On-site Registration Fees shown in U.S. dollars.

	Full	1-Day
Professional Member	\$250	\$170
Professional Member 70+	\$145	\$115
Professional Nonmember.....	\$275	\$200
Student Member.....	\$100	\$80
Student Nonmember.....	\$130	\$110
K–12 professional.....	\$100	\$75
Guest/Spouse.....	\$80	\$75
Field Trip/Short Course only.....	\$40	n/a

Guest registration is intended for non-geoscientists accompanying a registered professional, student or K–12 professional. Guest registration does not include attendance at workshops or field trips. All guests, volunteers, exhibitors, GSA staff, service providers and others in attendance are expected to abide by the GSA Events Code of Conduct, which outlines specific expectations for participants at GSA-supported events.

FLOOR PLAN
Second Floor



Floorplan of Hyatt Regency Hotel meeting space.

Registration Schedule

On-site registration and badge pick-up is located in the Conservatory on the main floor of the hotel and is available on the following schedule:

Thursday, 19 March: 4–8 p.m.

Friday, 20 March: 7 a.m.–5 p.m.

Saturday, 21 March: 7 a.m.–5 p.m.

Sunday, 22 March: 7 a.m.–noon

Cancellations, Changes, and Refunds

Requests for additions, changes, and cancellations must have been made in writing to GSA Headquarters by 25 February 2020. No refunds will be made on cancellation notices received after this date. GSA cannot provide refunds for on-site registration or event ticket sales. Refunds will be mailed from GSA after the meeting; refunds for fees paid by credit card will be credited to the card identified on the registration form.

Meeting App and Abstracts

A web-based app is available for this meeting. This app allows you to view and search the meeting program and create your own schedule of events to attend. You can also view the full abstracts text from this app. Please download the app at <https://gsa.confex.com/gsa/2020SE/meetingapp.cgi>.

Accessibility

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

Continuing Education Units (CEU credit)

Continuing Education Unit (CEU) credits are available for attending GSA Meetings, Field Trips, and Short Courses. This is an excellent opportunity to earn CEUs toward your requirements for your employer, K–12 school, or professional license. A contact hour is defined as a typical 60-minute classroom instructional session or its equivalent. Each conference day equals 0.8 CEU, offering 2.4 CEUs for the joint meeting technical program, with additional CEUs available from field trips and short courses. Please check the meeting website after the meeting to download your CEU certificate.

Special Events and Activities

Thursday, 19 March

Experience Capitol Hill: Geoscience and Public Policy in Washington, D.C. 8:30 a.m.–5:30 p.m., Hyatt Regency Reston, Hotel Lobby. Fee: \$45. Kasey White, Geological Society of America. Participants will spend a day on Capitol Hill and experience how geoscience influences, and is influenced by, federal public policy.

USGS Headquarters Tour. 1 p.m. and again at 2:30 p.m. Visit the USGS Headquarters in Reston, VA, and tour research laboratories in the J.W. Powell Building. The tour will visit labs that focus on Everglades restoration, Holocene climate change/land use change, and microbial impacts on the environment. Tours will be at 1 p.m. and 2:30 p.m. and will have a minimum of 5 and maximum of 25 participants. A self-guided tour of the building and grounds is available during regular operating hours of the J.W. Powell Building, but access to the labs will not be available. Contact Arthur Merschat to reserve a spot for the 1 p.m. or 2:30 p.m. tour (amerschat@usgs.gov).

Welcoming Reception. 6–8 p.m. Join us in the Grand Ballroom A-D to visit with friends and colleagues, and officially kick-off the Joint meeting of the Southeastern and Northeastern Sections. Exhibits will be open, and hors d'oeuvres and one complementary drink are included with each registration. A cash bar will also be available.

Friday, 20 March

Session Chair Orientation. 7–7:15 a.m., Reston C. This meeting will include a review of session time management, AV procedures, and other information affecting the conduct of the day's sessions.

Tectonics Group. 5–7:30 p.m. Regency B. Stick around after the session S2. *The Appalachians, from North to South, from Crust to Mantle II*, to discuss Appalachian geology and network during the Tectonics Group reception.

SEPM Meeting and Reception. 5:30–7:30 p.m. Lake Thoreau. Join the Eastern Section of SEPM for their annual reception and keynote address by SEPM President, Prof. Lynn Soreghan, "Loess as an Archive and Agent of Climate and Climate Change in Deep Time."

Saturday, 21 March

GSA Southeastern Section Management Board Meeting. 6:30–8 a.m. Living Room.

Session Chair Orientation. 7–7:15 a.m., Reston C. This meeting will include a review of session time management, AV procedures, and other information affecting the conduct of the day's sessions.

GSA Campus Representative Appreciation Breakfast. 7–8:30 a.m. Grand Ballroom E. This complimentary breakfast is in appreciation of GSA Campus Reps: Thank You. If you are a campus representative or are interested in becoming one, please plan to attend this celebratory event.

GSA Northeastern Section Management Board Meeting. Noon–1:30 p.m. Living Room.

Geology Club Officer Meet-Up. 2–3 p.m., Grand Ballroom E. Meet with other geology club representatives and chat about their activities, goals, and accomplishments.

Keynote Speaker: Dr. David Kring. 6–7 p.m. Regency B. Join us and the GSA Continental Drilling Division for the Keynote Talk by Dr. David Kring: **Drilling into the Chicxulub Impact Crater and a World-wide Calamity 66 Million Years Ago.** A brief reception will precede the talk.

Map and Art Blast. 7–9 p.m. Grand Ballroom A-D. Building upon the longstanding tradition of hanging draft maps, ongoing investigations, and recently published maps in the poster hall, we now seek artistic creations. Please share your recent efforts for discussion. Art lifts science! Cash bar and free pizza!

Sunday, 22 March

Session Chair Orientation. 7–7:15 a.m., Reston C. This meeting will include a review of session time management, AV procedures, and other information affecting the conduct of the day's sessions.

Opportunities for Students

Roy J. Shlemon Mentors Program in Applied Geoscience. Fri., 20 March, noon–1:30 p.m., Grand Ballroom E. GSA student members will have the opportunity to discuss career prospects and challenges with applied geoscientists from various sectors over a FREE lunch. GSA student members will receive priority; any remaining space will be offered to student non-members on first come, first served.

John Mann Mentors Program in Applied Hydrogeology. Sat., 21 March, noon–1:30 p.m., Grand Ballroom E. GSA student members interested in applied hydrogeology or hydrology as a career will have the opportunity to network with professionals in these fields over a FREE lunch. GSA student members will receive priority; any remaining space will be offered to student non-members on first come, first served.

Mentoring Café. Fri.–Sat., 20–21 March, 1:30–5:30 p.m. Grand Ballroom G. Mentoring and résumé review on a first-come, first-served basis. Show up early to secure your 30-minute consultation. If you need résumé assistance, please bring a copy of your résumé with you.

Mentoring Roundtables. Fri., 20 March, 4–5:30 p.m. Grand Ballroom G. Numerous mentors will be available to answer your questions, offer advice about career plans, and comment on job opportunities in their fields.

Mentoring Panel. Sat., 21 March, 4:30–5:30 p.m. Grand Ballroom G. Panelists will be geologists working in positions you may not have considered for employment. They will discuss their jobs and offer advice.

GSA Career Workshops

Geoscience Career Program Workshop Part 1: Career Planning and Networking. Fri., 20 March, 9–10 a.m., Grand Ballroom G. 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 help you to practice your networking skills. This section is highly recommended for freshman, sophomores and juniors. The earlier you start your career planning the better.

Geoscience Career Program Workshop Part 2: Geoscience Career Exploration. Fri., 20 March, 10–11 a.m., Grand Ballroom G. What do geologists in various sectors earn? What do they do? What are the pros and cons to work-

ing in academia, government, and industry? Workshop presenters and professionals in the field will address these issues.

Geoscience Career Program Workshop Part 3: Cover Letters, Résumés, and CVs. Sat., 21 March, 9–10 a.m., Grand Ballroom G. How do you prepare a cover letter? Does your résumé need a good edit? Whether you are currently in the market for a job or not, learn how to prepare the best résumé possible. You will review numerous résumés helping you to learn important résumé dos and don'ts.

Student Volunteers

Students accepted as meeting volunteers must check in at the Student Volunteer and Information Desk, located in front of Lake Fairfax on the second level of the hotel.

Exhibits

Exhibits are located in the Grand Ballroom A-D on the second floor of the hotel. Hours of Exhibits are:

Set up: Thursday, 19 March, noon–5 p.m.
Open: Thursday, 19 March, 6–8 p.m.
Open: Friday, 20 March, 8 a.m.–5:30 p.m.
Open: Saturday, 21 March, 8 a.m.–5:30 p.m.
Open: Sunday, 22 March, 8 a.m.–noon
Tear Down: Sunday, 22 March, 12:30–6 p.m.

As of January, Exhibitors include:

2021 Section Meetings booth
Association of Independent Professional Geologists
Association of State Boards of Geologists
Association of Women Geoscientists
Clay Mineral Society
Gems & Crystals Unlimited
GSA Bookstore
GSA Foundation
History & Philosophy of Geology Division/ History of Earth Sciences Society
I Miller Prevision Optical Inc.
Mineralogical Society of America
NAGT - Eastern and Northeastern Sections
National Science Foundation
Olde Geologist Books
Pittsburgh Geological Society
Temple University
University of Massachusetts Lowell
University of Pennsylvania
University of Pittsburgh at Johnstown Geology Club
US Geological Survey
West Chester University
West Virginia University

Test Your Knowledge

How well do you know the geology of northern Virginia? Come test that knowledge at the GSA Foundation booth in the exhibit hall. Whoever gets the most answers correct over the course of the meeting will win a prize!

Technical Program

The technical program consists of Symposia, Theme, and Discipline sessions organized in oral and posters sessions. The technical program begins at 8 a.m., Friday, 20 March and concludes by 5:30 p.m. on Sunday, 22 March. All technical sessions (oral and poster) are located on the second floor of the Hyatt Regency.

Oral Sessions

Most oral sessions have 20 minutes per presentation (17 minutes, presentation; 3 minutes, question and discussion). Presentations must be prepared using PowerPoint or PDF formats, using a 16:9 screen ratio. One laptop 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, microphone, wireless computer mouse and PowerPoint advancer, and a speaker timer.

Speaker Ready Room (Town Center Room)

All oral session presenters must visit the Speaker Ready Room in the Town Center Room A–B before their scheduled presentation to ensure their PowerPoint or PDF file is properly configured and operating, and load it on one of the laptops. Failure to do so may result in presentations being omitted from sessions. Speaker Ready Room hours are as follows:

Thursday, 19 March 4–8:30 p.m.

Friday, 20 March 7 a.m.–6 p.m.

Saturday, 21 March 7 a.m.–6 p.m.

Sunday, 22 March 7–2 p.m.

Each speaker must bring his or her PowerPoint or PDF presentation on a USB-compatible flash drive (a.k.a. thumb drive or memory stick) to the Speaker Ready Room to upload to the appropriate session folder according to the deadlines below. Morning presentations must be uploaded by the end of the day prior to the presentation. All afternoon presentations must be uploaded by noon on the day of the presentation.

Session Chair Orientations

Each Session Chair is requested to attend a 15-minute “Session Chairs Orientation” held in Reston C, from 7–7:15 a.m. on the morning of the day on which your session is to take place. This meeting will include a review of session time management, AV procedures, and other information affecting the conduct of the day’s sessions.

Session chairs are asked to strictly adhere to the technical program schedule and to limit speakers to their allotted time. If a speaker does not appear for an assigned time slot, session chairs should call a break or discussion period and begin the following presentation at its scheduled time.

A student volunteer is assigned to each oral session. Session chairs are asked to meet with the assigned student volunteer before the start of the session. The volunteers are there to help the sessions run smoothly and to contact the AV Coordinator in the event of technical problems.

Poster Sessions

Poster Sessions are located in the Grand Ballroom and in Lake Anne. On Sunday afternoon, poster sessions will be in the Grand Ballroom E-G and Lake Anne. Poster presenters have one 4' x 8' horizontal (landscape) poster display surface. Please check the program for specific times and locations. Numbers on the display surfaces correspond to the poster booth numbers listed in the Program. Push pins are recommended to mount posters, and some pins are furnished for each poster board.

Technical Sessions

Discipline Sessions:

D1. Economic, Energy, and Engineering Geology (Oral and Posters)

D2. Environmental Geology and Karst

D3. Environmental Geoscience (Posters)

D4. Geochemistry (Posters)

D5. Geomorphology & Quaternary Geology

D6. Geomorphology, Quaternary Geology, and Soils (Posters)

D7. Geophysics (Posters)

D8. Geoscience Education (Oral and Posters)

D9. Hydrogeology (Posters)

D10. Karst (Posters)

D11. Marine/Coastal Science (Posters)

D12. Mineralogy/Crystallography (Posters)

D13. Paleobiology

D14. Paleoclimatology/Oceanography (Posters)

D15. Paleontology (Posters)

D16. Petrology (Posters)

D17. Planetary Geology (Posters)

D18. Sedimentary Geology and Stratigraphy (Posters)

D19. Structural Geology and Tectonics (Posters)

D20. Structural Geology, Microstructures, and Geochronology

D21. Volcanology (Posters)

Theme Sessions

T1. Abiotic-Biotic Interactions in the Critical Zone (Oral and Posters)

T2. Wetlands in a Changing World: Impacts of Environmental Change on Wetland Function and Ecosystem Services (Oral and Posters)

T3. Paleolimnological Records of Climate and Environmental Change (Oral and Posters)

T4. Geoarchaeology of Dynamic Landscapes (Oral and Posters)

T5. Drill, Drill, Drill! A Tribute to USGS Drillers Eugene “Big Gene” Cobbs, Eugene “Little Gene” Cobbs, III, and Jeff Grey, and Their Contributions to Geologic Research East of the Mississippi River (Oral and Posters)

T8. Mega-Traces: Advances in Ichnology and Zoogeomorphology (Oral and Posters)

T9. Neoproterozoic to Cambrian Transitions on the Appalachian, Laurentian Margin

T10. Provenance of the Eastern North American Margin: From Triassic Rifting to Modern Sedimentation (Oral and Posters)

T11. Integrating Field and Modeling Approaches to Understand Changing Coastal Systems (Oral and Posters)

T12. Shale Production in the Eastern U.S.—E3: Environmental, Economic & Energy System Impacts

T13. Developing and Using Open Educational Resources in the Geosciences (Posters)

T14. Out of the Classroom, Out of the Box: Innovative Approaches to Geoscience Education (Oral and Posters)

T18. Undergraduate Research (Posters)

T19. Eastern Activities of the USGS Earth Mapping Resources Initiative

T20. Defining 3D Geologic Mapping in the Eastern North America (Posters)

T21. Geologic Maps, Digital Geologic Maps, Geophysical Maps, and Derivatives from Geologic and Geophysical Maps (Posters)

T23. New Developments in the Understanding of Pre-Appalachian Rocks of Eastern North America

T26. Deciphering Active Tectonics and Seismic Hazard in Eastern North America (Oral and Posters)

T27. Appalachian Petrology: A Session to Honor the Career of Dr. Robert J. Tracy (Oral and Posters)

T28. Geoscience Careers for New Geoscience Graduates

T29. Chemostratigraphic, Biotic, and Sedimentologic Changes through Earth History (Oral and Posters)

T30. Private Wells—Current Challenges and Opportunities

Symposium Sessions

S1. The Past is the Key to the Present—The Role of Paleontology and Geology in Management and Decision Making (Oral and Posters)

S2. The Appalachians, from North to South, from Crust to Mantle (Oral and Posters)

S3. From the Margins to the Deep: A Tribute to the Science and Art of A. Conrad Neumann (Oral and Posters)

S4. New Developments in Diversity and Inclusion in the Geosciences

S5. Radionuclides: Biogeochemistry, Transport, and Geological Applications

S6. Stratigraphic Problems and Solutions in the Appalachian Basin (Oral and Posters)

S7. The Grenville Orogen in Eastern North America (Oral and Posters)

FIELD TRIPS

All trips leave from the Hyatt Regency Reston, Reston, Virginia, Hotel Lobby. Please check below for specific field trip departure and return times.

Pre-Meeting

FT1. **The Central Appalachian Orogen: From Ancient Tectonics to Modern Seismicity.** 7 p.m., 16, March–6 p.m., 19 March. US\$300. Leaders: Christopher M. Bailey, College

of William & Mary, cmbail@wm.edu; Callan Bentley, Northern Virginia Community College, cbentley@nvcc.edu; Frank J. Pazzaglia, Lehigh University, fjp3@lehigh.edu; Allan Pitts, University of Camerino, pitts.alan@gmail.com.

FT2. **Military Geology of the Manassas Battlefield Area, Virginia.** 8 a.m.–6 p.m., 19 March. US\$58. Leader: John C. Jens, U.S. Army Geospatial Center, jcjens@earthlink.net.

FT3. **Accreted Forearc, Continental, and Oceanic Rocks of Maryland's Eastern Piedmont: The Potomac Terrane, Baltimore Terrane, and Baltimore Mafic Complex.** 7 a.m.–7 p.m., 19 March. US\$100. Leaders: Rebecca Kavage Adams, Maryland Geological Survey, rebecca.adams@maryland.gov; William Junkin, Maryland Geological Survey, william.junkin@maryland.gov; David K. Brezinski, Maryland Geological Survey, david.brezinski@maryland.gov.

FT4. **Age and Tectonic Significance of Diamictites at the Devonian–Mississippian Transition in the Central Appalachian Basin.** 7:45 a.m.–5 p.m., 19 March. US\$160. Leaders: F.R. Ettensohn, University of Kentucky, fettens@uky.edu; Clay Seckinger, University of Kentucky, clayseckinger@icloud.com.

Post-Meeting

FT5. **The Geology of Washington, D.C.** 8:45 a.m.–4:30 p.m., 22 March. US\$70. Leaders: Callan Bentley, Northern Virginia Community College, cbentley@nvcc.edu; Christopher Roemmele, West Chester University, croemmele@wcupa.edu.

FT6. **Geology and the Civil War at the North Anna River Fall Zone, Virginia.** 6:30 a.m.–7 p.m., 23 March. US\$110. Leader: Christopher M. Bailey, William & Mary, cmbail@wm.edu.

FT7. **Geology and Geomorphology of the Trout Rock Caves (Hamilton Cave, Trout Cave, New Trout Cave), Pendleton County, West Virginia.** 8:30 a.m., 23 March–1 p.m., 24 March. US\$255. Leader: Christopher Swezey, U.S. Geological Survey, cswezey@usgs.gov.

FT8. **Proterozoic and Paleozoic Evolution of the Blue Ridge Geologic Province in Northern Virginia.** 7:45 a.m.–7 p.m., 23 March. US\$76. Leaders: Bill Burton, U.S. Geological Survey, bburton@usgs.gov.

SHORT COURSES

Short courses are located in the Hyatt Regency Reston and in the USGS National Center (12201 Sunrise Valley Drive, Reston, Virginia). Please see below for specific location and time of short course.

SC1. **Clastic and Carbonate Petrology—From Hand Samples to Thin Sections.** 19 March, 8:30 a.m.–4:30 p.m., Room 3C129 (Rankin Map Room, 3rd Floor), USGS National Center-Reston. US\$25 for students; US\$50 all others. Leaders: John Haynes, James Madison University, haynesjx@jmu.edu; Mercer Parker, U.S. Geological Survey, mercerparker@usgs.gov.

SC2. **Applied Micropaleontology for Non-Paleontologists: How to Interpret and Use Fossil Data.** 19 March, 8:30 a.m.–4:30 p.m., Room BA 102B/C, USGS

National Center-Reston. US\$25 for students; US\$50 all others. Leaders: Marci Robinson, U.S. Geological Survey, mmrobinson@usgs.gov; Jean Self-Trail, U.S. Geological Survey, jstrail@usgs.gov.

SC3. Stormwater Management in Karst Terrain. 19 March, 8 a.m.–noon, Lake Fairfax Room, Hyatt Regency Reston. US\$25 for students; US\$50 all others. Leader: Robert K. Denton Jr., Terracon, robert.denton@terracon.com.

SC4. GSA On To the Future Professional Skills Workshop for Students. 19 March, 8 a.m.–5 p.m., Grand Ballroom G, Hyatt Regency Reston. By invitation only (limit 20). Leaders: Stephen K. Boss, University of Arkansas, sboss@uark.edu; Tahlia Bear, Geological Society of America, tbear@geosociety.org; Katherine Ellins, University of Texas at Austin, kellins@jsg.utexas.edu.

CULTURAL AND RECREATIONAL ATTRACTIONS

In the Reston area and Washington D.C. Capital Region there are many cultural and recreational activities. The list below is just a few general ideas of things to do or places to visit.

Washington D.C. Reston is a short distance by car or Metro to numerous historical, cultural and recreational attractions in Washington D.C. Attractions of interest include the Smithsonian National Museums, National Monuments and Parks, head offices of the U.S. government, other historical sites and much more. There are also numerous restaurants and shops to visit.

Great Falls National Park. The Great Falls of the Potomac River are one of the more spectacular waterfalls located along the Fall Zone in the eastern U.S. The Potomac

River plunges over several falls and into Mather Gorge before flowing calmly into D.C. and the Chesapeake Bay. The Park offers many hiking trails along the river, canyon walls, and along parts of the historic C&O Canal.

Steven F. Udvar-Hazy Center. The Smithsonian's Steven F. Udvar-Hazy Center is the sister companion to the National Air and Space Museum on the Nation Mall. Admission is free. Visit thousands of aviation and space craft, including the Space Shuttle Discovery, and a SR-71 Blackbird, in two huge hangers. Also see 360-degree views of the Reston area from the Donald D. Engen Tower.

Wolf Trap National Park for the Performing Arts. This 18th century barn and amphitheater hosts numerous music concerts and other events throughout the year. Plan ahead to enjoy a concert during the meeting with performances from renowned music stars.

Local Craft Breweries. There are many local craft breweries in Fairfax County and northern Virginia. Visit the local breweries, like Bike Lane Brewing, and enjoy great food and beer.

Mount Vernon. Visit the home and estate of George Washington, America's first president. This 400-acre estate is located in southern Fairfax County along the Potomac River and offers a glimpse into the life of George Washington.

National Cherry Blossom Festival. As the climate has become more variable, spring may arrive early with an explosion of blossoms and color. Many of the parks and other natural areas may be a bloom in splendid color. Of particular notice, the National Mall in Washington D.C. is known for Japanese Yoshino cherries that line the edge of the Tidal Basin and throughout other parts of D.C.

Memorial Pages

A. Conrad Neumann—One for the Ages



A. Conrad Neumann as a post-doctoral instructor at Lehigh University ~1963-1964.

The Early Years

Andrew Conrad Neumann was born in 1933 in Oak Bluffs, Martha's Vineyard, MA and grew up in Chilmark on the Island. His earliest recollection was his grandfather reciting stories and poetry to his sister and him before bedtime. Most likely this sparked his love for writing poetry later in life, culminating in a book about the Island (*Up-Island Poems; Tales of a Life on Island and Sea*, 2017; published by Up-Island Books, Menemsha, MA).

"I didn't realize that I had poetry in me, actually until high school. I wrote a poem, and I remember the teacher said – it was about the waves, This has the rhythm of waves. My poems are very much poems of place. I do a lot with salt spray and sounds. Like at night on the Vineyard in my little room, I used to hear the rumble – it's not really a rumble – of the boulders on the shore like Stonewall Beach. So the surf had a sound, and the rocks had a sound." From an interview in 2015, published in 2017 as *The Deep, Deep Pigment of the Mind; Chilmark, Fishing, Oceanography, Poetry; from Vineyard Voices Three*, interviews and portraits by Linsey Lee, oral historian for the Martha's Vineyard Museum; same source for other quotations from Conrad cited below).

Early on, Conrad connected poetry with geology and the sea, which he did for the rest of his life. Also, early on, he

experienced one of nature's most powerful meteorological and, ultimately, geological processes.

"The '38 Hurricane caught us by surprise. I remember the chickens went to bed and there were other signs. The sky got all colored yellowy. During the storm our Model A Ford had the top blown off, and so there was chicken wire up there. We drove to Menemsha and I saw a grown man cry. That stuck in my mind. I forget who it was, but his boat was demolished. And of all things, as a child, a five-year-old, I just took in the scenery of devastation without really feeling, until this man spoke with his choked voice. And that made an impression on me as a five-year-old". The Great Hurricane of 1938 killed 564 people in New England.

Conrad's interest in geology started by looking for fossils in the Gay Head area of the Island. His grandmother's cousin "was a great naturalist kind of lady. Birds and fossils. And mineral deposits. Marcasite crystals. She had shoeboxes of them". The famous brightly colored Pleistocene clay cliffs of Gay Head, a national landmark, contain fossils bones of whales, camels, and wild horses—a great place for a kid to begin to appreciate Earth history.

As a high school student on the Vineyard, his family convinced him to move to New York City to establish residence and attend college. He graduated from Brooklyn College in

1955 with a degree in geology. “Everybody was going off to different graduate schools when I graduated from Brooklyn College. And somebody left a graduate bulletin on the table in the lunchroom, and it had a ship on the cover. I picked it up. Texas A&M had this beautiful schooner (*Jakkula*), three masts, and had graduate courses in meteorology and oceanography. So I wrote a letter, one thing led to another and I was off.” Conrad graduated from Texas A&M University in 1958 with a MS in oceanography.

Childhood ties probably brought him back to Woods Hole (Woods Hole Oceanographic Institution--WHOI) where he met and was interviewed by Columbus Iselin, WHOI's Director. Dr. Iselin said “We don't have anything on the Red Sea circulation since 1931. And we're going over there and you could do the circulation of the Red Sea.” I said, ‘but I'm a geologist’. He said, “I thought you wanted to be an oceanographer? So next thing I know, I'm in the Red Sea. I had a wonderful time working at WHOI. For three years I was on the old *Atlantis I* (142 ft, 460 ton, steel hulled, ketch-rigged sailing vessel; built in 1930 specifically as a research vessel for WHOI and used by famous scientists of the day) and those were probably the most formative years, in some ways, to my education and work. And that was before the days of computers. We used crayons. Every oceanographer had a big box of colored pencils. We called it Crayola oceanography.”

In 1963 Conrad received his PhD from Lehigh University with Keith Chave as his major advisor. His dissertation addressed the sedimentology of Harrington Sound, Bermuda. Then, it was off to a faculty position at the Rosenstiel School of Marine and Atmospheric Science at the University of Miami thus beginning his amazing career as a geological oceanographer.

The Professional Years

Conrad's primary scientific gift was his intense, unconventionally creative and wonderfully imaginative mind. Anyone who had met Conrad (he hated “Connie”) instantly realized that he/she was facing an intellect that, at times, defied description. In another life he might have authored a comic strip that blended “Bizarro” with the “Far Side”. Indeed, Conrad was known for his spot-on, hilarious cartoons depicting life at sea, life as a program manager at the National Science Foundation, or life inside a submersible. More to the point, he possessed the great advantage of being able to illustrate geologic phenomena using his hand-crafted depictions to entertain, but most assuredly to educate. His caricature of carbonate diagenesis was brilliant and should be part of any resource book on the topic—one look and you are an expert—forget about reading the text. Sadly, the rest of us have had to struggle with Adobe Illustrator or whatever to get our points across visually.

More seriously, Dr. Neumann was one of the keynote players in carbonate sedimentology and carbonate depositional systems for 40 years. The quality of his work was recognized early on by SEPM as he received the Outstanding Presentation Award for his paper given in 1969, Honorable Mention for Outstanding Paper in JSP in 1970, and Outstanding Paper in Journal of Sedimentary Petrology in 1975 with Lynton

Land. He was an experimentalist (e.g., measuring boring rates of sponges in limestone under lab conditions), a theoretician (e.g., cement loading hypothesis), and a far-seeing observationist (e.g., long list of outstanding papers). He lived in the world of ideas, he saw things others did not see, and his research was never tied to any research tool. He was as comfortable with deep-penetrating seismic reflection data as he was with amino-acid racemization age dating. His mind was a cauldron of ideas producing innumerable sparks and an occasional eruption—each a gem advanced by his graduate students and colleagues—ultimately to find their way into the literature.

Specifically, he made major contributions concerning: (1) the origin of lime mud and the flux of these sediments cast off into deep basins, (2) the geologic variability of carbonate platforms margins (shallow and deep) and the processes that build and shape them, (3) the effects of algal mats on sedimentary processes, (4) discovery of huge lithified, deepwater coral mounds in the ocean, (5) late Pleistocene/ Holocene sea level history, (6) methane-derived carbonates, (7) carbonate island geology of the Bahamas, (8) geochemobiology of modern stromatolites, (9) organic influences on carbonate cements, (10) origin of ancient mud mounds, and (11) geobiology of hardbottoms. His published abstract illustrating his famous late Pleistocene/Holocene sea-level curve derived from basal peats in Bermuda is widely cited and was the best measurement of global eustasy at the time.

Some of Conrad's insights have so permeated current thinking that they are now taken for granted. One example is the importance of “bioerosion”, a term he originated in 1966. In subsequent decades sedimentologists and biologists designed whole research programs and careers around expanding and quantifying the concept. Another example is his conception (with Ian Macintyre) of “keep-up, catch-up and give-up reefs”. This concept has been cited more frequently in the past decade than it was in the decade following its publication. These are but two of many “Neumannisms” that have become entrenched in the science. He was also one of the most effective early users of submersibles to conduct oceanographic research including the submersible *Aluminant* and an amazing 33 dives on WHOI's *DSV Alvin*.

At his academic home within the Marine Sciences Curriculum now the Department of Marine Science at the University of North Carolina—Chapel Hill, he won acclaim as being an outstanding member of the faculty. He was awarded the Bowman and Gordon Gray Chaired Professorship for Excellence in University Teaching, won the Student's Undergraduate Teaching Award (selected by student vote), was inducted into the UNC Distinguished Teaching and Research Scholars, and perhaps most importantly he was voted UNC's Favorite Faculty Award by that university's students.

What Conrad taught his students, scientific associates, and people lucky enough to be around him, represents his greatest scientific legacy. There is a generation of people who see things quite differently—much for the better—because they were fortunate enough to know Dr. A. Conrad Neumann.

Drill, Drill, Drill!

A Tribute to USGS Drillers Eugene F. Cobbs Jr, Eugene F. Cobbs III, and Jeffrey B. Grey



Eugene F. Cobbs, Jr.
1940-2010



Eugene F. Cobbs, III
1968-2018



Jeffrey B. Grey
1960-2017

Drilling is hard. Whether on a petroleum industry platform, a research vessel on the Atlantic Ocean, or a land-based rig, drilling is a dangerous profession that requires knowledge, physical strength, dexterity, stamina, innovation, and perseverance. Drillers are often away from home for extended periods of time, working long hours in adverse weather conditions such as high heat and humidity, ice and snow, and under the threat of severe storms. They need to be able to react at a moment's notice when problems arise, checking to make sure that equipment doesn't fail, blow-outs don't occur, wirelines don't break. As researchers, we often take for granted the people who work on rigs and who give their best to obtain the material and data we use to advance scientific research on both a global and regional scale.

Theme Session 5 "Drill, Drill, Drill" strives to highlight the contributions that drillers make to scientific research, focusing in particular on the drillers of the U.S. Geological Survey's Florence Bascom Geoscience Center in Reston, VA. For over 30 years the steadiness and calmness of Eugene Cobbs, Jr. (Big Gene), the inquisitiveness and competence of Eugene Cobbs, III (L'il Gene), and the high energy and enthusiasm of Jeffrey Grey (Jeffrey) drove the drilling program, which provided a wealth of material and data that has been utilized by geologists both within the USGS and in outside organizations. State geological surveys, national and international universities, the International Ocean Discovery Program, and other federal agencies have all benefitted from the success of this program. Without the efforts of these drillers, we would not have had the successful careers that define us today. So...the next time you are examining core samples, whether doing geochemical analyses of sediment samples, or looking down the eyepiece of a microscope at a fossil, or are putting together a geologic cross section, take a moment to reflect on the people who worked hard to get those valuable samples and resulting data to you. It is with respect and gratitude that we thank them for their efforts.

Jean M. Self-Trail, Ph.D.
U.S. Geological Survey

Kenneth Miller, Ph.D.
Rutgers University

Schedule of Events

EVENT	TIME	LOCATION
MONDAY, 16 MARCH		
FT1. The Central Appalachian Orogen: From Ancient Tectonics to Modern Seismicity—Dinner and trip introduction (Field Trip)	7–10 p.m.	Hyatt Regency Reston
TUESDAY, 17 MARCH		
FT1. The Central Appalachian Orogen: From Ancient Tectonics to Modern Seismicity (Field Trip)	7 a.m.	Hyatt Regency Reston, Hotel Lobby
THURSDAY, 19 MARCH		
FT2. Military Geology of the Manassas Battlefield Area, Virginia (Field Trip)	8 a.m.–6 p.m.	Hyatt Regency Reston, Hotel Lobby
FT3. Accreted Forearc, Continental, and Oceanic Rocks of Maryland's Eastern Piedmont: The Potomac Terrane, Baltimore Terrane, and Baltimore Mafic Complex (Field Trip)	7 a.m.–7 p.m.	Hyatt Regency Reston, Hotel Lobby
FT4. Age and Tectonic Significance of Diamictites at the Devonian–Mississippian Transition in the Central Appalachian Basin (Field Trip)	7:45 a.m.–5 p.m.	Hyatt Regency Reston, Hotel Lobby
SC1. Clastic and Carbonate Petrology—From Hand Samples to Thin Sections (Short Course)	8:30 a.m.–4:30 p.m.	USGS National Center-Reston: Room 3C129
SC2. Applied Micropaleontology for Non- Paleontologists: How to Interpret and Use Fossil Data (Short Course)	8:30 a.m.–4:30 p.m.	USGS National Center-Reston: Room BA 102B/C
SC3. Stormwater Management in Karst Terrain (Short Course)	8 a.m.–noon	Lake Fairfax
SC4. GSA On To the Future Professional Skills Workshop for Students (Short Course)	8 a.m.–5 p.m.	Grand Ballroom G
Experience Capitol Hill: Geoscience and Public Policy in Washington, D.C. (Ticketed Event)	8:30 a.m.–5:30 p.m.	Hyatt Regency Reston, Hotel Lobby
Exhibitor Set Up	noon–5 p.m.	Grand Ballroom A–D
USGS Headquarters Tour	1–2:30 p.m.	J.W. Powell Building, USGS Headquarters, Reston
USGS Headquarters Tour	2:30–4 p.m.	J.W. Powell Building, USGS Headquarters, Reston
Registration	4–8 p.m.	Conservatory
Speaker Ready Room	4–8:30 p.m.	Town Center Room A–B
Exhibits Open	6–8 p.m.	Grand Ballroom A–D
Welcoming Reception	6–8 p.m.	Grand Ballroom A–D
FT1. The Central Appalachian Orogen: From Ancient Tectonics to Modern Seismicity (Field Trip) Return	6 p.m.	Hyatt Regency Reston, Hotel Lobby

EVENT

TIME

LOCATION

FRIDAY, 20 MARCH

Session Chair Orientation	7–7:15 a.m.	Reston C
Registration	7 a.m.–5 p.m.	Conservatory
Speaker Ready Room	7 a.m.–6 p.m.	Town Center Room A–B
Exhibits Open	8 a.m.–5:30 p.m.	Grand Ballroom A–D

Morning Oral Technical Sessions

D1. Economic, Energy, and Engineering Geology	8–9:40 a.m.	Lake Thoreau
S2. The Appalachians, from North to South, from Crust to Mantle I	8 a.m.–noon	Regency Ballroom B
S5. Radionuclides: Biogeochemistry, Transport, and Geological Applications I	8 a.m.–noon	Regency Ballroom A
T8. Mega-Traces: Advances in Ichnology and Zoogeomorphology	8 a.m.–noon	Lake Audubon
T11. Integrating Field and Modeling Approaches to Understand Changing Coastal Systems	8 a.m.–noon	Lake Fairfax
D2. Environmental Geology and Karst	9:55 a.m.–noon	Lake Thoreau

Morning Poster Sessions: *Authors will be present from 10 a.m. to noon*

D12. Mineralogy/Crystallography (Posters)	8 a.m.–noon	Grand Ballroom A–D
D16. Petrology (Posters)	8 a.m.–noon	Grand Ballroom A–D
D21. Volcanology (Posters)	8 a.m.–noon	Grand Ballroom A–D
D6. Geomorphology, Quaternary Geology, and Soils (Posters)	8 a.m.–noon	Lake Anne
D8. Geoscience Education (Posters)	8 a.m.–noon	Grand Ballroom A–D
T18. Undergraduate Research II (Posters)	8 a.m.–noon	Grand Ballroom A–D

Geoscience Career Program Workshop Part 1: Career Planning and Networking (Workshop)	9–10 a.m.	Grand Ballroom G
Geoscience Career Program Workshop Part 2: Geoscience Career Exploration	10–11 a.m.	Grand Ballroom G

Roy J. Shlemon Mentors Program in Applied Geoscience	noon–1:30 p.m.	Grand Ballroom E
Mentoring Café	1:30–5:30 p.m.	Grand Ballroom G

Afternoon Oral Technical Sessions

T9. Neoproterozoic to Cambrian Transitions on the Appalachian, Laurentian Margin	1:30–3:10 p.m.	Lake Audubon
S5. Radionuclides: Biogeochemistry, Transport, and Geological Applications II	1:30–3:30 p.m.	Regency Ballroom A
S2. The Appalachians, from North to South, from Crust to Mantle II	1:30–5:30 p.m.	Regency Ballroom B
S3. From the Margins to the Deep: A Tribute to the Science and Art of A. Conrad Neumann	1:30–5:30 p.m.	Lake Fairfax
T14. Out of the Classroom, Out of the Box: Innovative Approaches to Geoscience Education	1:30–5:30 p.m.	Lake Thoreau
S6. Stratigraphic Problems and Solutions in the Appalachian Basin	3:25–5:30 p.m.	Lake Audubon

EVENT	TIME	LOCATION
S1. The Past is the Key to the Present—The Role of Paleontology and Geology in Management and Decision Making	3:45–5:30 p.m.	Regency Ballroom A
Afternoon Poster Sessions: Authors will be present from 3 to 5 p.m.		
D14. Paleoclimatology/Oceanography (Posters)	1:30–5:30 p.m.	Grand Ballroom A–D
D15. Paleontology (Posters)	1:30–5:30 p.m.	Grand Ballroom A–D
D17. Planetary Geology (Posters)	1:30–5:30 p.m.	Lake Anne
D3. Environmental Geoscience (Posters)	1:30–5:30 p.m.	Grand Ballroom A–D
D7. Geophysics (Posters)	1:30–5:30 p.m.	Grand Ballroom A–D
S1. The Past is the Key to the Present—The Role of Paleontology and Geology in Management and Decision Making (Posters)	1:30–5:30 p.m.	Lake Anne
T8. Mega-Traces: Advances in Ichnology and Zoogeomorphology (Posters)	1:30–5:30 p.m.	Lake Anne
Mentoring Roundtables	4–5:30 p.m.	Grand Ballroom G
Tectonics Group	5–7:30 p.m.	Reston B
SEPM Meeting and Reception	5:30–7:30 p.m.	Lake Thoreau

SATURDAY, 21 MARCH

GSA Southeastern Section Management Board Meeting	6:30–8 a.m.	Living Room
Session Chair Orientation	7–7:15 am	Reston C
GSA Campus Representative Appreciation Breakfast	7–8:30 a.m.	Grand Ballroom E
Registration	7 a.m.–5 p.m.	Conservatory
Speaker Ready Room	7 a.m.–6 p.m.	Town Center Room A–B
Exhibits Open	8 a.m.–5:30 p.m.	Grand Ballroom A–D

Morning Oral Technical Sessions

T1. Abiotic-Biotic Interactions in the Critical Zone	8–9:40 a.m.	Lake Thoreau
S4. New Developments in Diversity and Inclusion in the Geosciences	8 a.m.–noon	Regency Ballroom A
S7. The Grenville Orogen in Eastern North America	8 a.m.–noon	Regency Ballroom B
T28. Geoscience Careers for New Geoscience Graduates	8 a.m.–noon	Lake Fairfax
T29. Chemostratigraphic, Biotic, and Sedimentologic Changes through Earth History	8 a.m.–noon	Lake Audubon
T4. Geoarchaeology of Dynamic Landscapes	9:55 a.m.–noon	Lake Thoreau

Morning Poster Sessions: Authors will be present from 10 a.m. to noon

D1. Economic, Energy, and Engineering Geology (Posters)	8 a.m.–noon	Grand Ballroom A–D
D10. Karst (Posters)	8 a.m.–noon	Lake Anne
D9. Hydrogeology (Posters)	8 a.m.–noon	Lake Anne

EVENT	TIME	LOCATION
S3. From the Margins to the Deep: A Tribute to the Science and Art of A. Conrad Neumann (Posters)	8 a.m.–noon	Grand Ballroom A–D
T11. Integrating Field and Modeling Approaches to Understand Changing Coastal Systems (Posters)	8 a.m.–noon	Grand Ballroom A–D
T18. Undergraduate Research I (Posters)	8 a.m.–noon	Grand Ballroom A–D
Geoscience Career Program Workshop Part 3: Cover Letters, Résumés, and CVs	9–10 a.m.	Grand Ballroom G
GSA Northeastern Section Management Board Meeting	noon–1:30 p.m.	Living Room
John Mann Mentors Program in Applied Hydrogeology	noon–1:30 p.m.	Grand Ballroom E
Mentoring Café	1:30–5:30 p.m.	Grand Ballroom G
Afternoon Oral Technical Sessions		
D13. Paleobiology	1:30–5:30 p.m.	Lake Thoreau
D8. Geoscience Education	1:30–5:30 p.m.	Lake Audubon
T3. Paleolimnological Records of Climate and Environmental Change	1:30–5:30 p.m.	Regency Ballroom A
T5. Drill, Drill, Drill! A Tribute to USGS Drillers Eugene “Big Gene” Cobbs, Eugene “Little Gene” Cobbs, III, and Jeff Grey, and Their Contributions to Geologic Research East of the Mississippi River	1:30–5:30 p.m.	Regency Ballroom B
T27. Appalachian Petrology: A Session to Honor the Career of Dr. Robert J. Tracy	1:30–5:30 p.m.	Lake Fairfax
Afternoon Poster Sessions: Authors will be present from 3 to 5 p.m.		
D19. Structural Geology and Tectonics (Posters)	1:30–5:30 p.m.	Grand Ballroom A–D
T1. Abiotic-Biotic Interactions in the Critical Zone (Posters)	1:30–5:30 p.m.	Grand Ballroom A–D
S2. The Appalachians, from North to South, from Crust to Mantle (Posters)	1:30–5:30 p.m.	Grand Ballroom A–D
T4. Geoarchaeology of Dynamic Landscapes (Posters)	1:30–5:30 p.m.	Grand Ballroom A–D
S7. The Grenville Orogen in Eastern North America (Posters)	1:30–5:30 p.m.	Grand Ballroom A–D
T21. Geologic Maps, Digital Geologic Maps, Geophysical Maps, and Derivatives from Geologic and Geophysical Maps (Posters)	1:30–5:30 p.m.	Grand Ballroom A–D
T29. Chemostratigraphic, Biotic, and Sedimentologic Changes through Earth History (Posters)	1:30–5:30 p.m.	Lake Anne
Geology Club Officer Meet-Up	2–3 p.m.	Grand Ballroom E
Mentoring Panel	4:30–5:30 p.m.	Grand Ballroom G
Keynote Speaker: Dr. David Kring	6–7 p.m.	Regency Ballroom B
Map and Art Blast	7–9 p.m.	Grand Ballroom A–D
SUNDAY, 22 MARCH		
Session Chair Orientation	7–7:15 a.m.	Reston C
Registration	7 a.m.–noon	Conservatory

EVENT	TIME	LOCATION
Speaker Ready Room	7 a.m.–2 p.m.	Town Center Room A–B
Exhibits Open	8 a.m.–noon	Grand Ballroom A–D

FT5. The Geology of Washington, D.C. (Field Trip)	8:45 a.m.–4:30 p.m.	Hyatt Regency Reston, Hotel Lobby
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Morning Oral Technical Sessions

D5. Geomorphology & Quaternary Geology	8 a.m.–noon	Lake Thoreau
T10. Provenance of the Eastern North American Margin: From Triassic Rifting to Modern Sedimentation	8 a.m.–noon	Lake Fairfax
T12. Shale Production in the Eastern U.S.—E3: Environmental, Economic & Energy System Impacts	8 a.m.–noon	Regency Ballroom B
T19. Eastern Activities of the USGS Earth Mapping Resources Initiative	8 a.m.–noon	Lake Audubon
T26. Deciphering Active Tectonics and Seismic Hazard in Eastern North America	8 a.m.–noon	Regency Ballroom A

Morning Poster Sessions: *Authors will be present from 10 a.m. to noon*

T3. Paleolimnological Records of Climate and Environmental Change (Posters)	8 a.m.–noon	Lake Anne
T5. Drill, Drill, Drill! A Tribute to USGS Drillers Eugene “Big Gene” Cobbs, Eugene “Little Gene” Cobbs, III, and Jeff Grey, and Their Contributions to Geologic Research East of the Mississippi River (Posters)	8 a.m.–noon	Grand Ballroom A–D
T13. Developing and Using Open Educational Resources in the Geosciences (Posters)	8 a.m.–noon	Grand Ballroom A–D
T14. Out of the Classroom, Out of the Box: Innovative Approaches to Geoscience Education (Posters)	8 a.m.–noon	Grand Ballroom A–D
T18. Undergraduate Research III (Posters)	8 a.m.–noon	Grand Ballroom A–D
T27. Appalachian Petrology: A Session to Honor the Career of Dr. Robert J. Tracy (Posters)	8 a.m.–noon	Grand Ballroom A–D

Exhibitor Tear Down	12:30–6 p.m.	Grand Ballroom A–D
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Afternoon Oral Technical Sessions

D20. Structural Geology, Microstructures, and Geochronology	1:30–5:30 p.m.	Lake Fairfax
T2. Wetlands in a Changing World: Impacts of Environmental Change on Wetland Function and Ecosystem Services	1:30–5:30 p.m.	Regency Ballroom B
T23. New Developments in the Understanding of Pre-Appalachian Rocks of Eastern North America	1:30–5:30 p.m.	Regency Ballroom A
T30. Private Wells—Current Challenges and Opportunities	1:30–5:30 p.m.	Lake Audubon

Afternoon Poster Sessions: *Authors will be present from 3 to 5 p.m.*

D11. Marine/Coastal Science (Posters)	1:30–5:30 p.m.	Grand Ballroom E–G
D18. Sedimentary Geology and Stratigraphy (Posters)	1:30–5:30 p.m.	Lake Anne

EVENT	TIME	LOCATION
D4. Geochemistry (Posters)	1:30–5:30 p.m.	Grand Ballroom E–G
T2. Wetlands in a Changing World: Impacts of Environmental Change on Wetland Function and Ecosystem Services (Posters)	1:30–5:30 p.m.	Grand Ballroom E–G
S6. Stratigraphic Problems and Solutions in the Appalachian Basin (Posters)	1:30–5:30 p.m.	Grand Ballroom E–G
T10. Provenance of the Eastern North American Margin: From Triassic Rifting to Modern Sedimentation (Posters)	1:30–5:30 p.m.	Grand Ballroom E–G
T20. Defining 3D Geologic Mapping in the Eastern North America (Posters)	1:30–5:30 p.m.	Lake Anne
T26. Deciphering Active Tectonics and Seismic Hazard in Eastern North America (Posters)	1:30–5:30 p.m.	Grand Ballroom E–G

MONDAY, 23 MARCH

FT6. Geology and the Civil War at the North Anna River Fall Zone, Virginia (Field Trip)	6:30 a.m.–7:30 p.m.	Hyatt Regency Reston, Hotel Lobby
FT8. Proterozoic and Paleozoic Evolution of the Blue Ridge Geologic Province in Northern Virginia (Field Trip)	7:45 a.m.–7 p.m.	Hyatt Regency Reston, Hotel Lobby
FT7. Geology and Geomorphology of the Trout Rock Caves (Hamilton Cave, Trout Cave, New Trout Cave), Pendleton County, West Virginia (Field Trip)	8:30 a.m.	Hyatt Regency Reston, Hotel Lobby

TUESDAY, 24 MARCH 2020

FT7. Geology and Geomorphology of the Trout Rock Caves (Hamilton Cave, Trout Cave, New Trout Cave), Pendleton County, West Virginia Return	1 p.m.	Hyatt Regency Reston, Hotel Lobby
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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.

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



NOTE INDEX SYSTEM

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

* denotes speaker

FRIDAY, 20 MARCH 2020

MORNING ORAL TECHNICAL SESSIONS

SESSION NO. 1

D1. Economic, Energy, and Engineering Geology

8:00 AM, Hyatt Regency Reston, Lake Thoreau

Jennifer S. Rivers Cole, Presiding

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| 1-1 | 8:00 AM | Noweir, Mohamed Atef*; Fahil, Amr; Ghoneim, Eman; Masoud, Alaa: INTEGRATION AND ANALYSIS OF WELL LOGGING AND REMOTE SENSING DATA FOR EXPLORING NEW POTENTIAL GEOTHERMAL SITES ALONG THE GULF OF SUEZ, EGYPT |
| 1-2 | 8:20 AM | Fahil, Amr S.*; Ghoneim, Eman M.; Noweir, Mohamed Atef; Masoud, Alaa: IDENTIFICATION OF POTENTIAL HYDROTHERMAL MINERALIZATION ZONES ASSOCIATED WITH GEOTHERMAL HOTSPOT WATERS USING GEOSPATIAL ANALYSIS TECHNIQUES AND WORLDVIEW-3 IMAGERY AT AYN MUSA REGION, NORTHWESTERN SINAI, EGYPT |
| 1-3 | 8:40 AM | Rivers Cole, Jennifer S.*; Troyer, Drew: THE GEOSCIENCE OF RELIABILITY ENGINEERING – PREPARING POWER GENERATION PLANTS FOR HURRICANES AND OTHER NATURAL DISASTERS |
| 1-4 | 9:00 AM | Isphording, Wayne C.*: EXTINCTION IS FOREVER! A FURTHER REASON FOR STRICT CONTROL OF INDUSTRIAL FLY ASH AND POWER PLANT DISCHARGE PRODUCTS |
| 1-5 | 9:20 AM | Fiore, Alex R.*; Ashland, Francis X.; Reilly, Pamela A.: HYDROLOGIC RESPONSE ASSOCIATED WITH SHALLOW SLOPE FAILURES DURING A CLOUDBURST STORM IN THE ATLANTIC HIGHLANDS, NEW JERSEY |

SESSION NO. 2

D2. Environmental Geology and Karst

9:55 AM, Hyatt Regency Reston, Lake Thoreau

A.K.M. Azad Hossain, Presiding

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| 2-1 | 9:55 AM | Hossain, A.K.M. Azad*; Blanton, Richard; Mathias, Caleb Andrew: QUANTITATIVE REMOTE SENSING OF SURFACE WATER QUALITY IN SOUTHEAST TENNESSEE USING PLANET DOVE IMAGERY |
| 2-2 | 10:15 AM | Geary, Kaitlin*; Sun, Hongbing: ARSENIC LEVEL IN RICE OF THE US, ITS POSSIBLE LINKS TO SOIL ARSENIC AND HIGHER BLOOD ARSENIC LEVEL IN ASIAN AMERICANS |
| 2-3 | 10:35 AM | Benton, Joshua R.*; Schreiber, Madeline E.; McGuire, Kevin; Bailey, Scott; Strahm, Brian D.; Ross, Donald S.; Pennino, Amanda; Duston, Stephanie; Bower, Jennifer: DYNAMICS OF GROUNDWATER FLOW DIRECTION IN THE CRITICAL ZONE OF A FORESTED, GLACIATED CATCHMENT |
| 2-4 | 10:55 AM | Maharjan, Madan*: IMPACTS OF HIGH-FREQUENCY INTERMITTENT PUMPING ON GROUNDWATER AND SURFACE WATER INTERACTIONS ALONG THE REGULATED STREAMS |
| 2-5 | 11:15 AM | Denton, Robert K.*: HOW THE MADISON CAVE ISOPOD, ANTROLINA LIRA CAN SAVE THE PHREATIC AQUIFER |
| 2-6 | 11:35 AM | Valentino, Joshua*; Denton, Robert K.: THE USE OF DYE TRACING TO DEVELOP A MITIGATION AND RESPONSE PLAN FOR TWO KARST-BASED PUBLIC WATER SUPPLIES IN AUGUSTA COUNTY, VIRGINIA |

SESSION NO. 3

S2. The Appalachians, from North to South, from Crust to Mantle I (GSA Structural Geology and Tectonics Division; GSA Geophysics and Geodynamics Division)

8:00 AM, Hyatt Regency Reston, Regency Ballroom B

Allison R. Severson, Yvette D. Kuiper, Maureen D. Long, Lara S. Wagner and Christopher M. Bailey, Presiding

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| 3-1 | 8:00 AM | Murphy, Benjamin S.*; Egbert, Gary D.; Bedrosian, Paul A.; Kelbert, Anna: MAGNETOTELLURIC INSIGHTS INTO THE |
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- LITHOSPHERIC ARCHITECTURE AND GEODYNAMIC HISTORY OF THE EASTERN UNITED STATES**
- 3-2 8:20 AM Li, Cong*; Gao, Haiying; Williams, Michael L.: **SEISMIC CHARACTERISTICS OF THE EASTERN NORTH AMERICAN CRUST WITH PS CONVERTED WAVES: TERRANE ACCRETION AND MODIFICATION OF CONTINENTAL CRUST**
- 3-3 8:40 AM Horton, J. Wright*; McAleer, Ryan J.; Holm-Denoma, Christopher S.; Pianowski, Laura S.; Vazquez, Jorge A.: **PRELIMINARY U-PB GEOCHRONOLOGY OF PROTEROZOIC AND PALEOZOIC ROCKS BENEATH THE ATLANTIC COASTAL PLAIN FROM MARYLAND TO SOUTH CAROLINA**
- 3-4 9:00 AM Karabinos, Paul*; Crowley, James L.; Jaret, Steven J.; Hodgins, E.B.; Macdonald, Francis A.: **IAPETUS SHRUGGED: THE EARLY RIFTING RECORD OF LAURENTIA IN THE NEW ENGLAND AND QUÉBEC APPALACHIANS AND THE GENERATION OF PERI-LAURENTIAN MICROCONTINENTS**
- 3-5 9:20 AM Crespi, Jean*; Robinson, Jessica; Rosen, Madison: **STRAIN PATTERNS IN THE TACONIC ALLOCHTHON OF THE NORTHERN APPALACHIANS AND THEIR BEARING ON DEFORMATION PARTITIONING IN LOW-GRADE METAMORPHIC ROCKS**
- 9:40 AM **BREAK**
- 3-6 9:55 AM Webb, Laura E.*; Karabinos, Paul; Klepeis, Keith A.: **EVIDENCE FOR SALINIC AND ACADIAN REACTIVATION OF TACONIC THRUSTS ALONG THE WESTERN GREEN MOUNTAIN FRONT**
- 3-7 10:15 AM Waldron, John W.F.*; McCausland, Phil J.A.; Schofield, David I.; Barr, Sandra M.: **A KINEMATIC MODEL FOR IAPETUS OCEAN CLOSURE**
- 3-8 10:35 AM Bailey, Christopher M.*; Duke, Hope J.; Foster-Baril, Zachary; Stockli, Daniel F.: **TERRANE ACCRETION AND TRANSPRESSION IN THE CENTRAL APPALACHIAN PIEDMONT: AN EXAMPLE FROM THE ENIGMATIC GOOCHLAND TERRANE**
- 3-9 10:55 AM Hillenbrand, Ian W.*; Williams, Michael L.; Tjapkes, Daniel J.; Jercinovic, Michael J.: **THERMOISOTOPIC AND PETROCHRONOLOGIC CONSTRAINTS ON CRUSTAL EVOLUTION OF THE ACADIAN OROGENY**
- 3-10 11:15 AM Pollock, Stephen G.*: **LATE SILURIAN TO EARLY DEVONIAN MAFIC VOLCANISM AND THE CHANGE TO EARLY DEVONIAN SEDIMENTATION IN THE CONNECTICUT VALLEY – GASPÉ TROUGH, NORTHERN MAINE**
- 3-11 11:35 AM Bosbyshell, Howell*; Melnick, Daniel J.: **CONTRASTING TECTONO-THERMAL HISTORIES ACROSS THE ROSEMONT SHEAR ZONE IN THE CENTRAL APPALACHIAN PIEDMONT OF SE PENNSYLVANIA AND NORTHERN DELAWARE**
- 4-3 8:45 AM Grande, Alexandra*; Schmidt, Amanda H.; Bierman, Paul; Corbett, Lee B.; López Lloreda, Carla; McDowell, William H.; Caffee, Marc W.: **TEMPORAL VARIANCE OF EROSION IN LUQUILLO, PUERTO RICO POST-HURRICANE MARIA DETECTED USING TIME SERIES OF ISOTOPIC MEASUREMENTS IN DETRITAL SEDIMENT**
- 4-4 9:05 AM Renshaw, Carl*; Dethier, Evan N.; Landis, Joshua D.: **FATE OF ORGANIC-RICH SUSPENDED SEDIMENT DURING SMALL TO INTERMEDIATE STORMS**
- 4-5 9:25 AM Landis, Joshua D.*; Dethier, Evan N.; Renshaw, Carl E.: **ATMOSPHERIC DEPOSITION OF FALLOUT RADIONUCLIDES (FRNS) ⁷BE AND ²¹⁰PB: PATTERNS, PROCESSES AND POST-DEPOSITIONAL FATES**
- 9:45 AM **BREAK**
- 4-6 10:00 AM Walter, Robert*; Daly, Victoria; Schwarz, Eric; Wilson, Emily; Gellis, Allen C.: **SOME INSIGHTS INTO PARTICLE SURFACE ION-EXCHANGE REACTIONS WITH FALLOUT RADIONUCLIDES**
- 4-7 10:20 AM Kaste, James M.*; Elmore, Andrew J.; Volante, Paul: **BOMBS AND THE BEES: LEGACY RADIATION IN HONEY SHOWS MODERN PLANT CYCLING OF A COLD WAR CONTAMINANT**
- 4-8 10:40 AM Volante, Paul*; Kaste, James M.; Balascio, Nicholas L.: **ADVANTAGES OF ²⁴¹AM AS A DATING TOOL IN SEDIMENTARY SYSTEMS**
- 4-9 11:00 AM Santschi, Peter H.*: **SEDIMENT DATING FOR POLLUTANT INPUT RECONSTRUCTION AND ECOSYSTEM RECOVERY ASSESSMENT**

SESSION NO. 5**T8. Mega-Traces: Advances in Ichnology and Zoogeomorphology**

8:00 AM, Hyatt Regency Reston, Lake Audubon

Ilya V. Buynevich, Stephen T. Hasiotis and Logan A. Wiest, Presiding

- 8:00 AM **INTRODUCTORY REMARKS**
- 5-1 8:05 AM Turk, Katherine A.*; Darroch, Simon A.F.: **INTEGRATED ICHNOLOGY AND STRATIGRAPHY OF THE LATE EDIACARAN NASEP-HUNS TRANSITION (NAMA GROUP, SOUTHERN NAMIBIA)**
- 5-2 8:25 AM Metz, Robert*: **TRACE FOSSILS IN FLUVIAL DEPOSITS OF THE UPPERMOST STOCKTON FORMATION (LATE TRIASSIC), WEST-CENTRAL NEW JERSEY**
- 5-3 8:45 AM Hyatt, James A.*; Farlow, James O.; Galton, Peter: **TECHNIQUES USED TO BUILD PHOTOGRAMMETRIC MAPS/MODELS FOR ICHNOFOSSILS AT DINOSAUR STATE PARK, ROCKY HILL, CONNECTICUT**
- 5-4 9:05 AM Wiest, Logan A.*; Forman, Steven L.; Mayhack, Connor; Lukens, William E.; Bassoo, Roy; Tew, Victoria; Marin, Liliana; Kocurek, Gary: **A LARGE LATE QUATERNARY PALEOLAKE NEAR MONAHANS, TEXAS, INFERRED BY LARGE-SCALE BIOGENIC STRUCTURES**
- 5-5 9:25 AM Lukens, William E.*; Wiest, Logan A.; Nebel, Angela: **CAMBORYGMA ASSEMBLAGE IN THE AFTERMATH OF A YELLOWSTONE HOTSPOT ERUPTION**
- 9:45 AM **BREAK**
- 5-6 10:00 AM Buntin, Rogers C.C.*; Hasiotis, Stephen T.: **SPATIOTEMPORAL ANALYSIS OF THE ICHNOGENUS TEREDOLITES: EVIDENCE OF COMPETITION, SALINITY, AND PALEOENVIRONMENT**
- 5-7 10:20 AM Hasiotis, Stephen T.*; Platt, Brian F.; Flaig, Peter P.: **CONTINENTAL MEGA-ICHOLOGY – TRACE FOSSILS AS PROXIES FOR THE ROLES OF ORGANISMS AS A MAJOR SOIL-FORMING FACTOR AND AS ECOSYSTEM ENGINEERS OF THE CRITICAL ZONE THROUGH DEEP TIME**
- 5-8 10:40 AM Buynevich, Ilya V.*; Hasiotis, Stephen T.; Wiest, Logan A.: **ZOOGEOMORPHIC INDICATORS OF (PALEO-)WATER-LEVEL POSITIONS**

SESSION NO. 4**S5. Radionuclides: Biogeochemistry, Transport, and Geological Applications I**

8:00 AM, Hyatt Regency Reston, Regency Ballroom A

James Kaste and Joshua D. Landis, Presiding

- 8:00 AM **INTRODUCTORY REMARKS**
- 4-1 8:05 AM Pizzuto, James*; Aalto, Rolf; Bodek, Sophie; Karwan, Diana L.; Marquard, Julia; O'Neal, Michael; Sturchio, N.C.: **QUATERNARY-PRESENT SEDIMENT TRANSPORT AND GEOMORPHOLOGY OF THE WHITE CLAY CREEK: INSIGHTS FROM GEOMORPHIC MAPPING AND RADIONUCLIDES**
- 4-2 8:25 AM Karwan, Diana L.*; Dalzell, Brent J.; Pawlowski, Ethan; Rose, Lucy; Fitzpatrick, Faith; Williamson, Tanja; Kolka, Randy: **USE OF FALLOUT RADIONUCLIDES TO ASSESS FIELD-TO-GAGE SEDIMENT DYNAMICS**

SESSION NO. 6**T11. Integrating Field and Modeling Approaches to Understand Changing Coastal Systems (GSA Marine and Coastal Geoscience Division; Eastern Section–SEPM (Society for Sedimentary Geology))**

8:00 AM, Hyatt Regency Reston, Lake Fairfax

Justin L. Shawler, Rose Palermo, Arye Janoff and Isamar Cortes, Presiding

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| | 8:00 AM | INTRODUCTORY REMARKS | 7-3 | 3 | Zeblicky, Timothy, A.*; Dunn, Richard K.: STREAM TERRACE EVOLUTION DRIVEN BY DESCENDING PROGLACIAL LAKE LEVELS IN CENTRAL VERMONT |
| 6-1 | 8:05 AM | Ramsey, Kelvin W.*; Mattheus, C. Robin; Tomlinson, Jaime L.: HOLOCENE GEOLOGIC AND CLIMATE HISTORY OF ONSHORE AND OFFSHORE DELMARVA PENINSULA | 7-4 | 4 | Sumell, Karissa R.*; Stroup, Justin S.; King, Sarah J.; Frieman, Richard A.: LAKE AND WETLAND CHANGES PRE AND POST I-90 CONSTRUCTION: AN ASSESSMENT OF THE EVOLUTION OF JUNIUS PONDS, NY FROM 1938 TO 2019 |
| 6-2 | 8:25 AM | Oakley, Bryan A.*: STORM DRIVEN MIGRATION (1883 – 2014) OF THE NAPATREE BARRIER, RHODE ISLAND, USA | 7-5 | 5 | Kennedy, Linda*: EVIDENCE OF FIRE ACTIVITY, LANDSLIDES, AND ALLUVIAL FAN CONSTRUCTION DURING THE MID-HOLOCENE IN NORTH-CENTRAL PENNSYLVANIA |
| 6-3 | 8:45 AM | Hughes, Zoe J.*; Houttuintj Bloemendaal, Lucila J.; FitzGerald, Duncan M.; Gill, Alison C.: PATTERNS OF EROSION, DEPOSITION AND SEDIMENT TRANSPORT IN ESSEX BAY, MA | 7-6 | 6 | Maier, Joseph*; Ploss, Kathryn; Moro, Gabrielle; Christopher, John; Clark, Mikayla; DiFrancesco, Nicholas: PETROLOGY AND GRAIN SIZE OF GLACIAL SEDIMENT AT RICE CREEK FIELD STATION, OSWEGO, NY |
| 6-4 | 9:05 AM | Miselis, Jennifer*; Wei, Emily A.; Ciarletta, Daniel J.: SHOREFACE GEOLOGICAL DATA FROM NATURAL AND DEVELOPED BARRIER ISLANDS PROVIDE INSIGHTS INTO COASTAL VULNERABILITY | 7-7 | 7 | Bierly, Aaron D.*; Culleton, Brendan J.; Davis, Margaret A.; Graham, Russell W.: RADIOCARBON DATING THE CORNELIUS MASTODON OF SALTILLO, HUNTINGDON COUNTY, PENNSYLVANIA |
| 6-5 | 9:25 AM | Ciarletta, Daniel J.*; Miselis, Jennifer: TOWARDS RECONSTRUCTING SHOREFACE SEDIMENT FLUXES AT FIRE ISLAND, NY AND LONG BEACH ISLAND, NJ | 7-8 | 8 | Murphy, Daniel P.*; Brunstad, Keith A.; Hasbargen, Leslie: SUSTAINABILITY ANALYSIS AND SEDIMENTATION IN THE LOWER RESERVOIR ONEONTA, NY; A DRAINED PERSPECTIVE |
| | 9:45 AM | BREAK | 7-9 | 9 | Springston, George E.*; Gale, Marjorie; Wright, Stephen F.: THE COTTON BROOK LANDSLIDE IN THE GREEN MOUNTAINS OF NORTH-CENTRAL VERMONT |
| 6-6 | 10:00 AM | Clark, Mikayla*; Lee, Rachel; Frieman, Richard: MONITORING SUBSURFACE AND SURFACE PROCESSES AT MCINTYRE'S BLUFF, STERLING, NY, USING 3D MODELING AND GEOPHYSICAL METHODS | 7-10 | 10 | Tamulonis, Kathryn; Cole, Zachary*; Spencer, Jocelyn; Fleeeger, Gary M.: SEDIMENTOLOGY OF THE JACKSVILLE ESKER-DELTA COMPLEX IN WESTERN PENNSYLVANIA |
| 6-7 | 10:20 AM | Cohn, Nicholas*; Conery, Ian W.; Brodie, Kate L.; Spore, Nicholas: OBSERVATIONS OF STORM-INDUCED SCARPING AND SLUMPING DYNAMICS IN THE OUTER BANKS, NC | 7-11 | 11 | Ruck, John; Hertzler, Nicholas*; Merritts, Dorothy; Walter, Robert C.; Marshall, Jill A.; Corbett, Lee B.; Caffee, Marc W.; Bierman, Paul R.: FIELD AND COSMOGENIC NUCLIDE STUDIES OF POSSIBLE LAST GLACIAL MAXIMUM GELIFLUCTION BENCHES IN NORTHEASTERN PENNSYLVANIA |
| 6-8 | 10:40 AM | Kolodin, Jesse C.*; Lorenzo-Trueba, Jorge; Hoagland, Porter; Jin, Di; Ashton, Andrew D.: EXPLORING THE RELATIONSHIP BETWEEN ARTIFICIAL DUNES AND BEACHFRONT PROPERTY VALUES: INSIGHTS FROM THEORY AND A HEDONIC PRICING MODEL | 7-12 | 12 | Sines, Nathan Douglas*: MOCK GLACIAL CLASTS AND LAND FORMS: AN INVESTIGATION INTO CENTRAL APPALACHIAN PERIGLACIAL AND FLUVIAL ANOMALIES |
| 6-9 | 11:00 AM | Castagno, Katherine*; Donnelly, Jeffrey P.; Woodruff, Jonathan D.: APPLICATIONS AND CAVEATS OF INVERSE MODELING TO RECONSTRUCT TROPICAL CYCLONES | 7-13 | 13 | Megee, Collin*; O'Neal, Michael; Clemens, Joseph; McMaster, Erica; Pizzuto, James E.: INSIGHTS FROM REPEATED TERRESTRIAL LASER-SCANNER SURVEYS OF CHANNEL-WALL EROSION ALONG THE SOUTH RIVER, VIRGINIA |
| 6-10 | 11:20 AM | Long, Joshua*; Hanebuth, Till J.J.: THE QUATERNARY STRATIGRAPHIC ARCHITECTURE OF A LOW-ACCOMMODATION, PASSIVE-MARGIN SHELF (SANTEE DELTA, SOUTH CAROLINA, USA) | 7-14 | 14 | Johnson, Jonathan W.*; Bernhardt, Christopher: FORENSIC PALYNOLOGY: A STATISTICAL COMPARISON OF KNOWN SAMPLES ALONG A TRANSECT IN WESTERN VIRGINIA |
| 6-11 | 11:40 AM | Mallinson, David J.*; Culver, Stephen J.; DeWitt, Regina; Cressman, Amy W.; Gudmunson, Erik; Snyder, Kelli; Mallinson, David: UNDERSTANDING THE COASTAL RESPONSE TO LATE PLEISTOCENE SEA-LEVEL CHANGE IN NORTH CAROLINA, USA: AN ANALOG FOR FUTURE COASTAL EVOLUTION | 7-15 | 15 | Whately, Emily*; Connelly, Samuel; Stephenson, George; Watts, Chester F.: A BATHYMETRIC AND GEOMORPHOLOGICAL ANALYSIS OF CLAYTOR LAKE USING SONAR TECHNOLOGY |
| | | | 7-16 | 16 | Wijesinghe, Dhanuska B.*; Everett, Andrew; Withana Gamage, Prabhathi W.; St. John, Kristen; Eaton, L. Scott: IMPACT OF REFRACTIVE INDEX ON DETERMINING THE PARTICLE SIZE DISTRIBUTION OF SOIL SAMPLES IN THE VALLEY AND RIDGE AND PIEDMONT PROVINCES OF VIRGINIA |
| | | | 7-17 | 17 | Davis, Elizabeth Heather*; O'Neal, Michael; Lowery, Darrin L.: A NEW STRATIGRAPHIC INTERPRETATION OF THE SURFACE SANDS OF THE LOWER DELMARVA PENINSULA, VIRGINIA USA |
| | | | 7-18 | 18 | Welty, Joshua*; Jarvis, William R.; Nandi, Arpita; Luffman, Ingrid: WETLAND DELINEATION IN DEVIL'S KITCHEN BRANCH, GREENEVILLE, TN |
| | | | 7-19 | 19 | Vickery, Caroline Elizabeth*; Campbell, Claire; Andersen, C. Brannon: CONSTRAINTS OF LOSS ON IGNITION AS A PREDICTOR OF SOIL ORGANIC CARBON IN PIEDMONT SOILS |
| | | | 7-20 | 20 | Wolcott, Caroline C.*; Andersen, C. Brannon; Allen, Karen: ORGANIC CARBON AND NITROGEN CONCENTRATIONS AS INDICATORS OF SOIL QUALITY IN CATTLE FARMS IN THE BELLBIRD BIOLOGICAL CORRIDOR, COSTA RICA |

MORNING POSTER TECHNICAL SESSIONS

SESSION NO. 7**D6. Geomorphology, Quaternary Geology, and Soils (Posters)**

8:00 AM, Hyatt Regency Reston, Lake Anne

Authors will be present from 10 AM to 12 PM

Booth #

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| 7-2 | 2 | Franzi, David A.*; Preston, Mark A.; Romanowicz, Edwin: WASHBOARD MORaine IN THE SARANAC VALLEY, NORTHEASTERN ADIRONDACK MOUNTAINS, NEW YORK—EVIDENCE FOR SURGE BEHAVIOR DURING REGIONAL LATE WISCONSINAN DEGLACIATION? |
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SESSION NO. 8***DB. Geoscience Education (Posters)***

8:00 AM, Hyatt Regency Reston, Grand Ballroom A-D

Authors will be present from 10 AM to 12 PM

Booth #	
8-1	1 Larsen, Kristine*; Fimi, Dimitra: "IT MAKES ME WEEP TO LEAVE THEM": THE IMPACT OF THE CHEDDAR GORGE, SOMERSET, CAVE SYSTEM ON THE IMAGINATION OF J.R.R. TOLKIEN
8-2	2 Difo, Gloribel*; Domack, Cynthia R.: A WALKING TOUR OF PERUGIA, ITALY: EXPLORING THE BUILDING STONES USED IN THE CITY'S CONSTRUCTION
8-3	3 Marks, Alexandria M.*; Domack, Cynthia R.: GUIDEBOOK TO FOSSIL GROVE AND THE BEARSDEN SHARK IN GLASGOW, SCOTLAND
8-4	4 Moore-Driskell, Melissa M.*; Buckley, Gregory A.: ACCENTUATING REGIONAL ANOMALIES TO "GLOBAL" WARMING AS A METHOD OF TEACHING CLIMATE CHANGE IN THE SOUTHEASTERN UNITED STATES
8-5	5 Schram, Bethany M.*; Sheffield, Sarah L.: USING VISUAL MEDIA TO ENGAGE HIGH SCHOOLERS IN EARTH SCIENCES
8-6	6 Vieira, Justin*; Voegelé, Kristyn K.; Boles, Zachary M.; Ullmann, Paul Victor: BUILDING A COMPREHENSIVE, MULTI-USE FOSSIL IDENTIFICATION GUIDE FOR THE EDELMAN FOSSIL PARK FOR EDUCATION AND OUTREACH
8-7	7 Moro, Gabrielle*; Insley, Ian; Christopher, John; DiFrancesco, Nicholas: MIDDLE SCHOOL STUDENT CONTRIBUTIONS TO UNDERGRADUATE EARTH SCIENCE RESEARCH AT RICE CREEK FIELD STATION, OSWEGO, NY
8-8	8 Blocher, William*: CONSTRUCTING ANALOGIES FOR THE COMMUNICATION OF GEOLOGICAL CONCEPTS
8-9	9 Bateman, Kathryn M.*; Shipley, Thomas F.; Davatzes, Alexandra K.: SPATIAL SKILLS USE IN GEOLOGICAL TASKS: DESIGNING TOOLS FOR IMPROVING UNDERGRADUATE EDUCATION

SESSION NO. 9***D12. Mineralogy/Crystallography (Posters)***

8:00 AM, Hyatt Regency Reston, Grand Ballroom A-D

Authors will be present from 10 AM to 12 PM

Booth #	
9-1	10 Doyle, Emily Elizabeth*; Hanson, Lindley S.; Allen, Douglas: APPLICATION OF XRF TO THE CORRELATION OF COLONIAL BRICKS TO A LOCAL CLAY DEPOSIT IN SOUTHWESTERN NEW HAMPSHIRE
9-2	11 Brown, Virginia Lee*; Carmichael, Sarah K.: EBSD AND TRACE ELEMENT ANALYSIS OF REPLACEMENT DOLOMITE IN THE LATEMAR PLATFORM
9-3	12 Mangold, Lucas K.*; Bailey, David G.: CHEMICAL AND MINERALOGICAL ANALYSIS OF FE-RICH MICROSPPHERULES OF UNKNOWN ORIGIN FROM CENTRAL NEW YORK SEDIMENTS
9-4	13 Stokes, M. Rebecca*; McAleer, Ryan J.; Montgomery, Paul: DETAILED ANALYSIS OF X-RAY DIFFRACTION DATA TO RESOLVE MULTIPLE POPULATIONS OF A SINGLE MINERAL: APPLICATIONS IN INTERPRETING THERMOCHRONOLOGIC, STRUCTURAL, AND SEDIMENTOLOGICAL DATA
9-5	14 Kelk, Rachel M.*; Farthing, Dori J.; Leonard, Maria L.: MINERALOGICAL ANALYSIS OF IRON SLAG FROM STANDISH, NY
9-6	15 Welch, Robert M.*; Bailey, David G.: THE "MINFORM" APP: A 21 ST CENTURY APPROACH TO MINERAL FORMULA CALCULATION

SESSION NO. 10***D16. Petrology (Posters)***

8:00 AM, Hyatt Regency Reston, Grand Ballroom A-D

Authors will be present from 10 AM to 12 PM

Booth #	
10-1	16 Kolkas, Mossbah; Benimoff, Alan I.*: GEOCHEMISTRY AND PARAGENETIC SEQUENCE OF THE FRANKLIN MARBLE, NEW JERSEY
10-2	17 Deasy, Ryan T.*: PERVASIVE AND FAULT-RELATED ALTERATION TRENDS IN OCEANIC CRUST: IMPLICATIONS FOR THE INTERPRETATION OF AMPHIBOLITES AND GREENSTONES IN OROGENIC BELTS
10-3	18 Anderkin, Christian J.*; Harris, Connor J.; Mueller, Paul A.: PETROLOGY AND GEOCHEMISTRY OF FLUORESCENT SYENITE COBBLES FROM AGATE BEACH, MI, USA
10-4	19 Muller, Isabella P.*; Owens, Brent E.: FURTHER INVESTIGATIONS OF THE UNION MILL GNEISS IN THE RALEIGH TERRANE, PIEDMONT PROVINCE, VIRGINIA
10-5	20 Owens, Brent E.*; Johnson, Thomas A.; Polly, Caroline E.: GEOCHEMISTRY AND GEOCHRONOLOGY OF A MONZODIORITIC PHASE OF THE PETERSBURG BATHOLITH, EASTERN PIEDMONT PROVINCE, VIRGINIA
10-6	21 Burgess, Jerry L.*; Becker, Naomi A.; Holder, Robert M.; Piccoli, Philip M.; Viète, Daniel R.: GEOCHEMICAL AND THEMobarometric CONSTRAINTS ON THE PERRY HALL AND TECTONICALLY ASSOCIATED GNEISSES FROM THE BALTIMORE AREA PIEDMONT, MARYLAND
10-7	22 Wright, Rebecca J.*; Hanson, Lindley S.; Toraman, Erkan: REINVESTIGATION OF THE ORIGIN OF MARBLEHEAD NECK PLUTONIC AND VOLCANIC ROCKS USING INTEGRATED FIELD, PETROLOGICAL, AND GEOCHRONOLOGICAL ANALYSIS
10-8	23 Conklin, Jonathan*; Ferry, Veronica; Hall, Madi; Ingram, Kenya J.; Sammler, Vivian; Suminski, Marguerite; Taylor, Cypress; Fagan, Amy L.; Waters-Tormey, Cheryl: A STORY OF BLANTON BRANCH ULTRAMAFICS: HOW AN OUTCROP EXPOSES THE HISTORY OF THE MANTLE
10-9	24 Taylor, Kaitlin C.*; Charney, Allison Beth; Steinen, Randolph: TRACKING STORAGE, MIXING, AND DIFFERENTIATION OF A MANTLE MELT IN THE UPPER CRUST: A CASE STUDY FROM LAMPROPHYRE MEGACRYST COMPOSITIONS
10-10	25 Shteynman, Leah*; Carley, Tamara; Jaret, Steven J.: UTILITY OF ZIRCON-HOSTED MELT INCLUSIONS FOR CHARACTERIZING THE MILLBRIG K-BENTONITE
10-11	26 Fuorry, Donald T.*; DeLuca, William; Engel, Rudolph; Severs, Matthew J.: GEOCHEMICAL AND MAGMATIC RELATIONSHIPS OF LATE CRETACEOUS TO LATE TERTIARY IGNEOUS ROCKS FROM SOUTHEAST ARIZONA
10-12	27 Becker, Naomi A.*; Browning-Hanson, Joseph; Holder, Robert M.; Nelson, Wendy R.; Burgess, Jerry L.; Viète, Daniel R.: GEOCHEMICAL PROGRESSION IN LAVAS AND SHALLOW INTRUSIVES OF THE APPALACHIAN-CALEDONIAN LEKA OPHIOLITE COMPLEX, NORWAY
10-13	28 Dawson, Michael J.*; Nelson, Wendy R.; Piccoli, Philip; Pitcavage, Erica; Furman, Tanya: EXPLORING THE ORIGIN OF PYROXENITES THROUGH SPINEL COMPOSITIONS OF WESTERN RIFT UGANDAN XENOLITHS
10-14	29 Currier, Ryan*; Viquez, Joslyne: TEXTURAL ANALYSIS OF LAYERING IN THE DAIS LAYERED MAFIC INTRUSION, ANTARCTICA
10-15	30 Thompson, Sara*; Fornash, Katherine: TRACKING COMPOSITIONAL AND MINERALOGICAL CHANGES ASSOCIATED WITH THE BLUESCHIST-TO-GREENSCHIST TRANSITION IN METABASALTS FROM MIHALIÇCIK, TURKEY
10-16	31 Lederer, Graham W.*; Cottle, John M.; Larson, Kyle P.: INHERENT INHERITANCE: RESOLVING ISOTOPIC HETEROGENEITY OF COMPOSITE PLUTONS IN THE HIMALAYA WITH MONAZITE PETROCHRONOLOGY
10-17	32 Riley, Jessica R.*; Taylor, Brendan M.; Fleming, Thomas H.: GEOCHEMISTRY OF JURASSIC DOLERITE INTRUSIONS IN THE OHIO RANGE AND SOUTHERN QUEEN MAUD MOUNTAINS, ANTARCTICA

- 10-18 33 Ruger, Edward C.V.*; Rein, Isabelle M.T.; Connors, L.; Carley, Tamara L.: **USING ICELANDIC APATITES TO INVESTIGATE ELEVATED CONTENTS OF RARE EARTH ELEMENTS WITHIN ICELAND**

SESSION NO. 11**D21. Volcanology (Posters)**

8:00 AM, Hyatt Regency Reston, Grand Ballroom A-D

Authors will be present from 10 AM to 12 PM

- Booth #
- 11-1 34 Rascoe, Sean*; Brunstad, Keith A.: **PRELIMINARY CONSTRAINTS ON THE LENGTHS OF THE TIETON ANDESITE LAVA FLOWS**
- 11-2 35 Cozine, Rosemary M.*; Wais, P.V.; Overacker, Thomas T.; Mastropietro, N.A.; Brunstad, Keith A.: **TEXTURAL CONSTRAINTS OF PLAGIOCLASE PHENOCRYSTS IN THE TIETON ANDESITE FLOW: CLUES TO THE MAGMATIC SYSTEM**
- 11-3 36 Coron, Cynthia R.*; Fleming, Thomas H.; Halloran, Shannon M.: **CHARACTERIZATION OF A VOLCANIC BRECCIA (JURASSIC), HARTFORD BASIN, CT**
- 11-4 37 Yandle, Matthew*; Fidler, Mary Kate: **ERUPTIVE HISTORY OF A BIMODAL VOLCANIC TERRANE: NEW GEOLOGIC MAPPING AND WHOLE ROCK GEOCHEMISTRY OF THE BLACK HILLS, SOUTH-CENTRAL OREGON**

SESSION NO. 12**T18. Undergraduate Research II (Posters) (Council on Undergraduate Research Geosciences Division)**

8:00 AM, Hyatt Regency Reston, Grand Ballroom A-D

Authors will be present from 10 AM to 12 PM

- Booth #
- 12-1 38 Wilk, Kierra*; Hemingway, Jordon; Johnston, David T.: **ISOTOPIC AND EXPERIMENTAL INSIGHTS ON THE MECHANISMS OF PYRITE OXIDATION**
- 12-2 39 Edwards, Felix Alexandre*; Black, Benjamin Alexander; Martini, Anna M.; Jones, David S.: **SOURCES OF MERCURY DURING LARGE IGNEOUS PROVINCE EMPLACEMENT: THE CENTRAL ATLANTIC MAGMATIC PROVINCE AND SIBERIAN TRAPS**
- 12-3 40 Gaffney, Arianna*; Mana, Sara; Muirhead, James D.; Fischer, Tobias P.: **TESTING FOR MAGMATIC CO₂ DEGASSING ABOVE THE NORTH APPALACHIAN ANOMALY**
- 12-4 41 Rappoccio, Rachel M.*; Johnson, Elizabeth A.; Myers, Madison; Wallace, Paul; Wilson, Colin J.N.: **A COMPARISON OF HYDROXYL ABUNDANCES IN COEXISTING FELDSPAR AND QUARTZ PHENOCRYSTS WITHIN THE INITIAL FALL DEPOSIT OF THE HUCKLEBERRY RIDGE TUFF, YELLOWSTONE**
- 12-5 42 Rein, Isabelle M.T.*; Connors, L.; Ruger, Edward C.V.; Carley, T.L.: **APATITE GEOCHEMISTRY ACROSS THE NEOVOLCANIC ZONES OF ICELAND: ESTABLISHING A BASELINE AND SEARCHING FOR SPATIAL SIGNIFICANCE**
- 12-6 43 Hasegawa, Eric M.*; Wolfe, Oliver M.; Spear, Frank S.; Cheney, John T.: **QUIG BAROMETRY AND ZIR THERMOMETRY FROM TWO TECTONIC UNITS, IOS, GREECE**
- 12-7 44 Moehl, Olivia C.*; Guevara, Victor E.; Harms, Tekla A.: **MINERALOGIC AND BULK CHEMICAL COMPOSITION OF PROTEROZOIC MYLONITIC GARNET LEUCOGNEISS IN THE RUBY RANGE, MONTANA**
- 12-8 45 Maxwell, J. Luke*; Wolfe, Oliver M.; Spear, Frank S.; Cheney, John T.: **EVALUATION OF OVERSTEPPING IN GARNET SCHISTS FROM SYROS, GREECE**
- 12-9 46 Peluso, Jessica*; Charney, Allison Beth; Steinen, Randolph P.: **PETROGRAPHIC ANALYSIS OF WEST ROCK SILL: IMPLICATIONS FOR EMPLACEMENT HISTORY AND SILL THICKNESS**
- 12-10 47 Hayden, Russell P.*; Briggs, Ryan D.; Recchia, Rosalie T.; Severs, Matthew J.: **REMAPPING AND GEOCHEMICAL ANALYSIS OF THE CROTON FALLS AND PEACH LAKE PLUTONS IN SOUTHERN NEW YORK AND PLACING THEM IN THE CONTEXT OF THE BEEMERVILLE-CORTLANDT TREND**
- 12-11 48 Gasior, Lauren B.*; Tailby, Nicholas D.: **THE MANHATTAN PROJECT: CONSTRAINING PEAK METAMORPHIC PRESSURE-TEMPERATURE CONDITIONS OF THE MANHATTAN PRONG**
- 12-12 49 Guimaraes Ferreira, Ana Mafalda*; Allison, Jerry D.; Palmer, Matthew S.; Mobasher, Katayoun: **GEOCHEMICAL ANALYSIS OF ROCKS FROM ELACHEE NATURE AND SCIENCE CENTER, CHICOPEE, GA**
- 12-13 50 Jarvis, Egan*; Ranson, William A.: **GEOLOGY AND BLUE RIDGE ESCARPMENT EVOLUTION ALONG THE TOXAWAY RIVER IN SOUTHWESTERN NORTH CAROLINA**
- 12-14 51 Skipper, Hannah*; Ranson, William A.: **GEOLOGY AND BLUE RIDGE ESCARPMENT EVOLUTION ALONG BEARCAMP, BEAR, AND BEARWALLOW CREEKS IN SOUTHWESTERN NORTH CAROLINA AND NORTHWESTERN SOUTH CAROLINA**
- 12-15 52 Xu, Yiruo*; Claiborne, Lily L.; Carley, Tamara L.: **INVESTIGATING THE PALEOTECTONIC SETTING OF ORDOVICIAN K-BENTONITES IN SOUTHEASTERN US USING ZIRCON TRACE ELEMENT GEOCHEMISTRY**
- 12-16 53 Fischer, Emily L.*; Vance, R. Kelly; Massey, Skylar: **A PETROLOGICAL STUDY OF THE SPARTA GRANITE AT WARRENTON QUARRY, GEORGIA**
- 12-17 54 Deskins, Lindsey R.*; Kuehn, Stephen C.; Frye, James K.; Arrington, Eric S.; Rose, Jared W.; Kalteyer, Donna A.; McNeely, Cameron Jean; Hostetler, Savannah JoAnne; Hostetler, Addison Jacob: **DECIPHERING THE PYROCLASTIC ERUPTIVE HISTORY OF THE THREE SISTERS VOLCANIC CLUSTER, CASCADE ARC, OREGON, USA BY INTEGRATING PROXIMAL AND DISTAL TEPHRA RECORDS**
- 12-18 55 Gray, Alex*; Cake, Bailey; Nord, Julia Ann: **MAPPING THE VESUVIUS MEGACRYSTIC GRANITE AND ASSOCIATED UNAKITE, BLUE RIDGE, VA**
- 12-19 56 Achek, Moread*; Marsellos, Antonios: **MICROSCALE 3D-PRINTED MAPS AND STATISTICAL ANALYSIS OF STRUCTURAL AND GEOCHEMICAL CHARACTERISTICS OF VOLCANIC ASH FROM THE EYJAFJALLAJÖKULL VOLCANO IN ICELAND USING SCANNING ELECTRON MICROSCOPE AND 3D-ELEVATION SOFTWARE**
- 12-20 57 Patterson, Rachel*; Elmi, Chiara; Sighinolfi, GiamPaolo: **NEW INSIGHTS ON THE ORIGIN OF VITRIFIED ROCKS FROM SERRA DI VUDA, ITALY**
- 12-21 58 Carrara, Jacob Steven*; Elmi, Chiara; Johnson, Elizabeth A.; Drummond, Jesse: **CHARACTERIZING DIFFERENCES IN AGGREGATE BEHAVIOR FROM THE CLAY-SIZED FRACTIONS OF STABILITY FILLING MATERIAL USING A NOVEL COMBINATION OF X-RAY POWDER DIFFRACTION AND ATTENUATED TOTAL REFLECTION FOURIER TRANSFORM INFRARED SPECTROSCOPY**
- 12-22 59 Mulrooney, Laura C.*; Ortiz-Guerrero, Carolina; Foster, David A.; Vogl, James J.; Kamenov, George D.: **U-PB DATING OF LEUCOGRANITE INTRUSIONS IN OROGENIC BELTS: CHALLENGES AND APPROACHES TO DEFINING A CHRONOLOGY OF DEFORMATION**
- 12-23 60 Vogelwohl, Angela*; Benoit, Jeffrey; Kohl, Martin S.; Haroldson, Erik L.: **FLUID AND SOLID INCLUSIONS IN THE MOSHEIM ANTICLINE OCCURRENCE OF EAST TENNESSEE FIELD DIAMONDS (QUARTZ CRYSTALS)**
- 12-24 61 Wells, Jeffery C.D.*; Haroldson, Erik L.: **SOURCES FOR MINERALIZATION IN KENTUCKY DAM: IMPLICATIONS FOR DAM STABILITY**
- 12-25 62 Blackwell, Arlene E.*; Cerra, Jack V.; Whitcomb, Danielle A.; Hyatt, James A.: **GROUND AND DRONE BASED PHOTOGRAMMETRIC MAPPING AND MODELLING OF SHORELINES, OUTCROPS, AND RELATED ARTIFACTS**
- 12-26 63 Terrel, Kameron Paige*; Wright, Carrie L.: **TEACHING MASS EXTINCTIONS: EFFECTIVENESS OF A GALLERY WALK**

**AS AN ACTIVE-LEARNING STRATEGY IN INTRODUCTORY
GEOSCIENCE CLASSROOMS**

- 12-27 64 Franzi, David A.*; Allen, Eileen B.: **GIS-ENHANCED FLUVIAL GEOMORPHOLOGY LABORATORY EXERCISES IN THE WEST BRANCH SUSQUEHANNA RIVER (WBSR), PENNSYLVANIA FOR UNDERGRADUATE GEOLOGY AND ENVIRONMENTAL SCIENCE**
- 12-28 65 McIntosh, Dana C.*; Childers, Daniel P.: **AGATES, THE INSIDE STORY: AN UNDERGRADUATE RESEARCH PROJECT AT DELAWARE COUNTY COMMUNITY COLLEGE**
- 12-29 66 Simal, Amanda Grace*; Elmi, Chiara; Winchester, Gregory Paul: **ROCKS AND MINERALS AT EDITH J. CARRIER ARBORETUM (HARRISONBURG, VA)**

**DUE TO OBLIQUE COLLISION/TRANSPRESSION
ACCOMMODATED BY LITHOSPHERIC DELAMINATION**

- 14-4 2:30 PM Jacobi, Robert D.*; Eckert, Craig; Starr, Joel; Mathur, Ryan: **APPALACHIAN OROGEN STRUCTURAL STYLES IN THE APPALACHIAN FORELAND BASIN: TECTONIC IMPLICATIONS OF NEOCADIAN AND YOUNGER FAULT-BEND FOLDS AND OTHER ANTICLINES OBSERVED IN SEISMIC REFLECTION DATA IN PENNSYLVANIA AND WEST VIRGINIA**
- 14-5 2:50 PM Severson, Allison R.*; Kuiper, Yvette D.; Long, Maureen D.; Pipkin, Jonese: **A STRUCTURAL, GEOCHRONOLOGICAL AND GEOPHYSICAL BOUNDARY IN THE SOUTHEASTERN NEW ENGLAND APPALACHIANS: AN ALLEGHANIAN FRONT?**
- 14-6 3:10 PM Levine, Jamie S.F.*; Casale, Gabriele; McAleer, Ryan J.; Merschat, Arthur; Powell, Nicholas E.: **THE ALLEGHANIAN OROGENY IN THE EASTERN BLUE RIDGE: EARLIER AND HOTTER THAN PREVIOUSLY RECOGNIZED**
- 14-7 3:30 PM van der Pluijm, Ben*; Boles, Austin; Lynch, Erin: **METEORIC SOURCE OF GEOFLUIDS IN THE CENTRAL APPALACHIANS FOLD-THRUST BELT AND FORELAND CHALLENGES OROGENIC FLUID EXPULSION HYPOTHESIS; EVIDENCE FROM REGIONAL CLAY DIAGENESIS**
- 14-8 3:50 PM Ebel, John E.*: **THE SEISMIC STRUCTURE OF THE CRUST AND UPPER MANTLE OF THE NORTHEASTERN UNITED STATES**
- 14-9 4:10 PM Kinney, Sean T.*; MacLennan, Scott A.; Setera, Jacob; Schoene, Blair; VanTongeren, Jill; Strauss, Justin V.; Bradley, Dwight; Hart, Austin; Town, Caleb Forrest; Olsen, Paul E.: **LONG-LIVED AND LOCALIZED POST-OROGENIC MAGMATISM ON THE EASTERN NORTH AMERICAN MARGIN: INSIGHTS FROM ZIRCON U-PB GEOCHRONOLOGY**
- 14-10 4:30 PM Cooper Boemmels, Jennifer*; Crespi, Jean; Amidon, William H.; Fleming, Thomas H.; Webb, Laura E.: **THE WESTERN NEW ENGLAND-QUEBEC IGNEOUS PROVINCE OF VERMONT AND NEW YORK: AN EXAMPLE OF POSTRIFT MAGMATISM AND NORMAL FAULTING FROM THE NORTHERN APPALACHIANS**
- 14-11 4:50 PM Long, Maureen D.*; Benoit, Margaret H.; Evans, Rob L.; Byrnes, Joseph; Bezada, Maximiliano; Mittal, Ved; King, Scott D.; Kirby, Eric; Levin, Vadim: **LITHOSPHERIC LOSS BENEATH THE CENTRAL APPALACHIAN MOUNTAINS AND COMPARISONS WITH THE NEW ENGLAND APPALACHIANS**
- 14-12 5:10 PM Hatcher, Robert D.*: **HALF A CENTURY OF MODERN APPALACHIAN TECTONICS—ARE WE THERE YET?**

AFTERNOON ORAL TECHNICAL SESSIONS

SESSION NO. 13

S1. The Past is the Key to the Present—The Role of Paleontology and Geology in Management and Decision Making

3:45 PM, Hyatt Regency Reston, Regency Ballroom A

G. Lynn Wingard, Christopher Bernhardt, Jacalyn M. Wittmer and Andrew V. Michelson, Presiding

- 3:45 PM **INTRODUCTORY REMARKS**
- 13-1 3:50 PM Wittmer, Jacalyn M.*; Buechner, Grace Hunt; Kaehler, Lauren; Meerdink, Katie; Michelson, Andrew V.: **AN INVESTIGATION OF FINGER LAKE (CONESUS, CANADICE, AND HONEOYE) LIVE-DEAD COMMUNITIES IN WESTERN NEW YORK**
- 13-2 4:10 PM Toomey, Michael*; Cronin, Thomas; D'Entremont, Nicole; Donnelly, J.; Dunn, Cathy; Korty, Robert; Rodysill, Jessica R.; Willard, D.: **RECONSTRUCTING 1000 YEAR RECORD OF HURRICANE LANDFALL NEAR POCOMOKE SOUND, CHESAPEAKE BAY**
- 13-3 4:30 PM Mastro, Joseph R.*; Scherer, Reed P.: **TRACKING GLACIAL-INTERGLACIAL CYCLES USING DIATOM MORPHOMETRICS IN THE AMUNDSEN SEA, ANTARCTICA (IODP LEG 379)**
- 13-4 4:50 PM Wingard, G.*; Jones, Miriam C.; Stackhouse, Bethany L.; Bergstresser, Sarah E.; Marot, Marci E.; Hoefke, Kristen E.B.; Bernhardt, Christopher; Marshall, Frank E.; Daniels, Andre: **HOLOCENE INSIGHTS ON THE RESILIENCE OF SOUTH FLORIDA'S MANGROVE COAST, USA**
- 13-5 5:10 PM Kidwell, Susan M.*: **COLLABORATIONS WITH AGENCIES WHILE STAYING IN ACADEMIC GEOLOGY: BALANCING APPLIED AND BASIC SCIENCE WHEN ASSESSING HUMAN MODIFICATION OF COASTAL ECOSYSTEMS**

SESSION NO. 14

S2. The Appalachians, from North to South, from Crust to Mantle II (GSA Structural Geology and Tectonics Division; GSA Geophysics and Geodynamics Division)

1:30 PM, Hyatt Regency Reston, Regency Ballroom B

Allison R. Severson, Yvette D. Kuiper, Maureen D. Long, Lara S. Wagner and Christopher M. Bailey, Presiding

- 14-1 1:30 PM Keller, Duncan S.*; Ague, Jay J.: **THE TECTONIC CONSEQUENCES OF HIGH-PRESSURE GRANULITE AND ULTRAHIGH-PRESSURE ROCKS IN THE ACADIAN/NEOCADIAN CENTRAL MAINE TERRANE**
- 14-2 1:50 PM Gao, Haiying*: **SHEAR-WAVE VELOCITY STRUCTURE OF THE CRUST AND UPPER MANTLE IN EASTERN NORTH AMERICA FROM FULL-WAVE AMBIENT NOISE TOMOGRAPHIC IMAGING**
- 14-3 2:10 PM Moecher, David P.*; Massey, Matthew A.: **EXTREME NEO-ACADIAN CRUSTAL SHORTENING AND VERTICAL/LATERAL EXTRUSION IN NEW ENGLAND**

SESSION NO. 15

S3. From the Margins to the Deep: A Tribute to the Science and Art of A. Conrad Neumann (GSA Sedimentary Geology Division; GSA Marine and Coastal Geosciences Division; GSA Quaternary Geology and Geomorphology Division; Eastern Section-SEPM (Society for Sedimentary Geology); GSA Geoscience Education Division)

1:30 PM, Hyatt Regency Reston, Lake Fairfax

Blair R. Tormey, Paul J. Hearty and Albert C. Hine, Presiding

- 15-1 1:30 PM Hine, Albert C.*: **THE HOLOCENE HIGH ENERGY INTERVAL—A CLASSIC “NEUMANNISM”**
- 15-2 1:50 PM Land, Lynton S.*: **A CARTOON HISTORY OF CRUISES TO THE BIGHT OF ABACO WITH CONRAD NEUMANN**
- 15-3 2:10 PM Rueger, Bruce F.*: **FIRE HISTORY IN DEVONSHIRE MARSH, A HOLOCENE RECORD OBTAINED FROM A CORE TAKEN BY A. CONRAD NEUMANN**
- 15-4 2:30 PM Sikes, Elisabeth*: **EXPLORING BIOEROSION THROUGH CONRAD NEUMANN'S VIEWFINDER IN THE 1980'S**
- 15-5 2:50 PM Rasmussen, Kenneth*: **TRAVELS WITH CONRAD: ONE DOCTORAL STUDENT'S PERSPECTIVE, 1983-89**

FRIDAY, 20 MARCH

- 15-6 3:10 PM Boss, Stephen K.*: **NEUMANN ON NORTHERN GREAT BAHAMA BANK, 1989-1994: ACCOMMODATION AND HURRICANES AND WHITINGS, OH MY!**
- 15-7 3:30 PM Harty, Paul J.*; Tormey, Blair R.: **"ICEHOUSE, GREENHOUSE, MADHOUSE" – HAVE WE ARRIVED?**
- 15-8 3:50 PM Jarrett, Bret*: **ON A PIECE OF LIMESTONE: A TRIBUTE TO CONRAD'S DEDICATED TEACHING SERVICE**
- 15-9 4:10 PM Tormey, Blair R.*; Harty, Paul J.; Donovan, Bailey G.: **THE EARTH HATH BUBBLES, AS THE WATER HAS, AND THESE ARE OF THEM: THE STORMY ORIGINS OF SUPRATIDAL FENESTRAE IN THE BAHAMAS DURING THE LAST INTERGLACIAL**
- 15-10 4:30 PM Glumac, Bosiljka*; Curran, H. Allen: **GENERATION AND TRANSPORT OF CARBONATE BOULDERS BY STORM WAVES ALONG ROCKY COASTLINES OF SAN SALVADOR ISLAND, BAHAMAS: CELEBRATING THE LEGACY OF A. CONRAD NEUMANN**
- 15-11 4:50 PM Pilskaln, Cynthia H.*: **THE OCEANOGRAPHER FROM UP-ISLAND**
- 15-12 5:10 PM Wanless, Harold R.*: **CREATING AN UNDERSTANDING OF SEA-LEVEL DYNAMICS: A. CONRAD NEUMANN'S LEGACY**

SESSION NO. 16

S5. Radionuclides: Biogeochemistry, Transport, and Geological Applications II

1:30 PM, Hyatt Regency Reston, Regency Ballroom A

James Kaste and Joshua D. Landis, Presiding

- 16-1 1:30 PM Hipps, Alton L.*; Kaste, James M.; Lockwood, Rowan; Berquist, C.R.: **HIGH LOCALIZED URANIUM AND ²²⁶Ra IN THE MID-ATLANTIC COASTAL PLAIN: IMPLICATIONS FOR RADON HAZARDS**
- 16-2 1:50 PM Bierman, Paul R.*; Sibello Hernández, Rita Y.; Campbell, Mae Kate; García Moya, Alejandro; Dethier, David P.; Bolaños Alvarez, Yoelvis; Massey-Bierman, Marika Eden; Guillén Arruebarrena, Aniel; Racela, Jason; Schmidt, Amanda H.; Cartas Aguila, Hector A.; Corbett, Lee B.; Alonso-Hernández, Carlos; Dix, Monica; Caffee, Marc W.: **COSMOGENIC RADIONUCLIDE EROSION RATES AND CHEMICAL DENUDATION RATES IN CUBA ARE NOT RELATED**
- 16-3 2:10 PM Sherif, M.I.*; Sturchio, N.C.: **ARE FOSSIL AQUIFERS DOMINATED BY RADIOACTIVE WATER?**
- 16-4 2:30 PM Schwarz, Eric*; Walter, Robert; Johnsen, Amanda; Walters, William; Geuther, Jeffrey: **DEVELOPMENT OF LOW-COST ⁷Be STANDARDS USING A UNIVERSITY RESEARCH REACTOR**
- 16-5 2:50 PM Campbell, Mae Kate*; Bierman, Paul R.; Schmidt, Amanda H.; Sibello Hernández, Rita Y.; García Moya, Alejandro; Cartas Aguila, Hector A.; Bolaños Alvarez, Yoelvis; Guillén Arruebarrena, Aniel; Dethier, David P.; Dix, Monica; Massey-Bierman, Marika Eden; Corbett, Lee B.; Caffee, Marc W.: **COSMOGENIC EROSION RATES IN CENTRAL AND WESTERN CUBA**
- 16-6 3:10 PM Christ, Andrew J.*; Bierman, Paul R.; Corbett, Lee B.; Schaefer, Joerg M.; Hidy, Alan J.; Caffee, Marc W.; Dahl-Jensen, Dorthe: **COSMOGENIC ²⁶Al AND ¹⁰Be MEASUREMENTS FROM CAMP CENTURY BASAL SEDIMENT INDICATE GREENLAND ICE SHEET ABSENCE IN THE LAST MILLION YEARS**

SESSION NO. 17

S6. Stratigraphic Problems and Solutions in the Appalachian Basin (GSA Energy Geology Division; GSA Sedimentary Geology Division; GSA Hydrogeology Division; GSA Karst Division; Eastern Section–SEPM (Society for Sedimentary Geology))

3:25 PM, Hyatt Regency Reston, Lake Audubon

Daniel H. Doctor, Randall C. Orndorff and David J. Weary, Presiding

- 3:25 PM **INTRODUCTORY REMARKS**
- 17-1 3:30 PM Ettensohn, Frank R.*: **FILLING A FORELAND BASIN: MODELS FROM THE APPALACHIAN BASIN**
- 17-2 3:50 PM Weislogel, Amy L.*; El-Ashkar, Shadya; Ore, Tobi; Smith, Jarrett; Steorts, Emma B.; Toth, Randy; Dinterman, Philip A.: **THE SOURCE-TO-SINK UPPER DEVONIAN SYSTEM OF THE ACADIAN FORELAND BASIN: INSIGHTS FROM THE GORDON SAND OF THE VENANGO GROUP OF WEST VIRGINIA**
- 17-3 4:10 PM Doctor, Daniel H.*: **HOW SCHERR IS IT? STRATIGRAPHIC REVISION OF THE UPPER DEVONIAN GREENLAND GAP GROUP IN WEST VIRGINIA AND VIRGINIA BASED ON MAPPING WITH LIDAR-DERIVED ELEVATION IMAGERY**
- 17-4 4:30 PM Westerman, David S.*; Heale, Caitlin Judith: **PYROCLASTIC ERUPTIONS OF THE NORTHFIELD INTRUSIVE COMPLEX DURING FILLING OF THE CONNECTICUT VALLEY GASPÉ TROUGH**
- 17-5 4:50 PM Parker, Mercer*; Orndorff, Randall C.; Goggin, Keith: **A LITHOSTRATIGRAPHIC, BIOSTRATIGRAPHIC, AND PETROGRAPHIC ANALYSIS OF THE MIDDLE AND UPPER ORDOVICIAN STRATA IN GAP MILLS, WEST VIRGINIA TO BETTER UNDERSTAND THE STRATIGRAPHY AND NOMENCLATURE IN A STRUCTURALLY COMPLEX REGION**
- 17-6 5:10 PM Weary, David J.*; Doctor, Daniel H.: **GEOLOGIC MAPPING AND STRATIGRAPHIC FRAMEWORK OF THE MISSISSIPPIAN GREENBRIER GROUP AND BLUEFIELD FORMATION IN THE MONROE COUNTY AREA OF WEST VIRGINIA**

SESSION NO. 18

T9. Neoproterozoic to Cambrian Transitions on the Appalachian, Laurentian Margin (Paleontological Society; Eastern Section–SEPM (Society for Sedimentary Geology))

1:30 PM, Hyatt Regency Reston, Lake Audubon

Steven J. Hageman and Edward L. Simpson, Presiding

- 18-1 1:30 PM Hageman, Steven J.*: **SKOLITHOS LIFE ASSEMBLAGES AS SEDIMENTATION RATE AND "STRATIGRAPHIC UP" INDICATORS: PSEUDO-SPREITEN IN EARLY CAMBRIAN TRACE FOSSILS**
- 18-2 1:50 PM Meyer, Michael*; Ramirez, Joshua; Miller, Taylor: **THERE IS AN RV ON THAT OLENELLUS: DEVELOPING NOVEL GIS METHODS TO BETTER FIND AND ACCESS URBAN PALEONTOLOGICAL MATERIAL FROM THE CAMBRIAN KINZERS FORMATION, PENNSYLVANIA USA**
- 18-3 2:10 PM McClellan, Elizabeth*; Lobins, Sydney: **TRANSGRESSIONS, REGRESSIONS, AND STABILIZATION OF THE CAMBRIAN PASSIVE MARGIN: THE CHILHOWEE GROUP IN SW VA**
- 18-4 2:30 PM Jordan, Bear Cooley*: **DELINEATING THE CENTRAL PIEDMONT SUTURE IN UNION COUNTY, SOUTH CAROLINA**
- 18-5 2:50 PM Laughlin, Evan*; Bailey, Christopher M.: **THE EVINGTON GROUP RESTORED: A MAJOR STRATIGRAPHIC UNIT IN THE EASTERN BLUE RIDGE, CENTRAL VIRGINIA**

SESSION NO. 19**T14. Out of the Classroom, Out of the Box: Innovative Approaches to Geoscience Education**

1:30 PM, Hyatt Regency Reston, Lake Thoreau

Patricia Kelley and Michelle M. Casey, Presiding

- 19-1 1:30 PM Reese, Joseph F.*: **SHARING ORBITAL PERSPECTIVES OF EARTH THROUGH ASTRONAUT PHOTOGRAPHY TO EXPAND OUR UNDERSTANDING OF INTERLINKED EARTH SYSTEMS, ENVIRONMENTAL CHANGES, HUMAN IMPACTS AND OURSELVES**
- 19-2 1:50 PM Wolak, Jeannette*: **OUT OF THIS WORLD INQUIRY: TEACHING PLANETARY GEOLOGIC PROCESSES USING TERRESTRIAL ANALOGS**
- 19-3 2:10 PM Sarkar, Ria*; Neitzke Adamo, Lauren; Irizarry-Barreto, Patricia; Criscione, Julia: **MAKING SCIENCE COOL: A LOOK INTO THE RUGM'S SUMMER STEM PROGRAM**
- 19-4 2:30 PM Tennakoon, Shamindri*; Thompson, Carmi Milagros: **HOLEY ROCKS! THE APPLICATION OF FLORIDA FOSSIL INVERTEBRATES TO MIDDLE SCHOOL LEARNING STANDARDS IN ALACHUA COUNTY, FL**
- 19-5 2:50 PM Kelley, Patricia H.*; Bruce, Katherine: **A TRANSDISCIPLINARY TEAM-TAUGHT COURSE IN PALEONTOLOGY (AND PSYCHOLOGY!) WITH EXTENSIVE LEARNING EXPERIENCES OUTSIDE THE CLASSROOM**
- 19-6 3:10 PM Bush, Andrew M.*; Dow, Samantha: **WHO HAD THE HIGH GROUND? ACTIVE LEARNING EXERCISES USING LIDAR-BASED DIGITAL ELEVATION MAPS OF CIVIL WAR BATTLEFIELDS**
- 19-7 3:30 PM Bier, Sara E.*; Quinton, Page C.; Rygel, Michael C.; Humagain, Kamal; Kingsley, David: **GROWING GEOLOGISTS IN A GEOSCIENCE GARDEN**
- 19-8 3:50 PM Casey, Michelle M.*; Haroldson, Erik L.; Pattat, Audrey N.; Van Boening, Angela; Wolak, Jeannette M.; Gibson, Michael A.: **CELEBRATING 40 YEARS OF TENNESSEE GEOCONCLAVE: BUILDING SKILLS FOR THE FUTURE**
- 19-9 4:10 PM Fenster, Michael S.*; Gowan, Charles: **ENVIRONMENTAL CONSULTING AS A CURRICULAR MODEL FOR UNDERGRADUATE EDUCATION**
- 19-10 4:30 PM Hall, Sarah R.*; Walker, Becca; Schmidt, Calla M.; Paul, John R.: **A MULTI-INSTITUTIONAL FIELD-BASED PROFESSIONAL DEVELOPMENT PROGRAM FOR ENVIRONMENTAL STEM (ESTEM) UNDERGRADUATE STUDENTS: PERSPECTIVES AND PRODUCTS FROM A PILOT PROGRAM**
- 19-11 4:50 PM Vance, R. Kelly*; Gaskin, Jaynie L.: **FIELD-BASED UNDERGRADUATE SCIENCE EDUCATION ON ST. CATHERINES ISLAND, GEORGIA**
- 19-12 5:10 PM Wu, Yinye*; Wu, Luofei; Fu, Lei: **SEDIMENTARY SEQUENCE OUTCROPS OF PROTEROZOIC MARINE FACIES AROUND BEIJING: AN IMPORTANT GEOSCIENCE FIELD EDUCATION BASE**

AFTERNOON POSTER TECHNICAL SESSIONS

SESSION NO. 20**D3. Environmental Geoscience (Posters)**

1:30 PM, Hyatt Regency Reston, Grand Ballroom A-D

Authors will be present from 3 to 5 PM

Booth #

- 20-1 1 Woltemade, Christopher*: **FLOOD RESPONSE TO CHANGING CLIMATE AND LAND COVER: DELAWARE RIVER BASIN**

- 20-2 2 West, Kathryn A.*; Husted, Steven J.; Greer, Michael; King, Timothy; Morgan, Scott A.; Norcross, Scott: **PILOT MICROGRAVITY INVESTIGATION TO DELINEATE HIGH DENSITY TEL DNAPL**
- 20-3 3 Alexander, Jane*; Chen, Ting Ting; Fiero, Alex; Vaserman, Ellie; Lindo-Atichati, David; Callaghan, Ryan; Kominoski, Sara; Kozyra, Marlena: **DEVELOPING A RELIABLE METHOD FOR SEPARATING MICROPLASTICS FROM A VARIETY OF BEACH SEDIMENTS**
- 20-4 4 Sanchez, Heather*; Elick, Jennifer M.: **EXAMINATION OF WASTE WATER FOR MICROPLASTICS- EASTERN SNYDER COUNTY WATER AUTHORITY, SELINGROVE, PA**
- 20-5 5 Nolasco, Mikaila M.*; Stocks, Lee; Dolan, William X.; Grosso, Kara L.: **IDENTIFYING UNMARKED GRAVES WITH GROUND PENETRATING RADAR AT MT PISGAH STATE PARK**
- 20-6 6 Chowdhury, Shafiq H.; Monroe, Tyler*: **EFFECTS OF VARIABLE STREAM DISCHARGE ON TEMPORAL COMPARISON OF WATER QUALITY DATA DUE TO LAND USE**
- 20-7 7 Durrrough-Pritchard, Jamekia A.*; Andrus, C. Fred T.; Atkinson, Carla L.; Minzoni, Rebecca Totten; Tobin, Thomas S.: **NITROGEN ISOTOPE RECORDS IN UNIONID MUSSELS: ASSESSING FIDELITY TO STREAM CONDITIONS AND POST-MORTEM SHELL DEGRADATION**
- 20-8 8 Martinez-Sacristan, Hernando*: **ADMIRATION TO GEOLOGY-DECORATION AND GEOLOGY-MONUMENT: FAR FROM THE RHETORIC, CLOSER TO REALITY**
- 20-9 9 Stocks, Lee*; Granville, Maxim; Grosso, Kara L.; Nolasco, Mikaila M.: **BUILDING A REGIONAL TREE-RING MASTER CHRONOLOGY FOR NORTHCENTRAL PENNSYLVANIA**
- 20-10 10 Butler, Mark J.*; Richardson, Justin B.: **TRACE METAL SEQUESTRATION IN RIPARIAN SOILS AND TRANSPORT OF DISSOLVED AND SUSPENDED SEDIMENT IN THE THAMES RIVER WATERSHED**
- 20-11 11 Dolan, William X.*; Stocks, Lee; Zubek, Scott R.: **MAPPING ORPHANED AND ABANDONED OIL AND GAS WELLS IN TIOGA COUNTY, PENNSYLVANIA**
- 20-12 12 Bradley, Philip J.*; Bolich, Richard E.: **GROUNDWATER FEATURES MAP – A DERIVATIVE MAP PRODUCT FROM STATEMAP MAPPING EFFORTS IN CHATHAM COUNTY, NC**
- 20-13 13 Gordon, Veronica Ann; Ware, Shannon Elizabeth*; Vulava, Vijay M.: **COASTAL URBAN WATERSHED SIGNATURE IN OYSTERS**
- 20-14 14 Herath, Hashindra K.*; Platt, Brian F.; Cizdziel, James V.; Widanagamage, Inoka H.: **BAUXITE: TO REMEDIATE HEAVY METAL CONTAMINATED WATER?**

SESSION NO. 21**D7. Geophysics (Posters)**

1:30 PM, Hyatt Regency Reston, Grand Ballroom A-D

Authors will be present from 3 to 5 PM

Booth #

- 21-1 15 Marlow, Christopher S.*; Powell, Christine; Cox, Randal T.: **REINTERPRETATION OF THE MEEMAN-SHELBY FAULT'S STRUCTURE**
- 21-2 16 Dallas, Phillip*; Maier, Joseph; Clark, Mikayla; Valentino, David: **CHARACTERIZATION OF DRUMLIN DEPOSITS AND AQUIFERS USING GEOPHYSICAL METHODS: EXAMPLES FROM THE CENTRAL NEW YORK DRUMLIN FIELD**
- 21-3 17 Schloss, Ralph*; Rafferty, Evan; Valentino, David: **ELECTROMAGNETIC SURVEY TO LOCATE GRAVES AND OTHER INTERESTING ARCHAEOLOGICAL FEATURES**
- 21-4 18 Kondas, Sean M.*: **CRUSTAL UNLOADING BY QUARRYING AS A SOURCE OF INDUCED SEISMICITY IN PLAINFIELD, CONNECTICUT**
- 21-5 19 Mies, Jonathan W.*: **PRELIMINARY ANALYSIS OF HURRICANE DORIAN'S MICROSEISMS FROM THE LITTLE BAHAMA BANK THROUGH ONSLOW BAY, NORTH CAROLINA, WITH COMPARISONS TO HURRICANES MATTHEW AND FLORENCE**

SESSION NO. 22**D14. Paleoclimatology/Oceanography (Posters)**

1:30 PM, Hyatt Regency Reston, Grand Ballroom A-D

Authors will be present from 3 to 5 PM

- | | Booth # | |
|-------|---------|---|
| 22-1 | 20 | Michelson, Andrew V.; Luke, Geresia-Leigh*: QUANTIFYING THE RELATIONSHIP BETWEEN OSTRACODE ASSEMBLAGES AND THE ENVIRONMENT IN LAKES ON RUM CAY AND SAN SALVADOR ISLAND BAHAMAS |
| 22-2 | 21 | Luke, Geresia-Leigh; Neely, Maura; Michelson, Andrew V.*: SALINITY VARIATION IN DUMP LAKE, RUM CAY, BAHAMAS OVER THE LAST MILLENNIUM |
| 22-3 | 22 | Palmo, Cheyenne M.*; Grothe, Pamela R.; Patterson, William P.: OXYGEN ISOTOPE VALUES OF <i>CRASSOSTREA VIRGINICA</i> SHELL FROM CHESAPEAKE BAY: APPLICATIONS TO REGIONAL PALEOCLIMATE |
| 22-4 | 23 | Yu, Siyao Mark*; Wright, James; Mortlock, Richard: SYNCHRONOUS THERMOCLINE DYNAMICS ACROSS THE EQUATORIAL INDIAN AND PACIFIC INFERRED FROM MULTISPECIES FORAMINIFERAL ANALYSES |
| 22-5 | 24 | Davi, Nicole; Nixon, Troy J.A.*; Raphael, Jordan; Griffiths, Michael L.; Forrester, Jodi A.; Geary, Jessica; DaSilva, Michael; Degen, Austin; Knyrd, Kaytlynn: TRACING STORMS AND CLIMATE CHANGE THROUGH TREE-RING GROWTH PATTERNS ON COASTAL MARITIME FORESTS |
| 22-6 | 25 | Nuñez, Ashley C.*; Joseph, Leah H.: PALEOCLIMATOLOGICAL ANALYSIS OF OCEANIC SEDIMENT FROM THE CHILEAN MARGIN ODP SITE 1234 TO DETERMINE PAST CLIMATIC CONDITIONS AND EVENTS |
| 22-7 | 26 | Schilling, Solveig H.*; Lam, Adriane R.; Leckie, R. Mark; MacLeod, Kenneth G.; Fraass, Andrew Jeffrey: A DYNAMIC KUROSHIO CURRENT EXTENSION DURING THE PLIOCENE-EARLIEST PLEISTOCENE |
| 22-8 | 27 | Rosenberg, Christiana Detry*; Patterson, Molly O.; Valenzuela, Natalia Varela; Romans, Brian W.; Ash, Jeanine; Kulhanek, Denise K.; Keisling, Benjamin Andrew; McKay, Robert M.; Grant, Georgia; van Peer, Tim; Jones, Harold; De Santis, Laura; Scientists, IODP Expedition 374: AN EXPANDED VIEW ON MID- TO LATE PIOCENE WEST ANTARCTIC ICE SHEET DYNAMICS |
| 22-9 | 28 | Maslock, Casey L.*; Rice, Katherine T.; Strasberg, Zachary; Ranieri, Colleen M.; Sexton, Flynn P.; Washington, DeAndre M.; Williams, Sydney N.; St. John, Kristen: RECONSTRUCTING LATE PLEISTOCENE NORTH PACIFIC ICE-RAFTING HISTORY THROUGH TWO GLACIAL CYCLES |
| 22-10 | 29 | Taylor, Shawn P.*; Lam, Adriane R.; Patterson, Molly O.; Habicht, Helen; Jones, Harold: OCEANIC VARIABILITY DURING THE MID- TO LATE-PLEISTOCENE: A STATISTICAL APPROACH USING ELEMENTAL (XRF CORE SCANNING) AND PHYSICAL PROPERTIES DATA FROM ODP HOLE 1207A, NORTHWESTERN PACIFIC OCEAN |
| 22-11 | 30 | Surette, Adam C.*; Cullen, James L.; Nordin, Bailey; McManus, Jerry F.: DETAILED RECORDS OF IRD INPUT INTO THE CENTRAL NORTH ATLANTIC DURING THE LAST GLACIAL CYCLE (MARINE ISOTOPE STAGES 4-1) |
| 22-12 | 31 | Guglielmi, Alisha L.*; Cullen, James L.; Lott, Annette; McManus, Jerry F.: DETAILED RECORDS OF THE ICE-RAFTED DETRITUS IN SEDIMENTS FROM THE ORPHAN KNOLL, NORTHWEST ATLANTIC OCEAN |
| 22-13 | 32 | Calderon-Convers, Liliana*; Cui, Ying; Jiang, Shijun: EARLY EOCENE HYPERTHERMALS IN THE SOUTHEASTERN TETHYS: INSIGHT FROM TRACE ELEMENT GEOCHEMISTRY AND STABLE CARBON AND NITROGEN ISOTOPES |
| 22-14 | 33 | Brisson, Sarah K.*; Beard, J. Andrew; Bush, Andrew M.; Hren, Michael T.: PRELIMINARY ANALYSES OF $\delta^{15}N$ IN THE SHALLOW APPALACHIAN BASIN ASSOCIATED WITH THE LATE DEVONIAN MASS EXTINCTION EVENT |

SESSION NO. 23**D15. Paleontology (Posters)**

1:30 PM, Hyatt Regency Reston, Grand Ballroom A-D

Authors will be present from 3 to 5 PM

- | | Booth # | |
|-------|---------|--|
| 23-1 | 34 | Sanchez, Israel*; Heckert, Andrew B.; Foster, John R.; Brand, Nickolas; Hunt-Foster, Rebecca: GEOLOGY AND MICROVERTEBRATE PALEONTOLOGY OF THE J&M SITE (UPPER CRETACEOUS: ?CAMPAIAN), WILLIAMS FORK FORMATION, NORTHWESTERN COLORADO |
| 23-2 | 35 | Heckert, Andrew B.*; Howell, Logan S.; Ore, Zachary A.: THE PALEOPATHOLOGICAL RECORD OF DINOSAURS: THE DISTRIBUTION OF DISEASE AND INCIDENCE OF INJURY THROUGHOUT THE MESOZOIC |
| 23-3 | 36 | Wilenzik, Ian V.*; Lockwood, Rowan; Sanderson, S. Laurie; Sues, Hans-Dieter: INFERRING DIET IN THE MOSASAUR <i>CLIDASTES</i> USING SKULL AND PTERYGOID TOOTH MORPHOLOGY OF TOXICOFERAN SQUAMATES |
| 23-4 | 37 | Feldman, Howard R.*; Blodgett, Robert B.; Marcus, Elisheva: BRACHIOPOD ENDEMICISM IN THE JURASSIC ETHIOPIAN FAUNAL PROVINCE |
| 23-5 | 38 | Maisch, Harry M.; Gardiner, Michaela A.*; Foster, Shana L.; Becker, Martin A.; Shimada, Kenshu; Griffiths, Michael L.: CHONDRICHTHYANS AND OSTEICHTHYANS FROM A TURONIAN-CONIACIAN LAG DEPOSIT BETWEEN THE GALLUP SANDSTONE-MULATTO TONGUE (MANCOS SHALE), SANDOVAL COUNTY, NEW MEXICO, USA WITH COMMENTS ON COEVAL LAGS IN THE WESTERN INTERIOR SEAWAY |
| 23-6 | 39 | Farmer, Kirsten B.*; Walker, Sally E.; Bowser, Samuel S.: POPULATION AND SIZE DISTRIBUTION OF <i>CIBICIDES ANTARCTICUS</i> ON <i>ADAMUSSIA COLBECKI</i> WITHIN EXPLORERS COVE, ANTARCTICA |
| 23-7 | 40 | Landon, Tessa C.*; Sunderlin, David: PALEOENVIRONMENT OF A JURASSIC ISLAND FOREST, TALKEETNA VOLCANIC FORMATION, TALKEETNA MOUNTAINS, ALASKA |
| 23-8 | 41 | Tollerton, Victor P.*; Van Iten, Heyo; Ford, Robert C.: PRELIMINARY RESOLUTION OF THE ANOMALOUS OCCURRENCE OF THE BRACHIOPODS <i>MARTINIA GALATAEA</i> AND <i>M. THETIS</i> IN THE MISSISSIPPIAN BIG COVE FORMATION, PORT AU PORT PENINSULA, NEWFOUNDLAND, CANADA |
| 23-9 | 42 | Syversen, Maggie L.*; Gibson, Brandt M.; Schmeekle, Mark W.; Furbish, David J.; Darroch, Simon A.F.: FLUID DYNAMICS OF THE ENIGMATIC EDIACARAN ORGANISM PTERIDINIUM |
| 23-10 | 43 | Van Iten, Heyo*; Tollerton, Victor P.; Ford, Robert C.; Hunter, Kenna: TAPHONOMY AND PALEOECOLOGY OF <i>PARACONULARIA PLANICOSTATA</i> (CNIDARIA, SCYPHOZOA) FROM THE LATE MISSISSIPPIAN BIG COVE FORMATION (NEWFOUNDLAND) AND LOWER WINDSOR GROUP (NOVA SCOTIA), EASTERN CANADA |
| 23-11 | 44 | Mount, Jake*; Elick, Jennifer M.: A FOSSIL GUIDE FOR THE COMMUNITY: THE SHALE PIT AT BEAVER SPRINGS |
| 23-12 | 45 | Puckett, KeeLe*; Boyer, Diana L.; Darroch, Simon A.F.: DIGGING INTO THE HANGENBERG EXTINCTION: TRACE FOSSILS OF THE LATE DEVONIAN CLEVELAND SHALE |
| 23-13 | 46 | Pidel, Martin A.*; Bartholomew, Alex J.: A NEW GENUS OF HALYSITES FROM ROSENDALE/KINGSTON AREA, NEW YORK |
| 23-14 | 47 | Ouellette, Leo P.*; Rahman, Imran A.; Limbeck, Maggie R.; Deline, Bradley: HYDRODYNAMICS AND FEEDING POSTURE IN THE ORDOVICIAN PARACRINOID <i>PLATYCYSTITES</i> |
| 23-15 | 48 | Nagel-Myers, Judith*; Wolke, Sonja; Makowski, Deryn: CAN WE TEACH OLD DATA A NEW TRICK? RE-DISCOVERING CENTURY OLD DATA TO RECONSTRUCT BIVALVE DISTRIBUTIONS IN THE DEVONIAN OF NEW YORK |
| 23-16 | 49 | Kleffner, Mark A.*; Bergström, Stig M.: REVISED MIDDLE TO UPPER AERONIAN AND TELYCHIAN (LOWER SILURIAN) CONODONT BIOSTRATIGRAPHY FOR THE EASTERN PORTION |

**OF THE MIDWESTERN BASINS AND ARCHES REGION
(NEW YORK, OHIO, KENTUCKY, AND INDIANA)**

- 23-17 50 Thomka, James R.*; Brett, Carlton E.: **CRYPTIC INTERACTION BETWEEN STALKED ECHINODERM RADICULAR ATTACHMENT STRUCTURES ON A MIDDLE SILURIAN HARDGROUND**
- 23-18 51 Lloyd, Austin*; Stafford, Emily S.; Forcino, Frank L.: **ECOLOGICAL COMPARISON OF SMALL AND LARGE GASTROPOD COMMUNITIES IN THE PENNSYLVANIAN FINIS SHALE OF TEXAS**
- 23-19 52 Recchuiti, Erin M.*; Cothren, Hannah R.; Stafford, Emily S.; Forcino, Frank L.: **PALEOCOLOGY OF FOSSIL COMMUNITIES IN PENNSYLVANIAN SHALES OF TEXAS**
- 23-20 53 LaBriola, Catherine G.*; Walker, Sally E.: **A PRELIMINARY TEST OF THE MESOZOIC MARINE REVOLUTION HYPOTHESIS USING REPAIR SCARS ON CRETACEOUS OYSTERS, SOUTHERN ATLANTIC GULF AND COASTAL PLAIN**
- 23-21 54 Maisch, Harry M.; Foster, Shana L.*; Gardiner, Michaela A.; Becker, Martin A.: **OSTEICHTHYANS FROM THE SHARK RIVER FORMATION (MIDDLE EOCENE) AND KIRKWOOD FORMATION (EARLY MIOCENE) CONTACT, MONMOUTH COUNTY, NEW JERSEY, USA**
- 23-22 55 Carriker, Diana*; Occhi, Marcie; Carter, Mark W.; Bernhardt, Christopher; Berquist, C.R.: **DETERMINING THE AGE AND DEPOSITIONAL ENVIRONMENT OF COASTAL PLAIN SEDIMENTS AT THE JACK QUARRY, VA USING PALYNOLOGY**
- 23-23 56 Phillips, Stephen F.*; Sheffield, Sarah L.; Deline, Bradley: **MORPHOLOGICAL EVOLUTION WITHIN HOLOCYSTITID DIPLOPORITANS**
- 23-24 57 Thompson, Carmi Milagros*; Portell, Roger W.: **FOSSIL INVERTEBRATES FROM THE MONTBROOK VERTEBRATE SITE (LEVY COUNTY, FLORIDA)**
- 23-25 58 Gardner, Kristina F.*; McLaughlin, Peter P.: **A BRIEF COMPARISON OF PALYNOLOGICAL PROCESSING METHODS ON SAMPLES FROM THE PALEOCENE AND EOCENE IN CENTRAL DELAWARE**
- 23-26 59 Pitts, Brady N.*; Lockwood, Rowan; Christie, Max; Sclafani, Judith A.: **DETERMINING THE EFFECTS OF THE MID-PLIOCENE WARM PERIOD ON THE MORPHOLOGY OF *GLYCYMERIS SUBOVATA* (BIVALVIA)**
- 23-27 60 Peterman, David J.*; Osborn, Adam S.; Ciampaglio, Charles N.: **ECHINOID FAUNA OF THE LOWER PLEISTOCENE WACCAWAW FORMATION**
- 23-28 61 Portell, Roger W.*; Thompson, Carmi Milagros: **MOLLUSKS FROM THE MIDDLE TO UPPER EOCENE Ocala LIMESTONE (FLORIDA, USA)**
- 23-29 62 Winter, Peyton*; Keller, Jonathan S.; Tome, Catalina P.; Smith, Felisa A.; Lockwood, Rowan: **THE EFFECTS OF CLIMATE CHANGE AND MEGAFUNAL EXTINCTION ON BODY SIZE AND DIET IN THE HISPID POCKET MOUSE (*CHAETODIPUS HISPIDUS*) OVER THE LATE QUATERNARY**
- 23-30 63 Negron, Kelsey*; Tennakoon, Shamindri; Grun, Tobias B.; Portell, Roger W.; Kowalewski, Michal; Petsios, Elizabeth; Tyler, Carrie L.: **COMPARISON OF NON-LETHAL PREDATORY TRACES IN RECENT AND FOSSIL SAND DOLLARS**
- 23-31 64 Arens, Nan Crystal*; Hunt, Audrey; Cantral, Lily: **REVENGE OF THE SNAILS: SHIFTS IN MOLLUSK DOMINANCE BETWEEN THE MIDDLE PLEISTOCENE AND RECENT SAN SALVADOR, BAHAMAS**
- 23-32 65 Lam, Adriane R.*; Leckie, R. Mark: **MID-LATITUDE PLANKTIC FORAMINIFERAL BIOSTRATIGRAPHY FOR THE NORTHWEST PACIFIC OCEAN, SHATSKY RISE, OCEAN DRILLING PROGRAM HOLES 1207A, 1208A, AND 1209A**
- 23-33 66 Daley, Gwen M.*; Burke, Mikalya M.; Crago, Emily I.; Forney, Sabrina R.: **DO PREDATORY BOREHOLES SIGNIFICANTLY WEAKEN SHELLS: AN ACTUOTAPHONOMIC STUDY USING A ROCK TUMBLER**

SESSION NO. 24

D17. Planetary Geology (Posters)

1:30 PM, Hyatt Regency Reston, Lake Anne

Authors will be present from 3 to 5 PM

Booth #

- 24-1 1 Larsen, C.M.*: **THE EFFECT OF GRAVITY ON ICE SHEET DYNAMICS AND ITS SUPPORT FOR PHLEGRA MONTES' GLACIAL HISTORY**
- 24-2 2 Sikder, Arif M.*; Turner, Joseph B. McGee: **AN ANALYSIS OF THE MICROLITES OF IMPACT MELT GLASSES OF LONAR CRATER, INDIA**
- 24-3 3 Recchuiti, Erin M.*; Hall, Madi; Utterback, Cecillia; Fagan, Amy L.: **LITHOLOGIC DIVERSITY WITHIN LUNAR REGOLITH BRECCIA METEORITE NORTHWEST AFRICA 8783: CLASTS 1 AND 7**
- 24-4 4 Utterback, Cecillia*; Hall, Madi; Recchuiti, Erin M.; Fagan, Amy L.: **LITHOLOGIC DIVERSITY WITHIN LUNAR REGOLITH BRECCIA METEORITE NORTHWEST AFRICA 8783: CLASTS 3 AND 6**
- 24-5 5 Hall, Madi*; Recchuiti, Erin M.; Utterback, Cecillia; Fagan, Amy L.: **LITHOLOGIC DIVERSITY WITHIN LUNAR REGOLITH BRECCIA METEORITE NORTHWEST AFRICA 8783: CLASTS 2 & 5**

SESSION NO. 25

S1. The Past is the Key to the Present—The Role of Paleontology and Geology in Management and Decision Making (Posters)

1:30 PM, Hyatt Regency Reston, Lake Anne

Authors will be present from 3 to 5 PM

Booth #

- 25-1 6 Kaehler, Lauren*; Buechner, Grace Hunt; Meerdink, Katie; Wittmer, Jacalyn M.; Michelson, Andrew V.: **DETECTING HUMAN IMPACTS ON LIVE-DEAD MACROINVERTEBRATE COMMUNITIES IN HONEOYE LAKE, NEW YORK**
- 25-2 7 Buechner, Grace Hunt*; Kaehler, Lauren; Meerdink, Katie; Wittmer, Jacalyn M.; Michelson, Andrew V.: **ANALYSIS OF CONTAINMENTS IN CONESUS LAKE, NEW YORK USING SEDIMENTS AND LIVE-DEAD COMMUNITIES**
- 25-3 8 Cornell, Sean R.*; Oakley, Adrienne; Bochicchio, Christopher: **LESSONS LEARNED FROM TRANSGRESSIVE PALEOZOIC SANDSTONES AND MODERN MID-ATLANTIC BARRIER ISLANDS, CHINCOTEAGUE BAY REGION, VIRGINIA: IMPLICATIONS FOR LAND USE AND MANAGEMENT PLANNING IN THE FACE OF SEA-LEVEL RISE**

SESSION NO. 26

T8. Mega-Traces: Advances in Ichnology and Zoogeomorphology (Posters)

1:30 PM, Hyatt Regency Reston, Lake Anne

Authors will be present from 3 to 5 PM

Booth #

- 26-1 9 Hurrey, Colin*; Buynevich, Ilya V.: **IMPROVING DETECTION OF BIOTURBATION-INDUCED SEEPAGE PATHWAYS ON A FLOODPLAIN: EAST BRANCH PERKIOMEN CREEK, PA**
- 26-2 10 Lewandowski, Rachel*; Buynevich, Ilya V.: **IMAGE-BASED ASSESSMENT OF FISH-INDUCED STREAMBED BIOTURBATION IN NESHAMINY CREEK, BUCKS COUNTY, PENNSYLVANIA**
- 26-3 11 Peronace, Rosa*; Buynevich, Ilya V.; Kopczanski, Karen A.: **ANALYSIS OF SUBSURFACE (800 MHZ GPR) IMAGES OF CRITICALLY ENDANGERED SAN SALVADOR ROCK IGUANAS IN BURROWS, THE BAHAMAS**
- 26-4 12 Campbell, Mariana*; Buynevich, Ilya V.: **DISTRIBUTION AND CHARACTERISTICS OF BEAVER IMPACT ALONG NESHAMINY CREEK, PA: COMPARISON WITH HISTORIC SIGNS OF ACTIVITY**
- 26-5 13 Gorcyca, John M.*; Hiegl, Michael E.; Harrsen, Anton; Gallagher, Patrick T.; Campbell, Mariana; Barrette, Nolan; Roccaro, Alexander; Buynevich, Ilya V.: **DENDROGEOMORPHIC ANALYSIS OF RECENT BEAVER IMPACT ON A STREAM CUTBANK, TYLER STATE PARK, PENNSYLVANIA**

FRIDAY, 20 MARCH

- 26-6 14 Gress, Benjamin D.*; Casas, Giancarlo; Fenning, Mary Kate; Patel, Shraddha; Campbell, Mariana; Barrette, Nolan; Buynevich, Ilya V.: **RIPARIAN COMEBACK: RECENT BEAVER COLONIZATION OF A VERNAL WELAND, TYLER STATE PARK (BUCKS COUNTY, PENNSYLVANIA)**
- 26-7 15 Boyle, Cassidy*; Royzman, Karina; Barrett-Harvey, Collin; Long, Leangsreng; Barrette, Nolan; Buynevich, Ilya V.: **QUANTITATIVE ANALYSIS OF GROUNDHOG BIOTURBAION CLUSTER IN A STREAM-BANK REGOLITH, BUCKS COUNTY, PA**
- 26-8 16 Feldman, Hannah Z.*; Kobl, Christopher T.; Iskra, Sage K.; Gang, Julie M.; Ralff, Salvatore A.; Barrette, Nolan; Buynevich, Ilya V.: **ZOOGEOMORPHIC IMPACT OF UNGULATES ALONG A SMALL BEDROCK-CONTROLLED CREEK, BUCKS COUNTY, PA**
- 26-9 17 Thacker, Hayden*; Hembree, Daniel I.: **NEOICHOLOGICAL STUDY OF BURROWING DARKLING BEETLES (COLEOPTERA: TENEBRIONIDAE) FROM LARVAL TO ADULT STAGES**
- 26-10 18 Oligmueller, Andrew*; Hasiotis, Stephen T.: **A COMPREHENSIVE ICHNOTAXONOMIC TREATMENT OF THE DAKOTA GROUP, FRONT RANGE, COLORADO**

- INCLUSIVE NATURAL HISTORY TOURS AND ACTIVITIES FOR THE VISUALLY IMPAIRED AT THE RUTGERS GEOLOGY MUSEUM**
- 27-8 10:35 AM Katz, Ari*: **ACCESSIBILITY ANALYSIS OF THE BRYN MAWR COLLEGE GEOLOGY DEPARTMENT AND SUGGESTIONS FOR BEST PRACTICES**
- 27-9 10:55 AM Blackwell, Rodney; Bryant, Aniya; Daniels, Amaris; Lawson, Darrius; Morton, Nakana; Nelson, Shakarah; Kelley, Neil P.*; Vanags, Chris P.; Oster, Jessica L.; Claiborne, Lily L.: **EARTH, ENVIRONMENT AND HUMAN INTERACTIONS IN TENNESSEE: INSIGHTS FROM A MULTI-INSTITUTIONAL FIELD COURSE EXPERIENCE**

SESSION NO. 28

S7. The Grenville Orogen in Eastern North America

8:00 AM, Hyatt Regency Reston, Regency Ballroom B

Greg J. Walsh, John N. Aleinikoff and P.A. Mueller, Presiding

- 28-1 8:00 AM Walsh, Gregory J.*; Merschat, Arthur J.; Aleinikoff, John N.; Taylor, Ryan D.; Shah, Anjana K.: **INTEGRATED BEDROCK GEOLOGIC MAPPING IN THE ADIRONDACK HIGHLANDS OF NEW YORK**
- 28-2 8:20 AM Aleinikoff, John N.*; Walsh, Gregory J.; Vervoort, Jeffrey D.: **EVIDENCE FOR THE METAMORPHIC ORIGIN OF 1.05-1.0 GA ZIRCON RIMS FROM THE LYON MOUNTAIN GRANITE GNEISS, ADIRONDACK HIGHLANDS, NEW YORK**
- 28-3 8:40 AM Suarez, Kaitlyn A.*; Walsh, Gregory J.; Williams, Michael L.; Jercinovic, Michael J.; Tjapkes, Daniel J.: **A FIELD ASSESSMENT OF THE GAMMA-RAY SPECTROMETER AND PORTABLE XRF ANALYZER IN DETERMINING POTASSIUM CONCENTRATIONS OF METASOMATIZED GRANITE GNEISS**
- 28-4 9:00 AM Darling, Robert S.*; Ferrero, Silvio; Wannhoff, Iris: **PRIMARY CO₂ FLUID INCLUSIONS FROM THE TRANSITION ZONE OF THE GORE MOUNTAIN GARNET DEPOSIT, CENTRAL ADIRONDACKS, NEW YORK, USA**
- 28-5 9:20 AM Turner, Brian B.*: **ORIGIN OF AMCG BODIES IN THE HUDSON RIVER LINEAMENT: AN OUTRAGEOUS HYPOTHESIS**
- 28-6 9:40 AM Mueller, Paul A.*; Lin, Qianying; Sagul, D. Austin; Foster, David A.; Heatherington, Ann L.: **AGE, ORIGIN, AND DISTRIBUTION OF MESOPROTEROZOIC LITHOSPHERE IN THE SOUTHERN APPALACHIANS**
- 28-7 10:00 AM Southworth, Scott*; Aleinikoff, John N.; Johnson, Thomas A.: **SEDIMENTATION, GRANULITE-FACIES METAMORPHISM, DEFORMATION, AND IGNEOUS INTRUSIONS DEFINE MULTIPLE TECTONIC EVENTS ASSOCIATED WITH THE OTTAWAN-RIGOLET OROGENIES IN PROTEROZOIC ROCKS OF THE APPALACHIAN BLUE RIDGE**
- 28-8 10:20 AM Harris, Felicia*; Moecher, D.P.; Tohver, Eric: **"THE TALE OF 3,000 DETRITAL ZIRCONS": AN INVESTIGATION OF GRENVILLE SEDIMENTATION IN AMAZONIA DURING RODINIAN ASSEMBLY**
- 28-9 10:40 AM Moecher, David P.*; Samson, Scott D.; Tohver, Eric: **SEARCHING FOR GRENVILLIAN LINKAGES BETWEEN LAURENTIA AND AMAZONIA: GOING DOWN THE RABBIT HOLE AND FINDING "THAT PESKY WABBIT" IN THE GREAT SMOKY MOUNTAINS BASEMENT COMPLEX OF SOUTHEASTERN LAURENTIA AND PARAGUA BLOCK IN SOUTHWESTERN AMAZONIA**
- 28-10 11:00 AM Merschat, Arthur*; McAleer, Ryan J.; Carter, Mark W.; Vazquez, Jorge A.: **NEW SHRIMP U-PB GEOCHRONOLOGY FROM THE GLOBE MASSIF, GRANDFATHER MOUNTAIN WINDOW, NC**
- 28-11 11:20 AM Long, Maureen D.*; Benoit, Margaret H.; Aragon, John C.; King, Scott D.: **SEISMIC IMAGING OF CRUSTAL STRUCTURE BENEATH OHIO: POSSIBLY THE ELUSIVE GRENVILLE DEFORMATION?**

SATURDAY, 21 MARCH 2020

MORNING ORAL TECHNICAL SESSIONS

SESSION NO. 27

S4. New Developments in Diversity and Inclusion in the Geosciences

8:00 AM, Hyatt Regency Reston, Regency Ballroom A

Alexander E. Gates and Marilyn J. Suiter, Presiding

- 27-1 8:00 AM Blake, Reginald*; Liou-Mark, Janet; Norouzi, Hamidreza; Yuen-Lau, Laura: **CREATING PATHWAYS FOR NON-GEOSCIENCE, UNDERREPRESENTED STEM MAJORS TO ENTER THE GEOSCIENCE WORKFORCE**
- 27-2 8:20 AM Vlahovic, Gordana*; McGinn, Chris; Malhotra, Rakesh; Mulrooney, Timothy; Doron, Scott; Mancini, Tracy: **GEOPATHS-IMPACT: GROWING GEOSCIENCE ENROLLMENT THROUGH ACADEMIC PARTNERSHIPS WITH NORTH CAROLINA COMMUNITY COLLEGES**
- 27-3 8:40 AM Gates, Alexander E.*: **PEER MENTORING IN MIXED GROUP REU COHORTS TO IMPROVE PERSISTENCE OF URM STUDENTS IN GEOSCIENCES, NEWARK, NJ**
- 27-4 9:00 AM Keating, Kristina*; Mount, Gregory J.; Altermatt, Ellen; O'Connell, Kristin; Hayes, Jordan; Brantley, Susan L.; DiBiase, Roman A.; Gates, Alexander E.; Nyquist, Jonathan; Iverson, Ellen: **EXAMINING THE IMPACT OF A TWO-WEEK NEAR SURFACE GEOPHYSICS FIELD EXPERIENCE ON THE ENGAGEMENT OF STUDENTS UNDERREPRESENTED IN THE GEOSCIENCES**
- 27-5 9:20 AM Claiborne, Lily L.*; Oster, Jessica L.; Young, De'Etra; Byl, Thomas D.; Vanags, Chris P.; Kelley, Neil P.; Goodbred, Steven L.; de Koff, Jason P.: **EARTH HORIZONS: A TSU-VU PARTNERSHIP TO BROADEN PARTICIPATION IN GEOSCIENCES**
- 9:40 AM **BREAK**
- 27-6 9:55 AM Kuchynka, Sophie*; Reifsteck, Tina; Gates, Alexander E.; Rivera, Luis M.: **FACILITATING SCIENCE IDENTITY AND PROMOTING INCLUSIVITY IN GEOSCIENCE THROUGH EXEMPLARS: A LONGITUDINAL HIGH-SCHOOL INTERVENTION IN NEWARK, NJ**
- 27-7 10:15 AM Neitzke Adamo, Lauren*; Criscione, Julia; Irizarry-Barreto, Patricia; Pagenkopf, Lee; Hayden, Daniel: **UTILIZING PHOTOGRAMMETRY AND 3D PRINTERS TO CREATE**

28-12 11:40 AM Ratcliffe, Nicholas M.*: **COMPARATIVE STRUCTURE, BASEMENT COVER RELATIONS, TECTONIC HISTORY OF MESOPROTEROZOIC BASEMENT MASSIFS OF THE WESTERN NEW ENGLAND, VERMONT TO NEW YORK**

SESSION NO. 29

T1. *Abiotic-Biotic Interactions in the Critical Zone*

8:00 AM, Hyatt Regency Reston, Lake Thoreau

Justin Richardson, Presiding

- 29-1 8:00 AM Nelson, Michelle Summa*; Eppes, Martha Cary; Rittenour, Tammy: **DIFFERENTIAL LUMINESCENCE PROPERTIES AND SENSITIVITY IN SAPROLITE AND SOIL AT REDLAIR OBSERVATORY NEAR CHARLOTTE, NC**
- 29-2 8:20 AM Schroeder, Paul A.*; Richter, Daniel deB.; Sanders, Sophia C.: **THE FATE OF DEGRADED MICAS IN THE DEEP CRITICAL ZONE: PATHWAYS TO THE FORMATION OF KAOLINITE AND OTHER SECONDARY MINERALS IN THE S.E. US PIEDMONT**
- 29-3 8:40 AM Morgan, John C.*: **PREDICTING WATER TEMPERATURE VARIATIONS WHERE STREAMS START IN THE SOUTHERN APPALACHIAN MOUNTAINS**
- 29-4 9:00 AM Richardson, Justin*; Zuniga, LeAnn X.; Palmer, Corey A.: **INVESTIGATING EFFECTS OF GEOLOGIC MATERIALS AND LAND-USE ON NUTRIENT EXPORTS FROM THE CRITICAL ZONE – A DEERFIELD RIVER CASE STUDY**
- 29-5 9:20 AM Pope, Gregory A.*; Callanan Reynard, Jennifer; Darley, Jason; Flood, Michael; Wear, Jeffrey; Li, Xiaona; Gorring, Matthew: **THE FATE OF RARE EARTH ELEMENTS IN POST-FIRE SOILS IN THE PENNSYLVANIA POCONO MOUNTAINS**

SESSION NO. 30

T4. *Geoarchaeology of Dynamic Landscapes*

9:55 AM, Hyatt Regency Reston, Lake Thoreau

Daria Nikitina, Ilya V. Buynevich and Heather Wholey, Presiding

- 30-1 9:55 AM Cowan, Ellen A.*; Seramur, Keith C.; Marshall, Scott T.; Costa, January W.: **CONNECTING AN ANTEBELLUM PLANTATION TO ITS REVOLUTIONARY WAR PAST THROUGH SHALLOW GEOPHYSICAL EXPLORATION**
- 30-2 10:15 AM Key, Marcus M.*; Lieber, Spencer; Teagle, Robert: **AN HISTORICAL GEOARCHAEOLOGICAL APPROACH TO SOURCING AN 18TH CENTURY BUILDING STONE: USE OF AQUA CREEK SANDSTONE IN CHRIST CHURCH, LANCASTER COUNTY, VIRGINIA, USA**
- 30-3 10:35 AM Buynevich, Ilya V.*; Bitinas, Albertas; Pupienis, Donatas; Damašytė, Aldona; Tõnisson, Hannes; Brūniņa, Līga; Curran, H. Allen; Kopczyński, Karen A.: **BURIED BY WIND: GEORADAR SHEDS LIGHT ON ANCIENT FORESTS AND SETTLEMENTS ENTOMBED BY RAPIDLY MIGRAING DUNES**
- 30-4 10:55 AM Reeder-Myers, Leslie*; Hein, Christopher J.; Luyando-Flusa, Soely: **SEA LEVEL RISE AND SHELL MIDDENS IN THE RHODE AND WEST RIVERS, CHESAPEAKE BAY, USA**
- 30-5 11:15 AM Wholey, Heather*; Nikitina, Daria; Powers, Michael; Knight, Cameron; Dowling, Katherine: **GEOARCHAEOLOGY IN THE MARSHLANDS: ARCHAEOLOGY AND THE ENVIRONMENT ON SHEPPARD'S ISLAND, DELAWARE**
- 30-6 11:35 AM Nikitina, Daria*; Wholey, Heather; Powers, Michael; Knight, Cameron; Dowling, Katherine: **ARCHEOLOGICAL RECORD AND SEA LEVEL RISE IN THE DELAWARE BAY**

SESSION NO. 31

T28. *Geoscience Careers for New Geoscience Graduates*

8:00 AM, Hyatt Regency Reston, Lake Fairfax

Michael D. Lawless and Ron Wallace, Presiding

8:00 AM **INTRODUCTORY REMARKS**

- 31-1 8:05 AM Okpodu, Camellia*: **USING A MULTIDISCIPLINARY APPROACH TO INTRODUCE THE GEOSCIENCES AS A CAREER OPTION AT XAVIER UNIVERSITY OF LOUISIANA**
- 31-2 8:25 AM Lawless, Michael D.*: **PREPARING OUR WORKFORCE: THINKING DIFFERENTLY ABOUT GEOSCIENCE CAREERS**
- 31-3 8:45 AM Keane, Christopher*: **LEARNING AND SKILL DEVELOPMENT FOR THE LONG-HAUL GEOSCIENCE CAREER**
- 31-4 9:05 AM Barnes, Brandy*: **CREATING OPPORTUNITIES AND GROWTH AS YOUNG PROFESSIONAL GEOSCIENTIST**
- 31-5 9:25 AM Occhi, Marcie*: **LIFE AT A STATE GEOLOGICAL SURVEY: THE VIRGINIA PERSPECTIVE**
- 9:45 AM **BREAK**
- 31-6 10:00 AM Wallace, Ron James*: **GEOLOGY EMPLOYMENT OPPORTUNITIES WITH STATE ENVIRONMENTAL PROTECTION PROGRAMS**
- 31-7 10:20 AM McFarland, J. Todd*: **OPPORTUNITIES FOR AN ENTRY-LEVEL GEOLOGIST WITH A MULTI-DISCIPLINARY GLOBAL CONSULTING FIRM**
- 31-8 10:40 AM Popp, John*: **GEOSCIENCE CAREERS IN THE MINING INDUSTRY**
- 31-9 11:00 AM Willette, Donna Caraway*: **SURPRISE - TRAINING REQUIRED FOR PETROLEUM/HYDROGEOLOGY GEOSCIENTISTS OPENS MANY DOORS TO ADDITIONAL CAREERS**
- 11:20 AM **CONCLUDING REMARKS**

SESSION NO. 32

T29. *Chemostratigraphic, Biotic, and Sedimentologic Changes through Earth History*

8:00 AM, Hyatt Regency Reston, Lake Audubon

Nevin P. Kozik, Chelsie N. Bowman, Sean M. Newby and Selva M. Marroquín, Presiding

- 32-1 8:00 AM Alexander, J.H.*; Kah, L.C.; Altermann, W.: **CENTIMETER-SCALE ALTERNATION WITHIN A LATE ARCHAEOAN CARBONATE PLATFORM: USING STRATIGRAPHIC ANALYSES TO INTERPRET PALEOENVIRONMENTAL VARIATION**
- 32-2 8:20 AM Freeman, Rebecca L.*: **INVASIVE SPECIES IN THE LATE CAMBRIAN-EARLIEST ORDOVICIAN OF LAURENTIA: ANALYZING PATTERNS IN LINGULIFORM BRACHIOPODS**
- 32-3 8:40 AM Kozik, Nevin P.*; Gill, Benjamin C.; Owens, Jeremy D.; Young, Seth A.: **GEOCHEMICAL EVIDENCE FOR DYNAMIC MARINE REDOX CONDITIONS THROUGHOUT THE LATE ORDOVICIAN (HIRNANTIAN) MASS EXTINCTION**
- 32-4 9:00 AM Govert, Daniel J.*; Young, Seth A.; Kaljo, Dimitri; Hints, Olle; Martma, Tonu; Owens, Jeremy D.; Noble, Paula J.: **INVESTIGATING THE ROLE OF MARINE REDOX CONDITIONS IN AN EARLY SILURIAN MASS EXTINCTION (IREVIKEN EVENT): A DEEPER WATER PERSPECTIVE**
- 32-5 9:20 AM He, Ruliang*; Lu, Wanyi; Junium, Christopher K.; Ver Straeten, Charles; Lu, Zunli: **PALEO-REDOX CONTEXT OF THE MID-DEVONIAN APPALACHIAN BASIN AND ITS RELEVANCE TO BIOCRISES**
- 9:40 AM **BREAK**
- 32-6 9:55 AM Edwards, Cole*; Hibner, Brianna M.; Wright, Patrick A.: **CHASING THE LATE DEVONIAN KELLWASSER EVENT IN THE GREAT BASIN REGION, USA: WAS ANOXIA THE MAIN DRIVER OF THE LATE DEVONIAN MASS EXTINCTION?**
- 32-7 10:15 AM Cothren, Hannah R.*; Schoepfer, Shane D.; Xiang, Lei: **NITROGEN ISOTOPE STRATIGRAPHY OF THE PERMIAN-TRIASSIC TRANSITION AT PENGLAITAN, SOUTH CHINA**
- 32-8 10:35 AM Wadhams, Jane A.*; Newby, Sean M.; Them, Theodore R.; Owens, Jeremy D.: **THALLIUM ISOTOPES TRACK CHANGING OCEANIC OXYGEN ACROSS THE PALEOCENE-Eocene THERMAL MAXIMUM**

- 32-9 10:55 AM Regnier, Alexa M.*; Cronin, Thomas; Lockwood, Rowan; Robinson, Marci M.; Dowsett, Harry J.; O'Regan, Matt; Coxall, Helen: **PEAK WARMING DURING MARINE ISOTOPE STAGE 11 IN THE ARCTIC OCEAN BASED ON PLANKTIC FORAMINIFERA**
- 32-10 11:15 AM Williams, Thomas J.*; Martin, Ellen E.; Sikes, Elisabeth; Starr, Aidan: **NEODYMIUM ISOTOPE EVIDENCE FOR COUPLED SOUTHERN OCEAN CIRCULATION AND ANTARCTIC CLIMATE THROUGHOUT THE LAST 120,000 YEARS**
- 32-11 11:35 AM Newby, Sean M.*; Li, Siqi; Karl, Adam; Severmann, Silke; McManus, James; Scholz, Florian; Owens, Jeremy D.: **A DETAILED INVESTIGATION OF THALLIUM ISOTOPES UNDER LOW-OXYGEN OPEN OCEAN CONDITIONS**

MORNING POSTER TECHNICAL SESSIONS

SESSION NO. 33

D1. Economic, Energy, and Engineering Geology (Posters)

8:00 AM, Hyatt Regency Reston, Grand Ballroom A-D

Authors will be present from 10 AM to 12 PM

- | | Booth # | |
|------|---------|---|
| 33-1 | 1 | Long, Jackson G.*; Lachhab, Ahmed: COMPARING SEISMIC REFRACTION, ELECTRICAL RESISTIVITY TOMOGRAPHY AND GROUND PENETRATING RADAR IN THE EXPLORATION OF MINE SHAFTS: CASE STUDY AT CENTRALIA, PA |
| 33-2 | 2 | O'Shea, Thomas*; Farmer, Samantha; Nandi, Arpita: COMMUNICATING ROCKFALL HAZARDS IN GREAT SMOKY MOUNTAINS NATIONAL PARK |
| 33-3 | 3 | Harris, Sarah L.; Whitelaw, Michael J.; Nandi, Arpita*: RESIDENTIAL LANDSLIDE STUDY, ERWIN, TENNESSEE |
| 33-4 | 4 | Lohr, Celeste D.*; Merrill, Matthew D.: PRELIMINARY MAXIMUM FLOODING SURFACE DEPTH MODELING OF THE TUSCALOOSA MARINE SHALE IN SOUTHWEST MISSISSIPPI, USA |
| 33-5 | 5 | Admassu, Yonathan; Woodruff, Celestine; Streicker, Wesley*: AUTOMATED MAPPING OF DEBRIS FLOW SITES BASED ON SURFACE ROUGHNESS OF DIGITAL ELEVATION MODELS (DEMS) |
| 33-6 | 6 | Cho, Vivian H.*; Appaluccio, Elizabeth; Moi, Max; Severs, Matthew J.: GEOCHEMICAL ANALYSIS OF RARE EARTH ELEMENTS IN PROTEROZOIC IRON MINES IN THE NEW JERSEY AND NEW YORK HIGHLANDS REGION |
| 33-7 | 7 | Wiggins, Adrian Alan*; Cemen, Ibrahim: GEOHERMAL ENERGY POTENTIAL IN EXTENDED TERRAINS |

SESSION NO. 34

D9. Hydrogeology (Posters)

8:00 AM, Hyatt Regency Reston, Lake Anne

Authors will be present from 10 AM to 12 PM

- | | Booth # | |
|------|---------|--|
| 34-1 | 1 | Lewis, Jonathan C.*; Lachhab, Ahmed: FLUVIAL ISLANDS ANALYSIS: A CASE STUDY OF INDICATORS ON THE SUSQUEHANNA RIVER |
| 34-2 | 2 | Adams, David J.*; Brunstad, Keith A.: RAIN ON SNOW FLOODING EVENTS AND CLIMATE CHANGE IN THE UPPER SUSQUEHANNA RIVER BASIN AT OWEGO, NY |
| 34-3 | 3 | McKenna, Thomas E.*: FLOW PATHS FOR FLOODING ON THE BACK-BARRIER OF SLAUGHTER BEACH, DELAWARE |
| 34-4 | 4 | Tomlinson, Amanda*; Kessler, Thomas; Jovanelly, Tamie: AN INVESTIGATION OF DAM RELEASE DISCHARGE AND SEDIMENT LOSS ON THE ETOWAH RIVER, ROME, GA, USA |

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|------|---|---|
| 34-5 | 5 | Eldred, Jarod*; Hasbargen, Leslie: GROUNDWATER RESPONSE TO PRECIPITATION WITHIN THE UPPER GLACIAL, MAGOTHY AND LLOYD AQUIFERS, LONG ISLAND, NEW YORK |
| 34-6 | 6 | Little, Dakota*; Kinner, David A.; Hansen, Andy: HOW BAD IS BAD?: AN ANALYSIS OF FEDERAL WATER POLLUTION PROSECUTION CASES PERTAINING TO THE CLEAN WATER ACT |
| 34-7 | 7 | Totman, Madeline W.*; Rayne, Todd W.; Borchardt, Mark A.: USING VIRUSES TO STUDY THE INTERACTION BETWEEN GROUNDWATER AND SURFACE WATER IN CLINTON, NEW YORK |
| 34-8 | 8 | Martinez-Sacristan, Hernando*: FAMILIARIZATION WITH STANDARDS IN AND AROUND GROUNDWATER DEEP WELL DRILLING SITES: FAR FROM THE RHETORIC CLOSER TO REALITY |

SESSION NO. 35

D10. Karst (Posters)

8:00 AM, Hyatt Regency Reston, Lake Anne

Authors will be present from 10 AM to 12 PM

- | | Booth # | |
|------|---------|---|
| 35-1 | 9 | Baumbach, Dylan E.*: COMPARING WATER QUALITY AND BIOLOGIC COMMUNITIES ACROSS CARBONATE AND NON-CARBONATE GEOLOGY IN TWO AGRICULTURALLY INFLUENCED STREAMS IN THE CUMBERLAND VALLEY OF PENNSYLVANIA |
| 35-2 | 10 | Dapkus, Ryan T.*; Mayer, James R.: GEOCHEMISTRY OF A TUFA DEPOSIT, PIGEON MOUNTAIN, GEORGIA |
| 35-3 | 11 | Strasberg, Zachary*; Garcia, Angel A.: PALEOENVIRONMENTAL RECONSTRUCTION OF OWL CAVE, HIGHLAND CO., VA USING $\delta^{13}C$ FROM STALAGMITE AS A PROXY |
| 35-4 | 12 | Reeves, Bethany*; Helmke, Martin F.: ASSESSMENT OF SINKHOLE DEVELOPMENT RELATED TO SURFACE MINING IN NEW HOPE, PA |
| 35-5 | 13 | Riddell, Jill L.*; Vesper, Dorothy: MEASURING THE ADHERENCE OF CARBOXYLATED AND NON-FUNCTIONALIZED POLYSTYRENE MICROSPHERES ONTO A KARST SEDIMENT |

SESSION NO. 36

S3. From the Margins to the Deep: A Tribute to the Science and Art of A. Conrad Neumann (Posters) (GSA Sedimentary Geology Division; GSA Marine and Coastal Geosciences Division; GSA Quaternary Geology and Geomorphology Division; Eastern Section-SEPM (Society for Sedimentary Geology); GSA Geoscience Education Division)

8:00 AM, Hyatt Regency Reston, Grand Ballroom A-D

Authors will be present from 10 AM to 12 PM

- | | Booth # | |
|------|---------|--|
| 36-1 | 8 | Paull, Charles K.*: SUBMARINE PERMAFROST DYNAMICS ALONG THE ARCTIC SHELF EDGE |

SESSION NO. 37

T11. Integrating Field and Modeling Approaches to Understand Changing Coastal Systems (Posters)

8:00 AM, Hyatt Regency Reston, Grand Ballroom A-D

Authors will be present from 10 AM to 12 PM

- | | Booth # | |
|------|---------|--|
| 37-1 | 9 | McQuiggan, Rachel*; Hingst, Mary; Andres, A. Scott; He, Changming; Peters, Chelsea; Michael, Holly A.: INVESTIGATING THE DYNAMICS OF COASTAL GROUNDWATER SALINIZATION IN EAST DOVER, DELAWARE |
| 37-2 | 10 | Buynovich, Ilya V.; Tönisson, Hannes; Tamura, Toru; Döring, Sophia F.S.*; Rosentau, Alar; Kont, Are; Hang, Tiit; Suuroja, Sten; Palginõmm, Valdeko; Vilumaa, Kadri: CONTRASTING MAGNETIC SUSCEPTIBILITY TRENDS IN HOLOCENE COASTAL STRANDPLAINS OF SAAREMAA AND HIUMAA ISLANDS, ESTONIA |

- 37-3 11 Over, Jin-Si R.*; Ames, Katherine; Habeck, Andrea; Psuty, Norbert P.: **OLD STRUCTURES, NEW INSIGHT: ANALYSIS ON SEDIMENT TRANSPORT ALONG A HEAVILY ENGINEERED BAYSIDE BEACH**
- 37-4 12 Ames, Katherine*; Over, Jin-Si R.; Habeck, Andrea; Psuty, Norbert P.: **DOWNDRIFT MIGRATION OF SHORELINE FACETS AT SANDY HOOK, EFFECTS OF BEACH NOURISHMENT, AND IMPLICATIONS FOR MANAGEMENT**
- 37-5 13 Obara, Chloe A.*; Shawler, Justin L.; Connell, Jennifer E.; Hein, Christopher J.: **SPIT ELONGATION AS A CONTROL ON DOWNDRIFT BARRIER-ISLAND STABILITY- INSIGHTS FROM ASSATEAGUE ISLAND, VA**
- 37-6 14 Shawler, Justin L.*; Hein, Christopher J.; Canuel, Elizabeth A.; Kaste, James; Fitzsimons, Gregory G.; Georgiou, Ioannis Y.; Willard, Debra A.: **ANTHROPOGENIC IMPACTS TO SEDIMENTATION IN THE MERRIMACK RIVER ESTUARY: INSIGHTS FROM FIELD, HISTORICAL, AND MODELING APPROACHES**
- 37-7 15 Robbins, Mahinaokalani G.*; Shawler, Justin L.; Hein, Christopher J.: **SEA-LEVEL RISE AND UPDRIFT SEDIMENT TRAPPING DRIVE NET SAND LOSS ALONG THE VIRGINIA BARRIER-ISLANDS**
- 37-8 16 Janoff, Arye*; Lorenzo Trueba, Jorge; Hoagland, Porter; Jin, Di; Ashton, Andrew D.: **THE EFFECTS OF WEALTH INEQUALITIES IN NEIGHBORING COASTAL COMMUNITIES ON THE POTENTIAL ECONOMIC BENEFITS OF COORDINATED BEACH NOURISHMENT**
- 37-9 17 Kollegger, Madeline*; Lorenzo-Trueba, Jorge; Fernandes, Anjali; Singh, Arvind; Abeyta, Antoinette: **PROPAGATION OF ENVIRONMENTAL SIGNALS AND SEA LEVEL VARIATIONS IN FLUVIO-DELTAIC ENVIRONMENTS: INSIGHTS FROM A DUAL MOVING BOUNDARY FRAMEWORK**
- 37-10 18 Scott, Colleen*; Hein, Christopher J.; Pondell, Christina; FitzGerald, Duncan; Hughes, Zoe J.; Georgiou, Ioannis: **PROVENANCE OF HURRICANE-INDUCED SALT MARSH SEDIMENTATION ALONG THE SOUTHEAST US COAST**
- 37-11 19 Cortes, Isamar*; Lorenzo-Trueba, Jorge; Twilley, Robert; Rovai, Andre; Chopping, Mark: **EXPLORING THE RELATIONSHIP BETWEEN MANGROVE ISLAND MORPHOLOGY AND ASYMMETRIC STRESSOR CONCENTRATIONS: COUPLING NUMERICAL MODELING WITH FIELD OBSERVATIONS**
- 37-12 20 Tenebruso, Christopher*; Lorenzo Trueba, Jorge; Ciarletta, Daniel J.; Miselis, Jennifer: **MODELING THE EVOLUTION OF A COUPLED BARRIER-MARSH-LAGOON SYSTEM: INSIGHTS FROM THE NEW JERSEY COASTLINE**
- 37-13 21 Garnand, Alexandra J.*; Hale, Richard P.: **SEDIMENT DYNAMICS IN THE MANGROVES OF SOUTHERN COASTAL BANGLADESH**
- 37-14 22 Brown, Christopher E.; Callahan, Timothy J.*; Kuhl, Hannah; Robinson, Joshua: **MODELING STREAM DISCHARGE RELATIONSHIPS IN TIDAL CREEKS: IMPLICATIONS FOR STORM WATER MANAGEMENT AND SEA LEVEL RISE**
- 37-15 23 Khosbaatar, Norjmaa*; Lorenzo Trueba, Jorge: **THE ROLE OF ORGANIC SEDIMENT DYNAMICS ON THE EVOLUTION OF FLUVIAL DELTAS: COUPLING NUMERICAL MODELING AND FIELD OBSERVATIONS**
- 37-16 24 Barber, Donald C.*; Silva, Camila; Mozdzer, Thomas; Bulseco, Ashley: **VARIABLE CARBON CONTENT IN SHALLOW SALT MARSH SOILS, PLUM ISLAND ESTUARY, MASSACHUSETTS**
- 37-17 25 Silveira Meyers, Joao*; Cornell, Sean R.; Oakley, Adrienne: **ANALYSIS OF HEAVY MINERAL DISTRIBUTION IN MODERN BARRIER ISLAND DEPOSITIONAL ENVIRONMENTS**
- 37-18 26 Powers, Michael*; Nikitina, Daria; Helmke, Martin F.; Payzine, Magnus; Knight, Cameron: **TIDES, GROUNDWATER FLOW AND SALT POND DEVELOPMENT AT SLAUGHTER BEACH SALT MARSH, DELAWARE**
- 37-19 27 Ayers, Mike*; Tenebruso, Christopher: **DETECTING BEACH NOURISHMENT SIGNALS IN MODERN SPIT MORPHOLOGY USING A COUPLED MAPPING AND MODELING APPROACH AT SANDY HOOK, NEW JERSEY**
- 37-20 28 Palermo, Rose*; Ashton, Andrew D.; Jin, Di: **THE EFFECT OF ACCELERATING SEA LEVELS ON BARRIER ISLAND STABILITY**
- 37-21 29 Quintana, Lilliette*; Chang, Clara; Kinney, Sean T.: **IMPROVING SEA LEVEL MODELS FOR THE NEW YORK BIGHT WITH SUBMERGED PEATS**
- 37-22 30 Brown, Christopher E.*; Callahan, Timothy; Robinson, Joshua: **IMPACT OF INFRASTRUCTURE ON NATURAL WATERSHED PROCESSES AND VULNERABILITY TO SEA LEVEL RISE IN COASTAL SOUTH CAROLINA**

SESSION NO. 38***T18. Undergraduate Research I (Posters) (Council on Undergraduate Research Geosciences Division)***

8:00 AM, Hyatt Regency Reston, Grand Ballroom A-D

Authors will be present from 10 AM to 12 PM

Booth #

- 38-1 31 Romero, J.*; Alexander, J.H.; Kah, L.C.; Altermann, W.: **INTERPRETING VARIATION IN WEATHERING COLOR IN ARCHAEOAN CARBONATE ROCKS USING PETROGRAPHY, CATHODOLUMINESCENCE, AND GEOCHEMISTRY: AN INTEGRATED APPROACH**
- 38-2 32 Dowdy, T.*; Kah, L.C.; Altermann, W.; Alexander, J.H.: **EXPLORATION OF POTENTIAL SEISMITES: ARCHEAN NAUGA FORMATION, TRANSVAAL SUPERGROUP, SOUTH AFRICA**
- 38-3 33 Underwood, N.J.*; Kah, L.C.: **INVESTIGATING THE STRATIGRAPHIC ARCHITECTURE OF A POTENTIAL TSUNAMI DEPOSIT**
- 38-4 34 Heins, Megan K.*; Quinton, Page C.; Rygel, Michael C.: **REFINING THE SEQUENCE STRATIGRAPHY OF THE UNION FURNACE SECTION, PA: BUILDING A FRAMEWORK FOR HIGH RESOLUTION GEOCHEMISTRY**
- 38-5 35 Hensley, Andrew*; Borowski, Walter: **HIGH-RESOLUTION LITHOLOGY AND STRATIGRAPHY OF AN OUTCROP WITHIN THE GRUNDY FORMATION, BREATHITT GROUP (PENNSYLVANIAN), SOUTHEAST KENTUCKY**
- 38-6 36 Shatz, Sydney R.*; Holland, Steven M.: **SANDSTONE PROVENANCE OF THE MARINE JURASSIC OF WESTERN CANADA AND CENTRAL MONTANA**
- 38-7 37 Topping, Leah*; McLaurin, Brett T.: **SILCRETE DEVELOPMENT WITHIN FLUVIAL CHANNELS OF THE CEDAR MOUNTAIN FORMATION (EARLY CRETACEOUS), GREEN RIVER, UTAH**
- 38-8 38 Haber, Peter*; Clyde, William C.; Krause, Marcelo; Whelan, Cody: **USING MAGNETOSTRATIGRAPHY TO FIND THE CRETACEOUS-PALEOGENE BOUNDARY IN LA COLONIA FORMATION, PATAGONIA, ARGENTINA**
- 38-9 39 Grotzinger, Heather*; Chen, Christine Y.; Eyster, Athena; Faehnrich, Karol; Hemingway, Jordon; Kasbohm, Jennifer J.; Mateo, Paula; Petrucciani, Alessandra; Osorio Rodriguez, Daniela; Runyon, Hannah; Grotzinger, John P.; Jones, David S.; Knoll, Andrew: **DID THE COLUMBIA RIVER FLOOD BASALTS INITIATE THE MIOCENE CLIMATE OPTIMUM? CONSTRAINING THE TIMING OF LIP VOLCANISM AND CLIMATE CHANGE USING SEDIMENTARY MERCURY CONCENTRATIONS**
- 38-10 40 Chinitz, Raina J.*; Macdonald, Francis A.; Jones, David S.: **USING SEDIMENTARY HG AS A VOLCANIC PROXY: TESTING THE RELATIONSHIP BETWEEN THE MIOCENE CLIMATE OPTIMUM AND THE COLUMBIA RIVER FLOOD BASALTS**
- 38-11 41 Spaur, Sianin*; Pazzaglia, Frank J.; Koeberle, Robin; Peters, Stephen C.; Kodama, Kenneth P.; Nelson, Michelle S.; Rittenour, Tammy: **AGE AND ENVIRONMENTAL CHANGE INFORMATION ENCODED IN EARLY-MIDDLE (?) PLEISTOCENE PALEOSOLS EXPOSED IN BURIED VALLEYS OF THE EASTERN PENNSYLVANIA ANTHRACITE FIELDS**
- 38-12 42 Simoneau, Michael*; Fleeger, Gary M.; Pazzaglia, Frank J.; Corbett, Lee B.; Bierman, Paul R.; Nelson, Michelle S.; Rittenour, Tammy; Caffee, Marc W.: **PLEISTOCENE DRAINAGE REVERSALS AND GORGE CUTTING AT THE LAURENTIDE ICE MARGIN IN**

- NORTHWESTERN PENNSYLVANIA INTERPRETED FROM NEW COSMOGENIC EXPOSURE AND LUMINESCENCE AGES**
- 38-13 43 Byers, Colton*; Brown, Cody; Burkhart, Patrick; Baldauf, Paul; Livingston, Jack; McClinton, Brett; Peet, Ellis; Kramer, Henry D.: **SAND PROVENANCE ACROSS THE WHITE RIVER BADLANDS TOWARD THE NEBRASKA SAND HILLS**
- 38-14 44 Carl, Brian S.; Casey-Sanger, Emrych*; Franzi, David A.; Carl, James D.: **REEXAMINING A POST-GLACIAL DUNE FIELD IN THE ST. LAWRENCE LOWLANDS, NORTHERN NY USING HIGH-RESOLUTION LIDAR HILLSHADE MODELS**
- 38-15 45 Bogin, Caleb J.*; Zani, Abigail; Powers, Sarah K.; Beutel, Corey; Wright, Stephen F.: **MAPPING AND INTERPRETING THE GLACIAL HISTORY OF THE STOWE QUADRANGLE, NORTHERN VERMONT**
- 38-16 46 Prabhakar, Maya*; Thomas, Elizabeth K.; Thirumalai, Kaustubh; Clemens, Steven C.: **USING FORAMINIFERA TO CONSTRAIN GREENLAND ICE SHEET MELT DURING PAST PLEISTOCENE WARM PERIODS**
- 38-17 47 Williams, Rachel G.*; Neitzke Adamo, Lauren; Sarkar, Ria: **RADIOCARBON DATING AND CLIMATIC EVENTS: ANALYZING DEEP-SEA SEDIMENT FROM THE GARDAR DRIFT**
- 38-18 48 DePue, Lee*; Ramsey, Kelvin W.; Balascio, Nicholas L.: **A CONTINUOUS RECORD OF LATE QUATERNARY CLIMATE AND ENVIRONMENTAL CHANGES FROM THE DELAWARE COASTAL PLAIN**
- 38-19 49 Lewis, Noelle S.*; Walker, Jennifer; Barber, Donald C.: **INFAUNAL SALT-MARSH FORAMINIFERA AND BIOTURBATION IN TUCKERTON, NEW JERSEY AND IMPLICATIONS FOR SEA-LEVEL RECONSTRUCTIONS**
- 38-20 50 Hansen, Lucy*; Hankla, Claire; Oquendo, Lesly; Glumac, Bosiljka; Newton, Robert M.; Caris, Jon; Tien, Tracy; Harnisch, Emma E.: **TESTING THE USE OF RFID (RADIO FREQUENCY IDENTIFICATION) IN STUDYING TRANSPORT OF GRAVEL BY THE MILL RIVER ON SMITH COLLEGE CAMPUS IN NORTHAMPTON, MASSACHUSETTS**
- 38-21 51 Sidlowski, James William*; Childers, Daniel P.: **THE SEDIMENTS OF DUPONT ENVIRONMENTAL EDUCATION CENTER, WILMINGTON, DELAWARE**
- 38-22 52 Collins, Amanda Paige*; Childers, Daniel P.: **MAPPING FOR THE SOIL SEDIMENT RESEARCH STUDY, AT DELAWARE COUNTY COMMUNITY COLLEGE**
- 38-23 53 Gallagher, Liam*; Seeley, Victoria; Collins, Amanda Paige; Sidlowski, James William; McIntosh, Dana C.; Childers, Daniel P.: **THE COMPARISON OF SEDIMENTS CONTENT AND PHI SIZE IN DIFFERENT ENVIRONMENTS**
- 38-24 54 Capp, John A.*; Ebersole, Sandy: **SPATIAL AND STRATIGRAPHIC DISTRIBUTION OF SINKHOLES IN BLOUNT COUNTY, ALABAMA: A STUDY USING LIDAR FOR MAPPING SINKHOLE HAZARDS AND RISK ZONES**
- 38-25 55 Aeschliman, Molly*; Shen, Zhixiong: **TEST USING SEDIMENTARY RECORDS TO QUANTIFY EXTREME PALEO-FLOOD: A CASE STUDY OF AN OXBOW LAKE IN SOUTH CAROLINA**
- 38-26 56 Gainey, Erica; Odgers, Erin; Harris, M. Scott*: **ALLUVIAL FAN EVOLUTION IN THE SANTEE RIVER BASIN (SC) SINCE THE LAST GLACIAL MAXIMUM**
- 38-27 57 Stanley, Olivia L.*; Johnson, Bradley G.: **MORPHOLOGY AND EVOLUTION OF THE LINVILLE RIVER, NORTH CAROLINA, USA**
- 38-28 58 Millett, Amber L.*; Rachide, Stephen P.; Diemer, John A.: **TRACKING THE DEVELOPMENT OF A BEAVER POND COMPLEX IN THE SOUTHEASTERN PIEDMONT, CHARLOTTE NC**
- 38-29 59 Parker, Carey E.*; Barber, Donald C.; Cassidy, Galen Patrick; Lewis, Noelle S.: **EFFECT OF DITCH CONSTRUCTION ON CARBON STORAGE AND SALT MARSH RESILIENCY IN COASTAL NORTH CAROLINA**
- 38-30 60 Williams, Sheri J.*; Vance, R. Kelly: **MICROPLASTIC DEPOSITION ON ST. CATHERINES ISLAND, GEORGIA**

- 38-31 61 Washington, Kayla*; Shen, Zhixiong; Allison, Mead A.: **USING FORAMINIFERA TO IDENTIFY OVERWASH DEPOSITS IN ST VINCENT ISLAND, FLORIDA, IN THE WAKE OF HURRICANE MICHAEL**
- 38-32 62 Brown, Colby W.*; Culver, Stephen J.; Mallinson, David J.; Allen, Cody W.; Shmorhun, Nina M.E.: **THE EFFECTS OF HURRICANES ON THE SEDIMENTOLOGIC AND FORAMINIFERAL CHARACTERISTICS OF BARRIER ISLAND SUBENVIRONMENTS: BEAR ISLAND, NORTH CAROLINA**
- 38-33 63 Willet, Amanda*; Malinconico, Lawrence L.: **USING GEOPHYSICAL DATA TO EVALUATE THE POTENTIAL FOR CARBON SEQUESTRATION IN INDIANA, LANCASTER, AND LEBANON COUNTIES, PENNSYLVANIA**
- 38-34 64 Shellenberger, Kim*; Wagner, Nicole: **UNIVERSAL SOIL LOSS EQUATION AND ARCGIS APPLICATIONS IN EROSION OF ARSENIC CONTAMINATED SOIL**
- 38-35 65 Wallen, Benjamin M.*; Wright, William; Avellaneda-Ruiz, Antonio R.; Roth, Benjamin T.; Payne, Elijah A.; Kimball, Mindy A.; Sheehan, Nathaniel; Bier, Peter V.: **HISTORIC THRUWAYS: THE SPATIAL AND TEMPORAL DISTRIBUTION OF SOIL LEAD CONCENTRATION AT WEST POINT**

AFTERNOON ORAL TECHNICAL SESSIONS

SESSION NO. 39

D8. Geoscience Education

1:30 PM, Hyatt Regency Reston, Lake Audubon

Lori Weeden and Tarin Weiss, Presiding

- 1:30 PM **INTRODUCTORY REMARKS**
- 39-1 1:35 PM Carpenter, Mark; Dodge, Rebecca L.; Robeck, Ed*: **PREPARING TEACHERS NEW TO THE EARTH SCIENCE CLASSROOM: CHALLENGES AND SUCCESS STORIES FROM A FIVE YEAR ONLINE PROGRAM**
- 39-2 1:55 PM Weeden, Lori*: **ENGAGING CIVIL AND ENVIRONMENTAL ENGINEERS THROUGH ACTIVE LEARNING AND ONLINE QUIZZES**
- 39-3 2:15 PM Gribbin, Sarah*; Townsend, Lori; Batko, Kristen: **MAPPING THE SEA SURFACE AND OCEAN DEPTH FROM SPACE: AN ACTIVITY FOR HIGH SCHOOL STUDENTS**
- 39-4 2:35 PM Gribbin, Sarah; Batko, Kristen*; Townsend, Lori: **WIND-DRIVEN OCEAN CIRCULATION: AN ACTIVITY FOR K-8 STUDENTS**
- 39-5 2:55 PM Gomby, Gary*: **TEACHING THE ANTHROPOCENE: A NEW PARADIGM FOR GEOSCIENCE EDUCATION**
- 3:15 PM **BREAK**
- 39-6 3:30 PM Weeden, Lori*: **TEACHING CLIMATE CHANGE: AN INTERDISCIPLINARY APPROACH TO K-12 TEACHER PROFESSIONAL DEVELOPMENT**
- 39-7 3:50 PM Kauffman, Shelley*; Kraal, Erin: **EARTH-TAKES: A SEMESTER-LONG PROJECT IN STUDENT-PRODUCED AUDIO NARRATIVES**
- 39-8 4:10 PM DiPrinzio, Tovah Dyann*: **TEACHING THE LANGUAGE OF EARTH SCIENCE: BEST PRACTICES FOR THE K-12 CLASSROOM WITH A FOCUS ON ENGLISH LANGUAGE LEARNERS AND CONTENT ABSORPTION**
- 39-9 4:30 PM Meyer, Michael*; Sarvis, Albert: **DO VIRTUAL REALITY ROCK HAMMERS DREAM OF ELECTRIC ROCKS? EXAMPLES IN DEVELOPING VR FIELD EXPERIENCES FROM SOUTH-CENTRAL PENNSYLVANIA**
- 39-10 4:50 PM Mickle, Katherine*; Burkhart, Patrick; Baldauf, Paul; Hilton, Jason: **INTEGRATING FINE ART AND SCIENCE TO BETTER UNDERSTAND THE WHITE RIVER BADLANDS**

SESSION NO. 40**D13. Paleobiology**

1:30 PM, Hyatt Regency Reston, Lake Thoreau

Adriane R. Lam and Maggie R. Limbeck, Presiding

- 40-1 1:30 PM Gibson, Brandt M.*; Furbish, David J.; Laflamme, Marc; Darroch, Simon A.F.: **RECONSTRUCTING COMMUNITY-SCALE EDIACARAN PALEOECOLOGY USING COMPUTATIONAL FLUID DYNAMICS**
- 40-2 1:50 PM Deline, Bradley*; Ferrón, Humberto G.; Donoghue, Philip C.J.: **COMPARING CATEGORICAL AND GEOMETRIC MORPHOMETRIC METHODS IN QUANTIFYING MORPHOLOGY WITHIN OSTEOSTRACI**
- 40-3 2:10 PM Lam, Adriane R.*; Sheffield, Sarah L.; Matzke, Nicholas J.: **PALEOBIOGEOGRAPHY OF THE EARLY PALEOZOIC ECHINODERMS ACROSS THE GREAT ORDOVICIAN BIODIVERSIFICATION EVENT**
- 40-4 2:30 PM Zachos, Louis G.*; Ziegler, Alexander: **DID PROTOSCTELLID SAND DOLLAR ECHINOIDS POSSESS GREGORY'S DIVERTICULUM?**
- 40-5 2:50 PM Drummer, Keara Y.*; Gishlick, Alan D.: **FORK STRUCTURE ALLOMETRY IN THE TRILOBITE *WALLISEROPS TRIFURCATUS* CORRELATES WITH A SEXUALLY SELECTED FUNCTION**
- 40-6 3:10 PM Kirkpatrick, Donald R.*; Cicimurri, David J.: **PRELIMINARY ANALYSIS OF THREE LATE CRETACEOUS MARINE VERTEBRATE ASSEMBLAGES FROM THE PEEDEE FORMATION AT ALLISONS FERRY, CAINS LANDING, AND BURCHES FERRY, FLORENCE COUNTY, SOUTH CAROLINA**
- 40-7 3:30 PM Gallucci, John E.*; Ullmann, Paul Victor; Grandstaff, David E.; Ash, Richard; Terry, Dennis O.: **SOFT TISSUE AND CELLULAR PRESERVATION IN LATE EOCENE-OLIGOCENE VERTEBRATE FOSSILS OF THE WHITE RIVER BADLANDS**
- 40-8 3:50 PM Sumrall, Colin D.*: **COOPERIDISCUS, DINOCYSTIS AND THE ORIGIN OF DISCOCYSTINID EDRIOASTEROIDS**

SESSION NO. 41**T3. Paleolimnological Records of Climate and Environmental Change**

1:30 PM, Hyatt Regency Reston, Regency Ballroom A

Timothy L. Cook and Nicholas L. Balascio, Presiding

- 1:30 PM **INTRODUCTORY REMARKS**
- 41-1 1:50 PM Welch, Sydney*: **DIATOM INDICATORS OF ENVIRONMENTAL CHANGE IN SEDIMENTS OF NORTHERN NEW ENGLAND LAKES**
- 41-2 2:10 PM Doner, Lisa A.*: **LITTLE FEN, BIG DATA: MORE THAN 13,000 YEARS OF DEPOSITIONAL RECORD AT QUINCY BOG, RUMNEY, NH**
- 41-3 2:30 PM Thibodeau, Alyson M.*; Curley, Allison N.; Bonsey, Kendra; Barber, Donald C.; Strock, Kristin E.: **INVESTIGATION OF MERCURY BURIAL IN TWO SMALL LAKES UNDERGOING BROWNING IN NORTHEASTERN PENNSYLVANIA**
- 41-4 2:50 PM Conway, Nicholas William; Shen, Zhixiong*; Muñoz, Samuel E.; Mauz, Barbara: **THE MAGNITUDE OF CLIMATICALLY TUNED EXTREME INLAND FLOODING REDUCED IN THE SOUTHEASTERN US**
- 41-5 3:10 PM Rodysill, Jessica R.*; Donnelly, Jeffrey P.: **PALEOFLOOD HISTORIES FROM TWO SINKHOLE LAKES IN THE CHOCTAWHATCHEE RIVER FLOODPLAIN IN FLORIDA**
- 3:30 PM **BREAK**
- 41-6 3:45 PM Steele, Kristen L.*; Rodysill, Jessica R.; Donnelly, Jeffrey; Stone, Jeffery R.; Toomey, Michael: **A DROUGHT HISTORY FOR THE PAST 4000 YEARS INFERRED FROM SEDIMENTOLOGIC EVIDENCE OF LAKE LOWSTANDS IN LAKE JACKSON, FLORIDA/ALABAMA**
- 41-7 4:05 PM Schneider, Tobias*; Castañeda, Isla S.; Salacup, Jeffrey M.; Zhao, Boyang; Makri, Stamatina; Grosjean, Martin; Bradley, Raymond S.: **PAST CLIMATE VARIABILITY FROM SOUTHERN GREENLAND LAKE SEDIMENTS: EXPLORING THE POTENTIAL OF SEDIMENTARY LIPID BIOMARKERS COMBINED WITH NOVEL HYPERSPECTRAL IMAGING TECHNIQUES**

SESSION NO. 42**T5. Drill, Drill, Drill! A Tribute to USGS Drillers Eugene "Big Gene" Cobbs, Eugene "Little Gene" Cobbs, III, and Jeff Grey, and Their Contributions to Geologic Research East of the Mississippi River**

1:30 PM, Hyatt Regency Reston, Regency Ballroom B

Jean M. Self-Trail and Kenneth G. Miller Sr, Presiding

- 42-1 1:30 PM Gohn, Gregory S.*: **FIFTY YEARS OF USGS SCIENTIFIC DRILLING IN THE EASTERN UNITED STATES: REMINISCING ABOUT PEOPLE, PLACES, AND PROJECTS**
- 42-2 1:50 PM Miller, Kenneth G.*; Sugarman, Peter J.; Browning, James V.: **EASTERN REGIONAL ROOTS, GLOBAL REACH: DEVELOPING GLOBAL SEA-LEVEL HISTORY AND A RECORD OF MAJOR EVENT BY DRILLING THE MID-ATLANTIC COASTAL PLAIN**
- 42-3 2:10 PM Farrell, Kathleen M.*: **COLLECTION OF HIGH-QUALITY GEOLOGIC CORES BY NORTH CAROLINA GEOLOGICAL SURVEY AND U.S. GEOLOGICAL SURVEY DRILLERS, SOUTHEAST ATLANTIC COASTAL PLAIN, NORTH CAROLINA**
- 42-4 2:30 PM Self-Trail, Jean M.*; Harris, W. Burleigh; Aleman Gonzalez, Wilma B.; Moore, Jessica Pierson; Farrell, Kathleen M.: **DEPOSITIONAL SEQUENCE STRATIGRAPHY OF TURONIAN TO SANTONIAN SEDIMENTS OF THE NORTH CAROLINA COASTAL PLAIN**
- 42-5 2:50 PM Moore, Jessica Pierson*: **RARE EARTH ELEMENTS IN THE CRETACEOUS OF THE CAROLINA COASTAL PLAIN: DEPOSITIONAL SEQUENCES, PARENT ROCKS, AND SUBSURFACE DISTRIBUTION OF PROSPECTIVE LITHOLOGIES**
- 42-6 3:10 PM Sugarman, Peter J.*; Miller, Kenneth G.; Browning, James V.; McLaughlin, Peter P.; Thornburg, Jesse D.: **COREHOLES PROVIDE GROUND TRUTH FOR THE HYDROSTRATIGRAPHIC FRAMEWORK OF THE CRETACEOUS POTOMAC-RARITAN-MAGOTHY AQUIFER SYSTEM OF THE NEW JERSEY COASTAL PLAIN**
- 42-7 3:30 PM McLaughlin, Peter P.*; Andres, A. Scott; Baxter, Stefanie J.; Browning, James V.; Buchanan, Tyler J.; Fulton, Michael; McCreary, Paul S.; McKenna, Thomas E.; Miller, Kenneth G.; Ramsey, Kelvin W.; Schenck, William S.; Tomlinson, Jaime L.: **GOLDEN SPIKES IN THE DELAWARE COASTAL PLAIN: ADVANCES IN SUBSURFACE STRATIGRAPHY THROUGH WIRELINE CORING**
- 42-8 3:50 PM Edwards, Lucy E.*; Kidwell, Susan M.; Powars, David S.; Schindler, J. Stephen: **THE DINOCYSTS OF THE MORAN LANDING CORE, CALVERT CLIFFS, MARYLAND: NEW EVIDENCE FOR A HIGH-ANGLE REVERSE FAULT AFFECTING MIOCENE STRATA**
- 42-9 4:10 PM Rush, William D.*; Zachos, James C.; Kiehl, Jeffrey; Shields, Christine: **CHANGES HYDROLOGY AND SEDIMENTATION DURING THE PALEOCENE-EOCENE THERMAL MAXIMUM IN THE SALISBURY EMBAYMENT, USA**
- 42-10 4:30 PM Bralower, Timothy J.*; Kump, Lee R.; Self-Trail, Jean M.; Robinson, Marci M.; Lyons, Shelby L.; Babila, Tali L.; Ballaron, Edward; Freeman, Katherine H.; Hajek, Elizabeth; Rush, Will D.; Zachos, James C.: **EVIDENCE FOR SHELF ACIDIFICATION DURING THE ONSET OF THE PALEOCENE-EOCENE THERMAL MAXIMUM**
- 42-11 4:50 PM Bierly, Aaron D.*: **CORE DRILLING THE ALLEGHENY PLATEAU IN THE PA WILDS AND ITS VALUE IN GEOLOGIC MAPPING**

42-12 5:10 PM Hutsky, Andrew J.*: **EVIDENCE FOR MULTIPLE SEA-LEVEL INCURSIONS WITHIN THE UPPER DEVONIAN CATSKILL FORMATION, CAMERON AND MCKEAN COUNTIES, NORTH-CENTRAL PENNSYLVANIA**

SESSION NO. 43**T27. Appalachian Petrology: A Session to Honor the Career of Dr. Robert J. Tracy**

1:30 PM, Hyatt Regency Reston, Lake Fairfax

Willis E. Hames, Nicholas M. Ratcliffe, C. Dietsch and Mark J. Caddick, Presiding

- 1:30 PM **INTRODUCTORY REMARKS**
- 43-1 1:35 PM Tull, James F.*; Lupo, Mary E.: **MIDDLE PALEOZOIC SUCCESSOR BASIN SEQUENCES IN THE SOUTHERN APPALACHIAN WESTERN BLUE RIDGE/TALLADEGA BELT: IMPLICATIONS FOR TECTONIC EVOLUTION**
- 43-2 1:55 PM Hames, Willis*: **THE PETROLOGIC AND ⁴⁰AR/³⁹AR RECORD OF CULMINATING ALLEGHANIAN METAMORPHISM AND WIDESPREAD CORE-COMPLEX STYLE EXHUMATION OF THE SOUTHEASTERN APPALACHIANS**
- 43-3 2:15 PM Felix, Breana; Willard, Sierra Rose; El-Shazly, Aley K.*: **P-T CONDITIONS AND CHEMISTRY OF GEDRITE - ANTHOPHYLLITE - GARNET SCHISTS FROM THE LITTLE PINE GARNET MINE, NC: IMPLICATIONS FOR THE TECTONIC EVOLUTION OF THE WESTERN BLUE RIDGE**
- 43-4 2:35 PM Belkin, Harvey E.*: **PERALKALINE AND METALUMINOUS GRANITOIDS AND VOLCANICS OF THE NEOPROTEROZOIC RIFT-RELATED ROBERTSON RIVER IGNEOUS SUITE, NORTHERN VIRGINIA, USA: NB-TA OXIDES AND THEIR ALTERATION**
- 2:55 PM **DISCUSSION**
- 3:10 PM **BREAK**
- 43-5 3:25 PM Ratcliffe, Nicholas M.*: **STRUCTURAL PETROLOGY OF THE LATE ORDOVICIAN APPINITE COMPLEXES OF THE CORTLANDT INTRUSIVE SUITE (CIS) AND YOUNGER EARLY SILURIAN(?) GRANITES ALONG CAMERONS LINE**
- 43-6 3:45 PM Millonig, Leo J.; Albert, Richard; Gerdes, Axel; Avigad, Dov; Dietsch, C.*: **IN SITU THIN SECTION LA-ICP-MS U-PB DATING OF MONAZITE AND XENOTIME FROM THE STRAITS SCHIST, WESTERN CONNECTICUT SUPPORTS PROLONGED ACADIAN REGIONAL METAMORPHISM IN THE GNEISS DOME BELT**
- 43-7 4:05 PM Wolfe, Oliver M.*; Spear, Frank S.: **CONSTRAINING PRESSURE-TEMPERATURE CONDITIONS OF GARNET DISSOLUTION-REPRECIPITATION REACTIONS IN THE GOSHEN FORMATION OF WESTERN MASSACHUSETTS WITH QUARTZ INCLUSION BAROMETRY**
- 43-8 4:25 PM Valley, Peter M.*; Walsh, Gregory J.; McAleer, Ryan J.; Mersch, Arthur: **TECTONIC IMPLICATION OF NEW U-PB ZIRCON AGES IN THE BRONSON HILL ARC: WESTERN NEW HAMPSHIRE, USA**
- 43-9 4:45 PM West, David P.*; Peterman, Emily M.; Chen, Jessica: **IGNEOUS PETROGENESIS AND OVERPRINTING DEFORMATION AND METAMORPHISM OF THE EARLY DEVONIAN EDGEComb GNEISS, MID-COASTAL MAINE**
- 43-10 5:05 PM Chiama, Kristen*; Rutledge, Randolph; Gabor, Morgan; Lupini, Isabella; Hazen, Robert M.; Zhang, Shuang; Boujibar, Asmaa: **GARNET: A COMPREHENSIVE, STANDARDIZED, GEOCHEMICAL DATABASE INCORPORATING LOCATIONS AND PARAGENESIS**
- 5:25 PM **CONCLUDING REMARKS**

AFTERNOON POSTER TECHNICAL SESSIONS

SESSION NO. 44**D19. Structural Geology and Tectonics (Posters)**

1:30 PM, Hyatt Regency Reston, Grand Ballroom A-D

Authors will be present from 3 to 5 PM

Booth #

- 44-1 1 Cortese, Callia*; Mersch, Arthur; Love, Anthony; Moyer, Griffin A.; MacLennan, Scott A.; Eddy, Michael P.; Casale, Gabriele: **FIELD, TEXTURAL, AND GEOCHEMICAL OBSERVATIONS FROM RHYOLITES ALONG THE CONTACT BETWEEN THE MOUNT ROGERS AND KONNAROCK FORMATIONS, SOUTHWEST VIRGINIA**
- 44-2 2 Belding, Samuel E.*; Bailey, Christopher M.; Kay, Jon P.: **ANALYSIS OF BRITTLE DEFORMATION FEATURES IN THE CHANNEL OF THE JAMES RIVER, WESTERN PIEDMONT VIRGINIA: TRADITIONAL AND REMOTE SENSING TECHNIQUES**
- 44-3 3 Weiss, Jake Daren*; Evans, Mark A.: **FRACTURE AND FLUID HISTORY OF THE NORTHERN SECTION OF THE NORTH MOUNTAIN THRUST SHEET, SOUTHERN PENNSYLVANIA AND MARYLAND**
- 44-4 4 Myrman, Tyler J.*: **INVESTIGATING PALEOZOIC TECTONIC DEFORMATION OF THE WESTERN HIGHLAND RIM, TENNESSEE**
- 44-5 5 Westberg, Caylynn*; Langille, Jackie: **CONSTRAINING THE TIMING OF ACADIAN DEXTRAL TRANSPRESSION OF THE BURNSVILLE SHEAR ZONE WITHIN THE CLYDE 7.5-MINUTE QUADRANGLE, WESTERN NORTH CAROLINA**
- 44-6 6 McLaurin, Brett T.*; Whisner, S. Christopher; Whisner, Jennifer: **SURFACE STRUCTURAL EXPRESSION RELATED TO SUBSURFACE SALT THICKNESS, APPALACHIAN PLATEAU, BRADFORD AND TIOGA COUNTIES, PENNSYLVANIA**
- 44-7 7 Campbell, Patricia A.*; Gloeckner, Nicole; Jayne, Caylee; Lucas, Emilee; Anderson, Thomas H.: **STRUCTURAL FEATURES WITHIN SLIDES AND DEBRIS FLOWS OF THE MORGANTOWN SANDSTONE, EASTERN MARGIN OF THE APPALACHIAN PLATEAU, WESTERN PENNSYLVANIA**
- 44-8 8 Johnston, Kyrsten*; Mitra, Gautam: **MECHANICAL DIFFERENCES BETWEEN LIFT-OFF AND DISHARMONIC FOLDS: EXAMPLES FROM THE SEVIER FOLD-THRUST BELT, WESTERN SAN RAFAEL SWELL, UT AND THE HUDSON VALLEY FOLD-THRUST BELT, NY**
- 44-9 9 Austin, Sarah*; Mitra, Gautam; Trail, Dustin: **TITANIUM IN QUARTZ THERMOMETRY: BEYOND SHEAR SENSE, ARE RECRYSTALLIZED QUARTZ TAILS ON PORPHYROCLASTS USEFUL FOR EVALUATING DEFORMATION CONDITIONS?**
- 44-10 10 Valentino, Joshua*; Valentino, David: **FRACTURES IN THE MESOPROTEROZOIC ADIRONDACK BASEMENT AND THE LINK TO FRACTURES IN THE OVERLYING PALEOZOIC STRATA**
- 44-11 11 Mako, Calvin*; Sargent, Christopher; Peterman, Emily M.: **QUARTZ GRAIN SIZE PIEZOMETRY AND C-AXIS FABRIC THERMOMETRY IN THE SANDHILL CORNER MYLONITE ZONE: IMPLICATIONS FOR SHEAR ZONE EVOLUTION**
- 44-12 12 Conklin, Zoe*; Sellitti, Matthew; Valentino, David; Gates, Alexander; Goring, Matthew; Chiarenzelli, Jeffrey: **MESO- TO NEOPROTEROZOIC TRANSPRESSION TO TRANSTENSION IN THE WESTERN HUDSON HIGHLANDS, NEW YORK**
- 44-13 13 Nubbe, Eric*; Bailey, Christopher M.: **A TECTONIC ORIGIN FOR LISTWAENITE IN THE SEMAIL OPHIOLITE AT WADI MANSAH, NORTHERN OMAN**
- 44-14 14 Goch, D.M.*; Tenorio, F.; Wang, A.; Min, K.: **APATITE (U-TH)/HE AGES FROM THE PENEPLAIN IN THE EASTERNMOST TIENSHAN, CHINA**

- 44-15 15 Hafling, B.*; Ahn, U.S.; Min, K.; Kamenov, G.: **TIMING OF ERUPTION AND ALTERATION OF RHYOLITIC VOLCANICS IN CHUJA ISLAND (SW KOREA) REVEALED FROM ZIRCON U/PB AND (U-TH)/HE GEOCHRONOLOGY**

SESSION NO. 45**S2. The Appalachians, from North to South, from Crust to Mantle (Posters) (GSA Structural Geology and Tectonics Division; GSA Geophysics and Geodynamics Division)**

1:30 PM, Hyatt Regency Reston, Grand Ballroom A-D

Authors will be present from 3 to 5 PM

Booth #

- 45-1 16 Sarver, Kyle T.*; Ma, Susan; Kerrigan, Ryan J.; Coleman, Neil: **USING GEOPHYSICAL METHODS TO DELINEATE LITHOLOGIC BOUNDARIES IN THE PENNSYLVANIA PIEDMONT**
- 45-2 17 Cipar, John J.*; Ebel, John E.: **MAPPING UPPER MANTLE VELOCITY ANOMALIES IN THE EASTERN UNITED STATES USING TELESEISMIC P-WAVE RESIDUALS**
- 45-3 18 Lopes, Ethan*; Long, Maureen D.; Karabinos, Paul; Aragon, John C.: **SKS SPLITTING BENEATH CONNECTICUT: CONSTRAINTS FROM THE SEISCONN ARRAY**
- 45-4 19 Allen, Daniel*; Long, Maureen D.: **SHEAR WAVE SPLITTING AND UPPER MANTLE ANISOTROPY BENEATH SOUTHERN NEW ENGLAND**
- 45-5 20 Evans, Mark A.*: **STRATIGRAPHIC AND SPATIAL VARIATION IN PALEOFLUID COMPOSITION AND TRAPPING CONDITIONS IN THE PENNSYLVANIA SALIENT DURING THE ALLEGHANIAN OROGENY**
- 45-6 21 Browning-Hanson, Joseph*; Webb, Laura E.; Piccoli, Philip M.; Viète, Daniel R.: **RESOLVING THE RIFTING OF RODINIA: A NOVEL COMPARATIVE DETRITAL GEOCHRONOLOGY APPROACH APPLIED ALONG THE FULL LENGTH OF THE APPALACHIAN-CALEDONIAN SYSTEM**
- 45-7 22 Jordan, Teresa E.*; Brown, Larry D.; Allmendinger, Richard W.; May, Daniel F.; Pritchard, Matthew E.: **THRUST SPLAYS FROM A CAMBRIAN DECOLLEMENT OVER 100 KM NORTH OF THE ALLEGHANY FRONT, TOMPKINS COUNTY, NEW YORK STATE**
- 45-8 23 Kopinski, Kayla P.*; Solar, Gary S.; Tomascak, Paul B.: **PORPHYROBLAST-MATRIX RELATIONS IN MYLONITE IN THE NORUMBEGA SHEAR ZONE SYSTEM, HARPSWELL NECK AREA, SOUTHERN COASTAL MAINE**
- 45-9 24 Schnalzer, Kristin M.*; Webb, Laura E.; McCarthy, Kyle: **EVIDENCE FOR POLYPHASE DEFORMATION IN THE MYLONITIC ZONES BOUNDING THE CHESTER AND ATHENS DOMES, SOUTHEASTERN VERMONT, FROM ⁴⁰AR/³⁹AR GEOCHRONOLOGY**
- 45-10 25 Hassan, Syeda*; McGary, R. Shane: **ASSESSING THE VIABILITY OF VIRGINIA GEOLOGY FOR GEOTHERMAL POWER PRODUCTION USING MAGNETOTELLURICS**

SESSION NO. 46**S7. The Grenville Orogen in Eastern North America (Posters)**

1:30 PM, Hyatt Regency Reston, Grand Ballroom A-D

Authors will be present from 3 to 5 PM

Booth #

- 46-1 26 Dwyer, Trevor*; Cao, Wentao*; Fournelle, John H.: **PRESSURE-TEMPERATURE PATH OF MIGMATITE FROM LAC DUMOINE TERRANE, WESTERN GREENVILLE PROVINCE**
- 46-2 27 Tjapkes, Daniel J.*; Suarez, Kaitlyn A.; Jercinovic, Michael J.; Williams, Michael L.: **MONAZITE PETROCHRONOLOGY OF ADIRONDACK LOWLANDS MIGMATITES: IMPLICATIONS FOR THE SIGNIFICANCE OF THE CARTHAGE-COLTON MYLONITE ZONE**
- 46-3 28 Helms, Caitlin*; Bosbyshell, Howell: **FORMATION OF GARNET IN THE HONEY BROOK ANORTHOSITE, CENTRAL APPALACHIAN PIEDMONT, SE PENNSYLVANIA**

- 46-4 29 Cao, Wentao*; Massonne, Hans-Joachim: **PRESSURE-TEMPERATURE PATH OF THE HIGH-PRESSURE BELT IN EASTERN SECTION OF THE WESTERN GREENVILLE PROVINCE**

- 46-5 30 Eling, Reece P.*; Stein, Seth; Stein, Carol; Barklage, Mitchell; Keller, G. Randy: **UNSCRAMBLING THE MIDCONTINENT RIFT AND GRENVILLE FRONT USING GRAVITY DATA**

SESSION NO. 47**T1. Abiotic-Biotic Interactions in the Critical Zone (Posters)**

1:30 PM, Hyatt Regency Reston, Grand Ballroom A-D

Authors will be present from 3 to 5 PM

Booth #

- 47-1 31 Talbot-Wendlandt, Haley*; Volz, Samantha; Prestegaard, Karen L.; Gates, Zachary; Ziegler, Susan: **COMPARISON OF SOIL ROOTING DEPTHS AND SOIL HYDRAULIC PROPERTIES IN BOREAL AND HARDWOOD FORESTS WITH SHALLOW GROUNDWATER TABLES**
- 47-2 32 Mischenko, Ivan C.*; Mackowiak, Trevor; Richardson, Justin B.: **QUANTITATIVE ANALYSIS OF GEOLOGIC AND CLIMATIC CONTROLS ON THE REGIONAL SCALE VARIABILITY OF THE PLANT-SOIL SYSTEM IN THE CRITICAL ZONE**
- 47-3 33 Mackowiak, Trevor*; Mischenko, Ivan C.; Richardson, Justin B.: **IDENTIFYING GEOLOGIC AND ANTHROPOGENIC TRACE METAL SOURCES TO THE CRITICAL ZONE ALONG AN URBAN-RURAL TRANSECT IN SOUTHERN CALIFORNIA**
- 47-4 34 Czwakiel, Nicole*; Beck, Catherine C.; Wegter, Bruce; Feibel, Craig S.: **POTENTIAL AND PITFALLS OF STABLE ISOTOPE ANALYSES OF STROMATOLITES IN PALEO-CRITICAL ZONE RECONSTRUCTIONS FOR THE TURKANA BASIN, KENYA**
- 47-5 35 Palmer, Corey A.*; Richardson, Justin B.; Derry, Louis A.: **INVESTIGATING THE ROLE OF SOLUTION CHEMISTRY AND HYDROXIDE PRECIPITATION ON GALLIUM ALUMINUM RATIOS IN THE CRITICAL ZONE**
- 47-6 36 Demir, Huseyin*; Schroeder, Paul A.: **PRINCIPAL COMPONENTS ANALYSIS OF GEOCHEMICAL DATA AND IMPLICATIONS FOR THE PROVENANCE OF CLAY DEPOSITS FROM THE SILE REGION, NORTHWEST TURKEY**
- 47-7 37 Gahwagy, Rana*; Kanamaru, Kinuyo: **ASSESSING ANTHROPOGENIC IMPACT THROUGH TREE RINGS USING MERCURY CONCENTRATION TRENDS IN CENTRAL MASSACHUSETTS**
- 47-8 38 Dow, Samantha*; Ouimet, William B.; Hren, Michael T.: **ANTHROPOGENIC MODIFICATIONS TO UPLAND SOILS FROM HISTORIC LAND USE IN SOUTHERN NEW ENGLAND**

SESSION NO. 48**T4. Geoarchaeology of Dynamic Landscapes (Posters)**

1:30 PM, Hyatt Regency Reston, Grand Ballroom A-D

Authors will be present from 3 to 5 PM

Booth #

- 48-1 39 Powers, Monica C.*; Anastasio, David; Pares, Josep M.; Duval, M.; Kodama, Kenneth P.: **HIGH RESOLUTION CHRONOLOGY USING ROCK MAGNETIC CYCLOSTRATIGRAPHY IN THE BAZA BASIN, SOUTHERN SPAIN**
- 48-2 40 Joyce, Robert T.*; Cornell, Sean R.; Marr, Paul G.: **OPTIMIZING PROCESSING AND INTERPRETATION OF GROUND PENETRATING RADAR (GPR) RADARGRAMS IN THE COMPLEX GEO-ARCHAEOLOGICAL ENVIRONMENTS PRESENT IN SOUTH MOUNTAIN, PENNSYLVANIA**
- 48-3 41 Ouimet, William B.; Dow, Samantha*: **THE HISTORIC LAND USE INITIATIVE (HILI): MAPPING AND INVESTIGATING THE EXTENT AND LEGACY OF 300+ YEARS OF LAND USE CHANGES IN THE NORTHEAST US FOLLOWING EUROPEAN SETTLEMENT**

SESSION NO. 49**T21. Geologic Maps, Digital Geologic Maps, Geophysical Maps, and Derivatives from Geologic and Geophysical Maps (Posters)**

1:30 PM, Hyatt Regency Reston, Grand Ballroom A-D

Authors will be present from 3 to 5 PM

- | Booth # | Author(s) | Title |
|---------|--|--|
| 49-1 | 42 Barineau, Clinton I.*; Tull, James F.; Davis, Benjamin L.; Doughty, P.J.: | AN UPDATED GEOLOGIC MAP OF THE SOUTHERNMOST APPALACHIANS OF ALABAMA AND GEORGIA: A SYNTHESIS OF RECENT ADVANCES IN MAPPING, GEOCHEMISTRY, GEOCHRONOLOGY, AND TECTONIC INTERPRETATION |
| 49-2 | 43 Kath, Randy L.*; Crawford, Thomas J.: | GEOLOGIC MAP OF THE INDIAN MOUNTAIN, BORDEN SPRINGS, OAK LEVEL, CEDARTOWN WEST, BENEDICT, TALLAPOOSA NORTH, FELTON, AND BUCHANON 7.5-MINUTE QUADRANGLES, ALABAMA-GEORGIA |
| 49-3 | 44 Hanson, Kathryn E.*; Kath, Randy L.; Reid, Robert; Mikilitus, Connor: | TWO- AND THREE-DIMENSIONAL STRAIN ANALYSIS OF THE LONG ISLAND CREEK GNEISS WITH PROXIMITY TO THE ZONE OF MOST INTENSE SHEARING IN THE BREVARD ZONE IN WESTERN GEORGIA AND EASTERN ALABAMA |
| 49-4 | 45 Crawford, Thomas J.*; Kath, Randy L.: | PALMETTO GRANITE-BREVARD ZONE-KATY CREEK FAULT RELATIONSHIPS AS ILLUSTRATED ON THE PALMETTO, CAMPBELLTON, RICO, AND WINSTON, 7.5-MINUTE QUADRANGLES: GEORGIA PIEDMONT/BLUE RIDGE |
| 49-5 | 46 Bolding, Robert W.*; Kath, Randy L.; Chowns, Timothy M.: | GEOLOGIC MAP OF THE PLAINVILLE AND SHANNON 7.5 MINUTE QUADRANGLES, FLOYD AND GORDON COUNTIES, NORTHWEST GEORGIA |
| 49-6 | 47 Mattheus, C. Robin*; Ramsey, Kelvin W.; Tomlinson, Jaime L.: | GEOLOGIC MAP OF OFFSHORE DELAWARE: RECONCILING A TIME-TRANSGRESSIVE, AGGREGATE CORE DATASET WITH RECENT HYDROGRAPHIC AND SUBSURFACE SEISMIC REFLECTION DATA |
| 49-7 | 48 Steinen, Randolph*; Charney, Allison Beth: | A NEW BEDROCK MAP AND QUADRANGLE REPORT (#42) FOR THE WALLINGFORD QUADRANGLE, CONNECTICUT |
| 49-8 | 49 Bouali, El Hachemi*; Sweeney, Chuck G.: | ICE-MARGINAL DELTAIC DEPOSITS OF THE CROMWELL DELTA IN CENTRAL CONNECTICUT MAPPED USING GROUND PENETRATING RADAR |
| 49-9 | 50 Grimley, David A.*; Szocinski, Piotr; Dendy, Sarah N.: | SURFICIAL GEOLOGIC MAPPING OF THE BEAVER CREEK QUADRANGLE IN SOUTHERN ILLINOIS: HIGHLIGHTING WELL-PRESERVED ILLINOIS EPISODE (MIS 6) ICE-CONTACT LANDFORMS AND DEPOSITS |
| 49-10 | 51 Massey, Matthew A.*; Dortch, Jason M.; Zhu, Yichuan: | EXPLOITATION OF DIGITAL ELEVATION MODELS TO CORRELATE REGIONAL TERRACE GENERATIONS FOR ACCURATE GEOLOGIC MAPPING: AN EXAMPLE FROM THE LICKING RIVER, KENTUCKY |
| 49-11 | 52 Rice, Aaron K.*; Stoddard, Edward F.; Blake, David E.; Bradley, Philip J.: | COMPILED DATA FOR THE HENDERSON AND WESTERN ROANOKE RAPIDS 1:100K SHEETS: UTILIZING GIS TO UNRAVEL STRUCTURAL GEOLOGY PROBLEMS |
| 49-12 | 53 Stoddard, Edward F.*; Blake, David E.: | GEOLOGY OF THE VICKSBORO QUADRANGLE, NC: IMPLICATIONS FOR EASTERN PIEDMONT PLUTONS, FAULT ZONES, AND TERRANES |
| 49-13 | 54 Cattanach, Bart L.*; Bozdog, G. Nicholas; Isard, Sierra J.: | A NEW 1:24,000-SCALE BEDROCK GEOLOGIC MAP OF THE NORTHERN HALF OF THE MOFFITT HILL 7.5-MINUTE QUADRANGLE, MCDOWELL, RUTHERFORD, AND BUNCOMBE COUNTIES, NORTH CAROLINA |
| 49-14 | 55 Bozdog, G. Nicholas*; Isard, Sierra J.; Cattanach, Bart L.: | A NEW 1:24,000-SCALE BEDROCK GEOLOGIC MAP OF THE OLD FORT 7.5-MINUTE QUADRANGLE, MCDOWELL AND YANCEY COUNTIES, NORTH CAROLINA |
| 49-15 | 56 Thornton, Erik*; Farrell, Kathleen M.; Lynn, Ashley S.: | NEW CROSS SECTIONS DETAILING THE SUBSURFACE STRATIGRAPHY OF EARLY, MIDDLE, AND LATE PLEISTOCENE TERRACE DEPOSITS ON THE NORTH CAROLINA COASTAL PLAIN, FALKLAND 7.5-MINUTE QUADRANGLE |
| 49-16 | 57 Scheip, Corey M.*; Douglas, Thomas J.; Hill, Jesse S.; Korte, David M.; Wooten, Richard M.: | HOW THE NORTH CAROLINA GEOLOGICAL SURVEY MAPS LANDSLIDES IN 2020: LIDAR, DRONES, SATELLITES, AND BOOTS ON THE GROUND |
| 49-17 | 58 Wooten, Richard M.*; Cattanach, Bart L.; Bozdog, G. Nicholas; Isard, Sierra J.: | THE SEPTEMBER 18, 2018 SUNNY DAY LANDSLIDE IN WARRENSVILLE, ASHE COUNTY, NORTH CAROLINA: DISASTER NARROWLY AVERTED FOLLOWING A SERIES OF UNFORTUNATE EVENTS |
| 49-18 | 59 Hill, Jesse S.*; Douglas, Thomas J.; Korte, David M.; Scheip, Corey M.; Wooten, Richard M.; Palmer, Joshua M.: | DEBRIS FLOWS TRIGGERED BY AUGUST 24, 2019 STORM IN THE NANTHALA GORGE, WESTERN NORTH CAROLINA; DID THE UNDERLYING BEDROCK AND THE 2016 WILDFIRES INCREASE LANDSLIDE SUSCEPTIBILITY? |
| 49-19 | 60 Taylor, Kenneth B.*: | EXAMPLE OF A PAIR OF USGS PUBLICATIONS RESULTING IN NEW MINERAL EXPLORATION IN NORTH CAROLINA FOR POTENTIAL REES |
| 49-20 | 61 Levine, Norman S.*; Knapp, Landon C.; Watson, Sarah; Conrad, Casey: | THE USE OF A FLOOD DISRUPTION SCALE TO COMMUNICATE HIGH RESOLUTION FLOOD HAZARD USING PARCEL SCALE TIDAL AND RAINFALL RUNOFF MODELS FOR PLANNING IN CHARLESTON, SOUTH CAROLINA |
| 49-21 | 62 Moulton, Dedrick E.*; Jaume, Steven C.; Levine, Norman S.: | USING HISTORICAL MAPS AND DEMS TO REMAP EARTHQUAKE HAZARDS ON THE CHARLESTON PENINSULA |
| 49-22 | 63 Carter, Mark W.*; Powell, Lorne; Johnson, Jonathan W.; Spears, David B.; Nolan, Jack T.; Lynn, Ashley S.: | GEOTRAVERSE ALONG THE NOTTOWAY RIVER IN SOUTHEASTERN VIRGINIA: NEW COOPERATIVE GEOLOGIC MAPPING ON THE WEST HALF OF THE EMPORIA 30X60-MINUTE QUADRANGLE |
| 49-23 | 64 Behr, Rose-Anna*; Crowell, Bryan E.: | SUBTERRANEAN, SURFACE, AND LIDAR-DERIVED BEDDING ORIENTATIONS REFINE THE STRUCTURAL FEATURES IN THE BURNSVILLE COVE, BATH AND HIGHLAND COUNTIES, VIRGINIA |
| 49-24 | 65 Burton, William C.*; Harrison, Richard W.; Malenda, Helen; Pazzaglia, Frank J.; Crider, Ernest: | GEOLOGIC MAP OF THE FERNCLIFF AND LOUISA 7.5' QUADRANGLES, CENTRAL VIRGINIA |
| 49-25 | 66 Walter, Ryan T.*; Laughlin, Evan; Hinshaw, Emily R.; Belding, Samuel E.; Sasina, Amanda M.; Bailey, Christopher M.: | DECIPHERING THE GEOLOGY AT A PRESUMED TERRANE TRIPLE POINT: GLADSTONE 7.5' QUADRANGLE, CENTRAL VIRGINIA |
| 49-26 | 67 Ramirez, Joshua*; Miller, Taylor; Meyer, Michael: | IN SEARCH OF A NEW SITE: INTEGRATING GIS AND GEOLOGIC FORMATION DATA TO TEST NOVEL METHODS IN OUTCROP DISCOVERY |
| 49-27 | 68 Sewell, Katlyn*; Gregg, Tracy K.P.: | CONSTRUCTION AND DECONSTRUCTION OF A SEAMOUNT ON THE GALAPAGOS SPREADING CENTER |
| 49-28 | 69 Van Hazinga, Cora*; Muirhead, James D.; Mana, Sara: | INVESTIGATING THE RELATIONSHIP BETWEEN LINEAR ARRAYS OF EXPLOSIVE VOLCANIC FEATURES AND THE REGIONAL STRESS FIELD OF MT MARSABIT, KENYA |
| 49-29 | 70 Williams, Bailey E.*; Diedesch, Timothy F.; Balgord, Elizabeth; All, John: | GEOLOGIC MAPPING OF SULFIDE-BEARING BEDROCK EXPOSED BY DEGLACIATION IN THE CORDILLERA BLANCA, PERU |

SESSION NO. 50**T29. Chemostratigraphic, Biotic, and Sedimentologic Changes through Earth History (Posters)**

1:30 PM, Hyatt Regency Reston, Lake Anne

Authors will be present from 3 to 5 PM

- | | Booth # |
|-------|---|
| 50-1 | 1 Webb, L.C.*; Nelson, L.L.; Millikin, A.E.G.; Hodgkin, E.B.; Rooney, A.D.; Smith, E.F.: GEOCHEMICAL CONSTRAINTS ON THE PROVENANCE OF EDIACARAN-CAMBRIAN SEDIMENTARY ROCKS FROM THE SOUTHWESTERN MARGIN OF LAURENTIA |
| 50-2 | 2 Allman, Lindsay*; Young, Seth A.; Frýda, Jiří; Owens, Jeremy D.: GEOCHEMICAL EVIDENCE OF ENVIRONMENTAL CHANGE SURROUNDING THE LATE SILURIAN LAU/KOZŁOWSKII EXTINCTION EVENT FROM SHALE RECORDS OF PERUNICA (CZECH REPUBLIC) |
| 50-3 | 3 Zambito, James J.*; Holicky, Madeline G.; Fries, Morgan A.; Farbarik, Olivia B.: TESTING THE IMPACT OF FOREST EVOLUTION ON THE ORGANIC MATTER COMPOSITION OF APPALACHIAN BASIN MARINE BLACK SHALE |
| 50-4 | 4 Hibner, Brianna M.*; Edwards, Cole T.: DOES FOOLS GOLD TELLS THE TRUTH ABOUT ANOXIA? RETHINKING THE CAUSE OF THE LATE DEVONIAN MASS EXTINCTION USING SULFUR ISOTOPES IN CARBONATES |
| 50-5 | 5 Wright, Patrick A.*; Edwards, Cole T.; Gill, Benjamin C.: SEARCHING FOR EVIDENCE OF LATE DEVONIAN LOCALIZED ANOXIA IN THE GREAT BASIN REGION (SOUTHERN NV, USA): RETHINKING CAUSES OF THE LATE DEVONIAN MASS EXTINCTION |
| 50-6 | 6 McComb, Samantha E.*; Quinton, Page C.; Rygel, Michael C.: MADISON GROUP CARBONATES: UNDERSTANDING CHANGES IN CARBON ISOTOPES, DEPOSITIONAL ENVIRONMENTS, AND SEA LEVEL |
| 50-7 | 7 Hogan, Hannah*; Schoepfer, Shane D.; Xiang, Lei: PROVENANCE OF LATE PERMIAN VOLCANOGENIC SEDIMENTS AT PENGLAITAN, SOUTH CHINA |
| 50-8 | 8 Comins, Matt*; Schoepfer, Shane D.; Xiang, Lei: THE EARLY-TRIASSIC NITROGEN CYCLE AND MARINE ECOSYSTEM RECOVERY AS SEEN IN CHAOHU, ANHUI PROVINCE, SOUTH CHINA |
| 50-9 | 9 Miranda, Brianna C.*; Marroquin, Selva M.; Gill, Benjamin C.: EVALUATING CARBON ISOTOPE AND REDOX RECORDS OF POLAR ENVIRONMENTAL CHANGE DURING THE EARLY JURASSIC |
| 50-10 | 10 Persinger, Dylan*; Gilleaudeau, Geoffrey J.; Thibault, Nicolas; Moreau, Julien; Kaufman, Alan J.: STABLE ISOTOPES RECORD PALEOCLIMATIC CHANGES ACROSS THE LATEST MAASTRICHTIAN CHALK GROUP, NORTHERN JUTLAND, DENMARK |
| 50-11 | 11 Wiest, Logan A.*; Lukens, William E.; Driese, Steven G.; Peppe, Daniel J.; Forman, Steven L.: LANDSCAPE EVOLUTION ACROSS THE CRETACEOUS-PALEOGENE BOUNDARY IN SOUTHWESTERN NORTH DAKOTA |
| 50-12 | 12 Sorrem, Natalie*; Meier, Clara L.; Bowen, Gabriel J.; Foreman, Brady Z.; Wing, Scott L.; Them, Theodore R.: HIGH-RESOLUTION SEDIMENTARY [HG] RECORDS ACROSS THE PETM FROM A TERRESTRIAL LATITUDINAL TRANSECT IN NORTH AMERICA |
| 50-13 | 13 Lukens, William E.*; Vornlocher, Jamie R.; Schubert, Brian A.; Quan, Cheng: DISSECTING THE EAST ASIAN MONSOON: SEASONAL RAINFALL PATTERNS FROM LATE OLIGOCENE FOSSIL WOOD |
| 50-14 | 14 Seidenstein, Julia*; Leckie, R. Mark: PLIO-PLEISTOCENE PALEOCEANOGRAPHY OF THE ROSS SEA SHELF BREAK, ANTARCTICA BASED ON FORAMINIFERA: IODP SITE U1523 |
| 50-15 | 15 Justiniano, Antonio R.*; Cui, Ying: STABLE CARBON AND NITROGEN ISOTOPES OF HARDWOOD FOREST AND THE PINE BARRENS IN NEW JERSEY |
| 50-16 | 16 Gfatter, Christian*: EXPERIMENTAL DESIGN TO CULTURE ORGANISMS FOR SUBSEQUENT TRACE ELEMENT ANALYSES |

SUNDAY, 22 MARCH 2020**MORNING
ORAL TECHNICAL SESSIONS****SESSION NO. 51****D5. Geomorphology & Quaternary Geology**

8:00 AM, Hyatt Regency Reston, Lake Thoreau

Jesse S. Hill, Presiding

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|------|---------|---|
| 51-1 | 8:00 AM | Hannides, Angelos K.*: HURRICANE IMPACTS ON A SWASH-ZONE SAND COLUMN IN LONG BAY, SOUTH CAROLINA |
| 51-2 | 8:20 AM | Hill, Christopher L.*; Kabaciński, Jacek; Czekaj-Zastawny, Agnieszka: LANDSCAPE DYNAMICS IN THE EASTERN SAHARA: SEDIMENTARY GEOLOGY, STRATIGRAPHY, AND GEOMORPHOLOGY IN THE GEBEL RAMLAH REGION, SOUTHWEST EGYPT |
| 51-3 | 8:40 AM | Hill, Jesse S.*; Stewart, Kevin G.; Scheip, Corey M.; Wooten, Richard M.: BLOCKY BEDROCK BREAKDOWN ALONG POST-OROGENIC FRACTURES SETS: A CASE STUDY FROM WESTERN NORTH CAROLINA, SOUTHERN APPALACHIANS |
| 51-4 | 9:00 AM | Johnson, Bradley G.*; Spell, Rosalind L.; Rieden, Hannah: DAMS, FARMERS, AND LEGACY SEDIMENTS: THE VERY COMPLICATED INCISION HISTORY OF STREAMS IN THE NORTH CAROLINA PIEDMONT |
| 51-5 | 9:20 AM | Wright, Stephen F.*: CHANGING SUBGLACIAL/ICE-MARGINAL DRAINAGE SYSTEMS DURING LAURENTIDE ICE SHEET RETREAT ACROSS NORTHERN VERMONT |
| 51-6 | 9:40 AM | Moss, Cheryl Johnson*: MAPPED EXTENT OF GLACIAL LAKE SEDIMENTS OVER INWOOD, NEW YORK CITY, NY |

SESSION NO. 52**T10. Provenance of the Eastern North American Margin: From Triassic Rifting to Modern Sedimentation**

8:00 AM, Hyatt Regency Reston, Lake Fairfax

Zachary Foster-Baril, Presiding

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| | 8:00 AM | INTRODUCTORY REMARKS |
| 52-1 | 8:05 AM | Wintsch, R.P.*; Kunk, Michael J.; Growdon, Martha; Matthews, Jessica A.; McAleer, Ryan J.; Walker, Jamie; Wathen, Bryan; Aleinikoff, John N.: HOW THE ALLEGHANIAN OROGENY REVEALS INSIGHTS ON THE ORIGIN OF THE EARLY MESOZOIC HARTFORD BASIN |
| 52-2 | 8:25 AM | Baughman, Jaclyn S.*; Fame, Michelle; Basler, Luke; Haproff, Peter J.: SPATIALLY VARIABLE BURIAL AND EXHUMATION HISTORY OF THE CENTRAL APPALACHIAN MOUNTAINS FROM ZIRCON (U-TH)/HE THERMOCHRONOLOGY |
| 52-3 | 8:45 AM | Bailey, Christopher M.*; Foster-Baril, Zachary; Wilk, Kinsey; Stockli, Daniel F.: DETRITAL ZIRCON DOUBLE DATING FROM THE SCOTTSVILLE BASIN, VIRGINIA: IMPLICATIONS FOR MESOZOIC TECTONICS ON THE ATLANTIC RIFT SHOULDER |
| 52-4 | 9:05 AM | Foster-Baril, Zachary*; Stockli, Daniel F.; Bailey, Christopher M.: PROVENANCE OF THE TRIASSIC TO JURASSIC NEWARK SUPERGROUP DURING PROGRESSIVE RIFTING ALONG THE EASTERN NORTH AMERICAN MARGIN, USA |
| 52-5 | 9:25 AM | Olsen, Paul E.*; Chang, Clara; Kinney, Sean T.; Fang, Yanan; Sha, Jingeng: SIMPLE INTERPRETATION OF LACUSTRINE TRIASSIC-JURASSIC KONSERVAT LAGERSATTEN OF THE RIFT BASINS OF EASTERN NORTH AMERICA WITH COMMENTS ON THE YANLIAO AND JEHL BIOTAS OF CHINA |

9:45 AM **BREAK**

- 52-6 10:00 AM Hinshaw, Emily R.*; Bailey, Christopher M.; Foster-Baril, Zachary; Stockli, Daniel F.: **STRUCTURE, PETROLOGY, AND GEOCHRONOLOGY OF MESOZOIC DIABASE DIKES IN CENTRAL VIRGINIA**
- 52-7 10:20 AM Craddock, William*; Hackley, Paul C.; O'Sullivan, Paul: **CRETACEOUS EROSION OF THE SOUTHERN APPALACHIANS FROM IN-SITU THERMOCHRONOMETERS, SEDIMENT PROVENANCE, AND SEDIMENT ACCUMULATION RATES IN THE EASTERN GULF OF MEXICO BASIN**
- 52-8 10:40 AM Parent, Andrew*; Romans, Brian W.; Mason, Cody C.; Foster-Baril, Zachary; Covault, Jacob A.; Stockli, Daniel F.: **EVOLUTION OF SEDIMENT DISPERSAL SYSTEMS DURING THE EARLY DRIFT PHASE OF U.S. ATLANTIC MARGIN DEVELOPMENT: INSIGHTS FROM DETRITAL ZIRCON U-PB GEOCHRONOLOGY**
- 52-9 11:00 AM Ganis, G. Robert*; Cicimurri, David J.; Willoughby, Ralph H.; Hageman, Steven J.; Rolland, Hannah: **AN EOCENE (BARTONIAN) REMNANT ON THE CAPE FEAR ARCH IN THE UPPER COASTAL PLAIN OF NORTH CAROLINA**
- 52-10 11:20 AM Odom, William E.*; Granger, Darryl E.; Doctor, Daniel H.; McAleer, Ryan J.: **LONG-TERM DENUDATION RATES IN THE VIRGINIA VALLEY AND RIDGE ESTIMATED FROM ⁴⁰AR/³⁹AR DATING OF SUPERGENE MANGANESE OXIDE ORES**

SESSION NO. 53

T12. Shale Production in the Eastern U.S. — E³: Environmental, Economic & Energy System Impacts

8:00 AM, Hyatt Regency Reston, Regency Ballroom B

Timothy Carr, Shikha Sharma and J. Alexandra Hakala, Presiding

8:00 AM **INTRODUCTORY REMARKS**

- 53-1 8:05 AM Carr, Timothy*; Grushecky, Shawn: **THE SURFACE IMPACT OF ELECTRIC ENERGY DEVELOPMENT IN THE UNITED STATES OF RENEWABLES AND NATURAL GAS**
- 53-2 8:25 AM Schneider, Jonathan*; Graney, Joseph: **GEOCHEMICAL IMPLICATIONS OF DRILL CUTTINGS ON LANDFILL LEACHATE FROM UNCONVENTIONAL ENERGY DEVELOPMENT IN THE APPALACHIAN BASIN**
- 53-3 8:45 AM Agrawal, Vikas*; Sharma, Shikha: **CHARACTERIZING MOLECULAR STRUCTURE OF KEROGEN AND ITS HETEROGENEITIES IN MARCELLUS SHALE: IMPACTS ON HYDROCARBON GENERATION AND PRODUCTION**
- 53-4 9:05 AM Tamulonis, Kathryn; Reese, Sam; Tucci, Kurtis*; Carter, Kristin: **DIAGENESIS AND HYDROTHERMAL ALTERATION IN MIDDLE AND UPPER DEVONIAN SHALES OF THE ROME TROUGH, APPALACHIAN BASIN, USA**
- 9:25 AM **BREAK**
- 53-5 9:40 AM Yesenchak, Rachel E.*; Sharma, Shikha: **IDENTIFYING WATER QUALITY IMPACTS RELATED TO SHALE GAS DRILLING IN NORTHERN WEST VIRGINIA**
- 53-6 10:00 AM Ferguson, Brennan*; Agrawal, Vikas; Sharma, Shikha; Hakala, J. Alexandra; Stuckman, Mengling: **THE ROLE OF CARBONATE MINERALS IN HYDRAULICALLY FRACTURED WELL SCALING REACTIONS**
- 53-7 10:20 AM Paronish, Thomas*; Agrawal, Vikas; Crandall, Dustin; Moore, Johnathan; Carr, Timothy: **CHEMOSTRATIGRAPHY AND CT-IMAGE AIDED LITHOFACIES ANALYSIS OF A MIDDLE DEVONIAN MARCELLUS SHALE WELL IN NORTHERN WEST VIRGINIA, USA**

SESSION NO. 54

T19. Eastern Activities of the USGS Earth Mapping Resources Initiative

8:00 AM, Hyatt Regency Reston, Lake Audubon

Nora K. Foley, Arthur Merschat, William L. Lassetter, Anjana K. Shah and Gregory J. Walsh, Presiding

8:00 AM **INTRODUCTORY REMARKS**

- 54-1 8:05 AM Day, Warren*: **THE USGS EARTH MAPPING RESOURCES INITIATIVE (EARTH MRI): A PARTNERSHIP WITH STATE GEOLOGICAL SURVEYS TO BETTER DEFINE THE NATION'S CRITICAL MINERAL RESOURCES**
- 54-2 8:25 AM Foley, Nora K.*; Ayuso, Robert A.: **RARE EARTH ELEMENT DISTRIBUTION AND MOBILITY IN REGOLITH DEPOSITS FORMED ON ALTERED A-TYPE GRANITES OF THE SOUTHEASTERN UNITED STATES**
- 54-3 8:45 AM Brown, Sarah R.*; Moore, Jessica Pierson; Daft, Gary; Dinterman, Philip A.: **POTENTIAL FOR A CRITICAL MINERAL RESOURCE IN THE UNDERCLAYS OF WEST VIRGINIA**
- 54-4 9:05 AM Andrews, William*; Lukoczki, Georgina: **EARTH MRI ACTIVITIES AT THE KENTUCKY GEOLOGICAL SURVEY**
- 54-5 9:25 AM Russ, David P.*: **DEVELOPMENT OF AND COLLABORATION WITH THE PENN STATE CENTER FOR CRITICAL MINERALS**
- 9:45 AM **BREAK**
- 54-6 10:00 AM Morrow, Robert H.*; Doar, William R.; Grammatikopoulou, Tassos; Harris, M. Scott; Howard, C. Scott; Shah, Anjana K.: **EARTH MRI IN SOUTH CAROLINA, RESEARCH INTO CRITICAL MINERALS ONSHORE AND OFFSHORE**
- 54-7 10:20 AM Farrell, Kathleen M.*; Doar, William R.; Lassetter, William L.; Means, Guy H.; Occhi, Marcie E.; Morrow, Robert H.; Taylor, Kenneth B.; Chapman, James S.: **USING GEOMORPHOLOGY, LIDAR AND GEOLOGIC MAPPING TO DEVELOP CONSISTENT PROTOCOLS FOR DEFINING FOCUS AREAS INCLUDED IN THE PLACER MINERAL SYSTEM ON THE ATLANTIC COASTAL PLAIN AND ADJACENT ENVIRONS OF THE SOUTHEASTERN USA (EAST REGION)**
- 54-8 10:40 AM Chapman, James S.*: **RARE-EARTH ELEMENTS MINERALS PLACER DEPOSITION MODELING FROM SATELLITE MULTISPECTRAL REMOTE SENSING IMAGING IN A SECTION OF NORTH CAROLINA'S NORTHERN FALL ZONE**
- 54-9 11:00 AM Shah, Anjana K.*; Drenth, Benjamin J.; McCafferty, Anne E.; Ponce, David A.: **AIRBORNE GEOPHYSICAL METHODS FOR EVALUATION OF CRITICAL MINERAL DEPOSIT POTENTIAL**
- 54-10 11:20 AM Lassetter, William L.*; Coiner, Lorrie V.; Barth, Aaron M.; Occhi, Marcie E.; Smith, Michael S.: **CRITICAL MINERAL COMMODITY OCCURRENCES IN VIRGINIA – AN ASSESSMENT OF PROSPECTIVE GEOLOGIC AND GEOCHEMICAL FACTORS**

SESSION NO. 55

T26. Deciphering Active Tectonics and Seismic Hazard in Eastern North America

8:00 AM, Hyatt Regency Reston, Regency Ballroom A

Lisa S. Schleicher, J. Wright Horton Jr., Chris Cramer and Christine A. Powell, Presiding

- 55-1 8:00 AM Herman, Gregory*: **NEOTECTONICS OF THE NEW YORK RECESS**
- 55-2 8:20 AM Ebel, John E.*; Chapman, Martin C.: **EASTERN NORTH AMERICA PASSIVE MARGIN EARTHQUAKES AND MESOZOIC RIFT STRUCTURES**
- 55-3 8:40 AM Shah, Anjana K.*; Pratt, Thomas L.; Horton, J. Wright: **NEW AIRBORNE MAGNETIC DATA IMAGE STRUCTURAL FEATURES IN THE CHARLESTON SEISMIC ZONE**

- 55-4 9:00 AM Burton, William C.*; Harrison, Richard W.; Shah, Anjana K.; Kunk, Michael J.; McAleer, Ryan J.; Carter, Mark W.: **BEDROCK GEOLOGIC FRAMEWORK OF THE 2011 M5.8 MINERAL, VA EARTHQUAKE**
- 55-5 9:20 AM Chapman, Martin*; Beale, Jacob N.; Guo, Zhen; Wu, Qimin: **RESULTS FROM THE 2017-2018 SEISMIC NETWORK MONITORING EFFORT IN THE CENTRAL VIRGINIA SEISMIC ZONE**
- 55-6 9:40 AM Cramer, Chris*; Bhattarai, Roshan R.: **SEISMIC HAZARD MAPS WITH THE EFFECT OF LOCAL GEOLOGY FOR WASHINGTON, DC AND FAIRFAX COUNTY, VA**
- 10:00 AM **BREAK**
- 55-7 10:15 AM Gonzales, Joshua M.*; Pazzaglia, Frank J.; Anastasio, David J.; Germanoski, Dru; Gallen, Sean F.; Corbett, Lee B.; Bierman, Paul R.; Caffee, Marc W.: **CRUSTAL STRAINS IN THE PENNSYLVANIA PIEDMONT REVEALED BY LONG PROFILES AND COSMOGENIC EROSION RATES AND THEIR RELATION TO ACTIVE SEISMICITY**
- 55-8 10:35 AM Reichenbacher, Renee*; Van Arsdale, Roy B.; Cramer, Chris: **GEOLOGIC MAPPING OF DYER COUNTY, TENNESSEE WITHIN THE NEW MADRID SEISMIC ZONE**
- 55-9 10:55 AM Carpenter, N. Seth*; Wang, Zhenming; Woolery, Edward W.; Hickman, John B.: **DOES THE EASTERN KENTUCKY ROME TROUGH INTERRUPT OR BOUND THE EASTERN TENNESSEE SEISMIC ZONE?**
- 55-10 11:15 AM Jaume, Steven C.*; Cramer, Chris; Moulton, Dedrick E.; Levine, Norman S.: **EARTHQUAKE HAZARDS ON THE CHARLESTON PENINSULA, SOUTH CAROLINA BASED UPON "HISTORY-INFORMED" GEOLOGIC MAPPING**
- 55-11 11:35 AM Marple, Ronald*; Hurd, James: **INTERPRETATION OF LINEAMENTS AND FAULTS NEAR SUMMERVILLE, SOUTH CAROLINA, USING LIDAR DATA AND PREVIOUSLY ACQUIRED SEISMIC-REFLECTION PROFILES: IMPLICATIONS FOR THE CAUSE OF THE 1886 CHARLESTON, SOUTH CAROLINA, EARTHQUAKE**
- 56-6 6 Prince, Karlee K.*; Rodysill, Jessica R.; Donnelly, Jeffrey P.: **INVESTIGATING HOLOCENE HYDROCLIMATE USING SEDIMENT CORES FROM FLORIDA PANHANDLE SINKHOLE LAKES**
- 56-7 7 Driscoll, Kilauren W.*; Stone, Jeffery R.: **PRELIMINARY LATE HOLOCENE DIATOM PALEOECOLOGY OF LAKE JACKSON, FLORIDA/ALABAMA**
- 56-8 8 Roccio, Eleanor A.*; Hubeny, J. Bradford; Knudstrup, Renee: **ANALYSIS OF LATE HOLOCENE PALEOLIMNOLOGIC RECORDS FROM THE DEAD RIVER WATERSHED, FRANKLIN COUNTY, MAINE**
- 56-9 9 Fortune, Angus*; Delpais, Michael; Finkenbinder, Matthew S.; Monteath, Alistair; Adamson, Kathryn; Lane, Timothy: **A LATE-QUATERNARY RECORD OF TERRESTRIAL AND AQUATIC ECOSYSTEM VARIABILITY DEVELOPED USING MULTI-PROXY ANALYSIS OF NORTHEAST PENNSYLVANIA LAKE SEDIMENTS**
- 56-10 10 Cox, Tyler*; Wysocki, Ryan; Finkenbinder, Matthew S.; Steinman, Byron A.: **A HOLOCENE RECORD OF CLIMATE CHANGE FROM SOUTHERN ONTARIO DEVELOPED USING GEOCHEMICAL ANALYSIS OF MARL LAKE SEDIMENTS**
- 56-11 11 Parduski, Michael*; Sukowaski, Emma; Finkenbinder, Matthew S.; Steinman, Byron A.; Wagner, Zachary C.: **DEVELOPMENT OF LAKE SEDIMENT RECORDS OF HOLOCENE PALEOCLIMATE VARIABILITY FROM THE INTERLAKE REGION OF MANITOBA**
- 56-12 12 de Wet, Carol B.*; Driscoll, Elizabeth; Godfrey, Linda; de Wet, Andrew P.: **QUATERNARY FRESHWATER TUFAS FACIES, CALAMA BASIN, ATACAMA DESERT, CHILE**
- 56-13 13 de Wet, Andrew*; Godfrey, Linda; Cochran, Delaney; de Wet, Carol; Driscoll, Elizabeth: **DISTRIBUTION AND 3D MODELING OF QUATERNARY FRESHWATER TUFAS FACIES, CALAMA BASIN, ATACAMA DESERT, CHILE**
- 56-14 14 Nash, Bailey C.*; Jones, Miriam C.; Berkelhammer, Max; Anderson, Lesleigh: **LATE HOLOCENE HYDROCLIMATE RECONSTRUCTION FROM A SOUTH-CENTRAL ALASKA PEATLAND**
- 56-15 15 Lindberg, Kurt*; Daniels, William; Castaneda, Isla S.; Salacup, Jeffrey M.; Brigham-Grette, Julie: **TEMPERATURE VARIABILITY FROM ARCTIC LAKE EL'GYGTGYN (FAR EAST RUSSIA) DURING THE MID-PLEISTOCENE TRANSITION BASED ON BRGDGTS**
- 56-16 16 O'Reilly, Conner*; Beck, Catherine C.; van der Lubbe, Jeroen H.; Feibel, Craig S.; Wegter, Bruce; Cohen, Andrew S.: **QUANTIFYING DEPOSITIONAL ENVIRONMENTS USING ULTRA-HIGH-RESOLUTION GRAIN SIZE ANALYSES**

MORNING POSTER TECHNICAL SESSIONS

SESSION NO. 56

T3. Paleolimnological Records of Climate and Environmental Change (Posters)

8:00 AM, Hyatt Regency Reston, Lake Anne

Authors will be present from 10 AM to 12 PM

Booth #

- 56-1 1 Tobin, Thomas S.*; Murray, Bridget; Wilson, Jeffrey A.; Wilson, Gregory P.; Mohabey, Dhananjay; Samant, Bandana: **GEOCHEMICAL AND SEDIMENTOLOGICAL ANALYSIS OF LATE CRETACEOUS FOSSIL-BEARING LOCALITIES ASSOCIATED WITH THE DECCAN TRAPS (INDIA)**
- 56-2 2 Chang, Clara*; Olsen, Paul E.: **STRANGE ATTRACTORS IN LAGERSTATTEN- BUGS ON A STICK AND RAFTING FISH**
- 56-3 3 Helmick, Meredith E.*; Kuehn, Stephen C.: **CRYPTOTEPHRA DATING OF A PALEOENVIRONMENTAL RECORD FROM APPLEMAN LAKE, INDIANA, USA**
- 56-4 4 Colip, Grant D.*; Swezey, Christopher S.; Rodysill, Jessica R.; Toomey, Michael; Hayslett, Michael S.: **HOLOCENE SEDIMENTS AT BROWNS POND, A VERNAL POOL LOCATED WITHIN A KARST SINKHOLE IN THE SILURIAN TONOLOWAY LIMESTONE, BATH COUNTY, VIRGINIA**
- 56-5 5 Berquist, Peter J.*; Carlin, Meara; Price, Zachary; Balascio, Nicholas L.; Arthur, Robert; Kaste, James M.: **SEDIMENTARY HISTORY OF QUEENS LAKE, WILLIAMSBURG, VIRGINIA: CONNECTING LACUSTRINE AND ESTUARINE SYSTEMS WITHIN THE VIRGINIA COASTAL PLAIN**

SESSION NO. 57

T5. Drill, Drill, Drill! A Tribute to USGS Drillers Eugene "Big Gene" Cobbs, Eugene "Little Gene" Cobbs, III, and Jeff Grey, and Their Contributions to Geologic Research East of the Mississippi River (Posters)

8:00 AM, Hyatt Regency Reston, Grand Ballroom A-D

Authors will be present from 10 AM to 12 PM

Booth #

- 57-1 1 Foley, Kevin*: **BENTHIC FORAMINIFER ANALYSIS OF PLOCIENE SEA LEVEL, SOUTHEASTERN VIRGINIA**
- 57-2 2 Knight, Marisa D.*; Yin, Runsheng; Meier, Clara L.; Browning, James V.; Them, Theodore R.: **SEDIMENTARY MERCURY CONCENTRATIONS AND ISOTOPES ACROSS THE END-CRETACEOUS MASS EXTINCTION EVENT FROM NEW JERSEY**
- 57-3 3 Lowery, Christopher*; Self-Trail, Jean M.; Barrie, Craig; Gilbreath, Kate; Seefelt, Ellen L.; Yagodzinski, Lara: **NORTH CAROLINA SHELF SHOWS EVIDENCE OF INCREASED TERRIGENOUS FLUX DURING THE CENOMANIAN-TURONIAN OCEANIC ANOXIC EVENT 2**

SESSION NO. 58**T13. Developing and Using Open Educational Resources in the Geosciences (Posters) (National Association of Geoscience Teachers; Virtual Library of Virginia)**

8:00 AM, Hyatt Regency Reston, Grand Ballroom A-D

Authors will be present from 10 AM to 12 PM

Booth #

- 58-1 4 Davock, Caroline*; Herzfeld, Julia; Glumac, Bosiljka; Dodd, Graeham: **DEVELOPMENT OF AN OPEN EDUCATIONAL RESOURCE AIMED AT INCREASING CLIMATE LITERACY BEYOND STEM DISCIPLINES**
- 58-2 5 O'Neal, Claire*: **USING ONLINE RESOURCES TO PROMOTE ACTIVE LEARNING IN LARGE-LECTURE INTRODUCTORY GEOSCIENCE CLASSROOMS: A SET OF READY-TO-GO IN-CLASS EXERCISES FOR GUIDED EXPLORATION OF TOPICS IN GEOHAZARDS AND EARTH HISTORY**
- 58-3 6 Bentley, Callan; Jaye, Shelley A.; Kohrs, Russell H.*; Layou, Karen M.: **HISTORICAL GEOLOGY FOR THE 21ST CENTURY: A FREE, OPEN-ACCESS TEXT"BOOK"**
- 58-4 7 Kansal, Ritu*; Mengason, Michael J.; Buecheler, James; Poe, Tashi; Pourtalebi, Bahar; Rohrbach, Robin; Wilcox, Kelsey; Johnson, Elizabeth A.; Liu, Juhong Christie; Jaye, Shelley A.: **DEVELOPING OER VIDEOS ON LAB METHODS TO ENGAGE STEM MAJORS AND PROMOTE UNDERGRADUATE RESEARCH IN A 2-YEAR COMMUNITY COLLEGE**
- 58-5 8 Johnson, Elizabeth A.*; Liu, Juhong Christie: **CREATING INTERACTIVE FEATURES FOR OPEN EDUCATIONAL RESOURCES IN THE GEOSCIENCES: THE END OF ADOBE FLASH AND THE RISE OF H5P**

SESSION NO. 59**T18. Undergraduate Research III (Posters) (Council on Undergraduate Research Geosciences Division)**

8:00 AM, Hyatt Regency Reston, Grand Ballroom A-D

Authors will be present from 10 AM to 12 PM

Booth #

- 59-1 9 Engrav, Samantha K.*; Voegelé, Kristyn K.; Ullmann, Paul Victor; Nellerhoe, Ron: **USING COMPUTED TOMOGRAPHY TO ANALYZE THE BRAINCASE OF A NEW *ALLOSAUROS* SPECIMEN FROM THE JURASSIC MORRISON FORMATION OF WYOMING**
- 59-2 10 Lonsdorf, Tara*; Voegelé, Kristyn K.; Christman, Zachary: **ANALYZING THE THREE-DIMENSIONAL DISTRIBUTION OF A SHALLOW-MARINE BONEBED IN THE LOWER HORNERSTOWN FORMATION AT EDELMAN FOSSIL PARK, NJ**
- 59-3 11 Johnson, Lila M.*; Kelley, Neil P.; Gibson, Brandt M.: **A NEW RECORD OF A LATE TRIASSIC ICHTHYOSAUR WITH JURASSIC-LIKE DENTITION REVEALED BY MICRO-CT SCANNING**
- 59-4 12 Lerner, Joel R.*; Hartung, Leah K.; Hage, Melissa; Nkomo, Simbarashe: **INVESTIGATING THE EFFECTS OF VARYING PH LEVELS ON THE PHYTOREMEDIATION OF IRON BY WATER HYACINTH (*EICHHORNIA CRASSIPES*)**
- 59-5 13 Macauley, Kyle W.*; Ash, Richard; Ullmann, Paul Victor: **RELATING RARE EARTH ELEMENT UPTAKE TO ORIGINAL SOFT TISSUE PRESERVATION IN CRETACEOUS AND MIOCENE FOSSIL BONES**
- 59-6 14 France, Cameron G.*; Johnson, Brad; Bratt, Anika: **NUTRIENT DYNAMICS IN 3 WATER BASINS: AN ANALYSIS OF THE FACTORS EFFECTING EUTROPHICATION IN LAKE DAVIDSON**
- 59-7 15 Curran, Katherine L.*; Kelly, Jacque L.: **EVALUATION OF SUBMARINE GROUNDWATER DISCHARGE, SALINITY, AND PH TRENDS IN COMPARISON TO EASTERN OYSTER BEDS THROUGHOUT GEORGIA TIDAL CREEKS**
- 59-8 16 Walker, Dallin S.*; Baedke, Steve J.; Maynard, Joel P.: **THE EFFECTS OF DEICING CHEMICALS ON THE AQUEOUS CHEMISTRY OF BIG SPRING, HARRISONBURG, VA**

- 59-9 17 Johnson, Bradley G.; Cooley, Susannah; Stiefel, William C.*: **THE IMPACT OF WILDFIRES ON HILLSLOPE HYDROLOGY IN THE BLUE RIDGE MOUNTAINS OF NORTH CAROLINA, USA**
- 59-10 18 Truini, Natalie*; Scanlon, Paul; Burkhart, Patrick: **STORMWATER MANAGEMENT AND EROSION CONTROL ON SLIPPERY ROCK UNIVERSITY'S CAMPUS**
- 59-11 19 Douglas, Jared J.*; Prestegard, Karen L.: **EFFECTS OF RESERVOIR STORAGE ON STREAMFLOW IN WESTERN CAPE, SOUTH AFRICA**
- 59-12 20 Crum, Kelly*; Gannon, J.P.: **INSIGHTS INTO CRITICAL ZONE STRUCTURE AND SUBSURFACE STORAGE FROM STREAMFLOW RECESSION ANALYSIS**
- 59-13 21 Stephens, Connor*; Evans, Sarah G.: **ANALYSIS OF INCREASED BASEFLOW ACROSS NORTHERN EURASIAN RIVERS UNDERLAIN BY PERMAFROST**
- 59-14 22 Miller, Hannah*; Kline, Camilla; Hage, Melissa: **THERMAL STRATIFICATION AND CHEMICAL DISPERSION IN WARM MONOMICTIC RESERVOIRS WITH AND WITHOUT INDUCED MIXING**
- 59-15 23 Wattles, Alex*: **HYDRO-GEOPHYSICAL COMPARISON OF OBSERVATION WELL #2 AT THE DICKINSON COLLEGE FARM, SOUTH MIDDLETON TOWNSHIP, PA**
- 59-16 24 Graham, Kathryn*; Laney, Grace; Intskirveli, Elizabeth; Lumerman, Jason; Schmitkons, Jonathan P.: **CALCIUM CARBONATE WHITING EVENTS IN FAYETTEVILLE GREEN LAKE: BIOLOGICAL OR GEOLOGICAL ORIGIN?**
- 59-17 25 Whately, Emily Alexus*; Connelly, Samuel: **LAND TO LAKE: A HYDROGRAPHIC AND GEOMORPHOLOGICAL ANALYSIS OF CLAYTOR LAKE USING SONAR TECHNOLOGY**
- 59-18 26 Cassidy, Galen Patrick*; Barber, Donald C.: **MONITORING TOXIC HEAVY METAL CONCENTRATIONS OF MASSACHUSETTS SALT MARSH SEDIMENTS**
- 59-19 27 Lowery, Sara*; Barineau, Clinton I.; Thompson, Stephanie; Do, Ivy: **STRAIN ANALYSIS IN THE EASTERN BLUE RIDGE AND ADJACENT BREVARD FAULT ZONE, SOUTHERN APPALACHIANS OF ALABAMA AND GEORGIA**
- 59-20 28 Williams, Mikaela C.*; Aronoff, Ruth F.: **TECTONIC EVOLUTION OF ROCKS OF THE SOUTHERN APPALACHIANS IN THE PROTEROZOIC EON**
- 59-21 29 Mellerson, Brianna*; McGary, R. Shane: **INVESTIGATING THE STRUCTURE OF MOLE HILL USING RESISTIVITY AND MAGNETICS**
- 59-22 30 Williams, Sheri J.*; Diedesch, Timothy F.: **PRELIMINARY STRUCTURAL ANALYSIS OF A HIGH STRAIN ZONE IN THE EASTERN PIEDMONT, GEORGIA**
- 59-23 31 Reid, Jessica A.*; Bernard, Rachel E.; Harms, Tekla A.: **USING CRYSTALLOGRAPHIC PREFERRED ORIENTATION IN MYLONITIC GARNET LEUCOGNEISS TO STUDY PALEOPROTEROZOIC TECTONICS IN THE RUBY RANGE, MONTANA**
- 59-24 32 Palmer, Matthew S.*; Mobasher, Katayoun; Guimaraes Ferreira, Ana Mafalda; Allison, Jerry D.: **PRELIMINARY PETROGRAPHIC STUDIES AND GIS-BASED MAPPING OF THE METAMORPHIC ROCKS OF ELACHEE NATURE SCIENCE CENTER, GEORGIA**
- 59-25 33 Lim, Luz C.*; Bernard, Rachel E.; Harms, Tekla A.: **PALEOPROTEROZOIC GREEN-MICA QUARTZITE IN THE RUBY RANGE OF SOUTHWEST MONTANA**
- 59-26 34 Jefferson, Jake*; Alemu, Tadesse B.: **CRUSTAL STRUCTURE VARIATION IN THE KERGUELEN PLATEAU: GEOPHYSICAL EVIDENCE FOR A PREVIOUSLY UNEXPLORED SHALLOWER MOHO BETWEEN THE SOUTHERN AND NORTHERN-CENTRAL PLATEAU**
- 59-27 35 Zimmerman, Thomas A.*; Cunningham, Dickson: **THE STRUCTURAL EVOLUTION AND REGIONAL TECTONIC IMPORTANCE OF THE HONEY HILL FAULT ZONE, SE, CONNECTICUT – A KEY TO UNDERSTANDING THE OROGENIC COLLAPSE OF THE SOUTHERN NEW ENGLAND APPALACHIANS**

- 59-28 36 Chiama, Kristen*; Betka, Paul; Huang, Mong-Han: **COMBINING SHADED RELIEF MAPS AND FIELD STUDIES TO DOCUMENT ACTIVE FAULTING WITHIN THE CHURACHANDPUR-MAO FAULT SYSTEM; INDO-BURMAN RANGES, NORTHEAST INDIA**
- 59-29 37 Marcelli, Olivia M.*; Hanafi, Bari R.; Withjack, Martha O.; Schlische, Roy W.: **3D ANALYSIS OF SMALL-SCALE FAULTING ASSOCIATED WITH OBLIQUE SHORTENING: A SCALED EXPERIMENTAL MODELING STUDY**
- 59-30 38 Konovalchik, Nicholas A.*; Rahl, Jeffrey M.: **USING ELECTRON BACKSCATTER DIFFRACTION TO PERFORM CALCITE TWIN PALEOSTRESS ANALYSIS: METHODOLOGY AND APPLICATION TO THE ARBUCKLE MOUNTAINS**
- 59-31 39 Luff, Megan*; Cheung, Philip; Covelli, Gennaro; Fernandes, James T.; Horan, Timothy R.; McIntyre, Rory A.; Rasmussen, Scott; Vorwick, Delaney M.; Kondas, Sean M.; Ebel, John E.: **GRAVITY SURVEYING TO LOCATE A FAULT: USING GRAVITY ANOMALIES TO INVESTIGATE THE 5.6 MAGNITUDE EARTHQUAKE OF 1727 IN NORTHEAST ESSEX COUNTY, MA**
- 59-32 40 Gokey, Kailee*; Andrews, Graham D.M.: **STRUCTURAL ANALYSIS OF TENSILE FRACTURE SETS IN THE MEDICINE LAKE DACITE LAVA, CALIFORNIA**
- 59-33 41 Moroz, Gabriela*; Hall, Sarah R.; Farrell, Anna; Disney, Jane; Stanton, Bruce: **IS ONCE EVERY 3-5 YEARS ENOUGH?: SEASONALITY IN PRIVATE WELL WATER QUALITY OF NORTHERN MT. DESERT ISLAND, MAINE**

SESSION NO. 60**T27. Appalachian Petrology: A Session to Honor the Career of Dr. Robert J. Tracy (Posters)**

8:00 AM, Hyatt Regency Reston, Grand Ballroom A-D

Authors will be present from 10 AM to 12 PM

Booth #

- 60-1 42 Willard, Sierra Rose*; El-Shazly, Aley K.: **GEOCHEMISTRY OF ANTHOPHYLLITE - GARNET - TALC SCHISTS FROM THE LITTLE PINE GARNET MINE, NORTH CAROLINA: TECTONIC IMPLICATIONS FOR THE MARS HILL TERRANE AND GRENVILLE BASEMENT**
- 60-2 43 Cole, Brenna G.*; Andrews, Graham D.M.: **COMPARATIVE PETROLOGY AND TEXTURAL ANALYSIS OF LATE JURASSIC, PHLOGOPITE-BEARING ULTRAMAFIC DIKES IN PENNSYLVANIA AND WEST VIRGINIA: INSIGHTS INTO XENOLITH AND XENOCRYST SAMPLING AND TRANSPORT**
- 60-3 44 Chaumba, Jeff B.*; Bradley, Philip J.: **PETROLOGY OF THE BOY SCOUT-JONES MOLYBDENUM PROSPECT, HALIFAX COUNTY, NORTH CAROLINA**
- 60-4 45 Mato, Klementina*; Mana, Sara: **MODAL, TEXTURAL ANALYSIS AND GEOCHEMICAL SIGNATURE OF INTRUSIVE IGNEOUS ROCKS IN A MINGLING ENVIRONMENT AT SALEM WILLOWS, MA**
- 60-5 46 Wimer, Michael*; Johannesen, Katharine; Ianno, Adam J.: **AMPHIBOLITE FACIES METAMORPHISM OF TREMOLITE/ACTINOLITE-BEARING ULTRAMAFIC ROCKS FROM ROCKY RIDGE AND PEDEN ULTRAMAFIC BODIES OF THE ASHE METAMORPHIC SUITE, NC**
- 60-6 47 Rappleye, Sarah*; Tomascak, Paul; Nachlas, William O.; Solar, Gary S.: **APATITE AS A HALOGEN TRACER IN THE MIGMATITE-GRANITE COMPLEX OF SOUTHERN MAINE**
- 60-7 48 Haroldson, Erik L.*; Kohl, Martin S.: **FLUID AND SOLID INCLUSIONS IN EAST TENNESSEE FIELD DIAMONDS (DOUBLY TERMINATED QUARTZ CRYSTALS)**
- 60-8 49 Castle, Evan*; Ramirez, Daniel; Ahern, Shannon; Severs, Matthew J.: **GEOCHEMICAL INVESTIGATION OF DIKES ASSOCIATED WITH THE CORTLANDT-BEEMERVILLE TREND AND CHANGING PETROGENETIC PARADIGMS**
- 60-9 50 Nagurney, Alexandra B.*; Caddick, Mark J.: **MICROSTRUCTURAL AND GEOCHEMICAL CONTROLS ON THE CRYSTALLIZATION OF GARNET AND STAUROLITE: AN EXAMPLE FROM THE MEGUMA TERRANE, NOVA SCOTIA**

- 60-10 51 Michel, Andrew*; Dietsch, C.; McAleer, Ryan J.: **IS THE HARRISON GNEISS IN SOUTHWESTERN CONNECTICUT VOLCANIC OR PLUTONIC? A NEW SHRIMP U-PB ZIRCON AGE AND A SUMMARY OF FIELD RELATIONS**
- 60-11 52 Tefend, Karen S.*; Kath, Randy L.: **GEOCHEMICAL INVESTIGATION OF THE LONG ISLAND CREEK GNEISS: IMPLICATIONS FOR THE PALEOZOIC TECTONICS OF THE SOUTHERN APPALACHIANS**
- 60-12 53 Kirkham, Samuel*; Buzon, Marian E.; Reid, Robert: **CHARACTERIZING METAMORPHOSED ULTRAMAFICS IN CARROLLTON, GEORGIA**

SESSION NO. 71**T14. Out of the Classroom, Out of the Box: Innovative Approaches to Geoscience Education (Posters)**

1:30 PM, Hyatt Regency Reston, Grand Ballroom E-G

Authors will be present from 10 AM to 12 PM

Booth #

- 71-1 54 Gibson, Michael A.*; Leimer, H. Wayne; Byerly, Don: **CELEBRATING 40 YEARS OF TENNESSEE GEOCONCLAVE: A HISTORICAL PERSPECTIVE**
- 71-2 55 Georgen, Jennifer*; Carlson, Charles: **THE USE OF GOOGLE TECHNOLOGY WITHIN THE CLASSROOM: GEOSCIENCE EDUCATION MODULES AND A VIRTUAL TOUR OF MID-ATLANTIC COASTAL GEOLOGY**
- 71-3 56 Alexander, Sarah E.*; Johannesen, Katharine; Poole, Territa L.: **DOES GOOGLE EARTH VR IMPROVE 3D SPATIAL ABILITIES IN GEOSCIENCE STUDENTS?**
- 71-4 57 Andrews, Graham D.M.*; Labinshak, Gabrielle: **HEKLA: THE 3D DIGITAL ATLAS OF VOLCANIC ROCKS**
- 71-5 58 Kuehn, Stephen C.*; Allen, Joseph L.: **INTO THE MICRO-WORLD: 10 YEARS OF UNDERGRADUATE EPMA FOR TEACHING AND RESEARCH**
- 71-6 59 Costlow, Tyler N.*; Joyce, Robert T.; McWhorter, Kelliann M.; Trostle, Tyler A.; Spahr, Alivia K.; Cornell, Sean R.; Drzewiecki, Chad: **TEACHING ECONOMIC GEOLOGY USING THE BIGGEST SANDBOX EVER: USING A TEAM-BASED MULTI-METHODS APPROACH TO PROVIDE HIGH-IMPACT REAL-WORLD LEARNING EXPERIENCES**
- 71-7 60 Shank, Stephen G.*; Reese, Stuart: **EXPLORING THE GEOLOGIC HISTORY OF SOUTH-CENTRAL PENNSYLVANIA FROM GOVERNOR DICK TOWER**
- 71-8 61 Alexander, Jane*: **INTRODUCING STUDENTS TO THE WORK OF LOCAL GEOLOGISTS AT THE GEOLOGICAL ASSOCIATION OF NEW JERSEY ANNUAL MEETING**
- 71-9 62 Cholnoky, Jennifer T.: **ENGAGING GEOSCIENCE STUDENTS BY UTILIZING A COLLEGE ART MUSEUM**
- 71-10 63 Limbeck, Maggie R.*; Bauer, Jennifer E.; Lam, Adriane R.; Sheffield, Sarah L.: **TIME SCAVENGERS: REACHING THE PUBLIC THROUGH SCIENCE BLOGS AND DETERMINING WHAT CONTENT PERFORMS BEST ON SOCIAL MEDIA PLATFORMS**

**AFTERNOON
ORAL TECHNICAL SESSIONS****SESSION NO. 61****D20. Structural Geology, Microstructures, and Geochronology**

1:30 PM, Hyatt Regency Reston, Lake Fairfax

Jamie S.F. Levine, Ryan J. McAleer and Jeffrey M. Rahl, Presiding

- 61-1 1:30 PM Hoxha, Lirim*: **ON THE PRESENCE OF THE STRIKE-SLIP FAULTS IN THE NORTHERN ALBANIA**

- 61-2** 1:50 PM Davis, Benjamin L.*; Tull, James F.; Barineau, Clinton I.: **GEOLOGIC RELATIONSHIPS AT THE SOUTHERN TERMINUS OF THE BREVARD ZONE IN ALABAMA**
- 61-3** 2:10 PM Bobbyarchick, Andy R.*; Spatz, Andrew A.: **ANALYSIS AND COMPARISON OF MULTIPLE SYSTEMATIC PLANAR FRACTURES IN METAVOLCANIC AND METASEDIMENTARY ROCK SEQUENCES IN THE CAROLINA TERRANE IN NORTH CAROLINA**
- 61-4** 2:30 PM Peterson, Ginny*; Tjapkes, Daniel J.: **REFINING THE METAMORPHIC CONDITIONS AND STRUCTURAL SIGNIFICANCE OF THE CHUNKY GAL MOUNTAIN FAULT, CENTRAL BLUE RIDGE, NORTH CAROLINA, BY INTEGRATED EVALUATION OF METAMORPHIC ASSEMBLAGES, STRUCTURAL FABRICS AND MONAZITE AGES**
- 61-5** 2:50 PM Nolan, Jack T.*; Finnerty, Patrick; Blake, David E.; LaMaskin, Todd A.; Barbeau, David L.: **PUSHING UP DAISIES: DOMAINAL ANALYSIS OF THE TRANSPRESSIONAL EASTERN RALEIGH TERRANE USING COMBINED LITHOLOGIC, STRUCTURAL, AND GEOCHRONOLOGIC DATA**
- 3:10 PM **BREAK**
- 61-6** 3:25 PM Bruner, Austin*; Pullen, Alex; Barbeau, David L.; Leier, Andrew: **EVALUATION OF THE DUST PRODUCTION PATHWAYS OF THE SOUTHERN SOUTH AMERICAN PLEISTOCENE LOESS USING DETRITAL ZIRCON GEOCHRONOLOGY**
- 61-7** 3:45 PM McAleer, Ryan J.*; Carter, Mark W.; Holm-Denoma, Christopher S.; Vazquez, Jorge A.: **NEW AGE CONTROLS ON THE PETERSBURG TERRANE, CENTRAL-EASTERN VIRGINIA PIEDMONT**
- 61-8** 4:05 PM Millonig, Leo J.; Albert, Richard; Gerdes, Axel; Avigad, Dov; Dietsch, C.*: **IN SITU THIN SECTION LA-ICP-MS U-PB DATING OF GARNET FROM THE STRAITS SCHIST, WESTERN CONNECTICUT**
- 61-9** 4:25 PM Holder, Robert M.*; Hacker, Bradley R.; Kylander-Clark, Andrew R.C.; Cottle, John: **DATING CONTINENTAL SUBDUCTION AND EXHUMATION WITH MONAZITE IN THE WESTERN GNEISS REGION, NORWAY**
- 61-10** 4:45 PM Gilotti, Jane A.*; Kosminska, Karolina; McClelland, William C.; Koch, Megan M.; Kroeger, Emma D.L.; Trembath, Matthew: **MICROSTRUCTURES AND KINEMATICS OF DUCTILE FABRICS IN L-S TECTONITES FROM QUARTZOFELDSPATHIC GNEISS ALONG THE SOUTHWESTERN MARGIN OF THE PEARYA TERRANE, ELLESMERE ISLAND, CANADA**
- 61-11** 5:05 PM Rahl, Jeffrey M.*; Singleton, John S.; Befus, Kenneth S.: **MICROSTRUCTURAL AND QUARTZ CRYSTALLOGRAPHIC ORIENTATION DATA DOCUMENT LOW-TEMPERATURE COAXIAL FLATTENING IN THE CENTRAL BLUE RIDGE, VIRGINIA**

SESSION NO. 62

T2. Wetlands in a Changing World: Impacts of Environmental Change on Wetland Function and Ecosystem Services

1:30 PM, Hyatt Regency Reston, Regency Ballroom B

Miriam C. Jones and Debra A. Willard, Presiding

- 1:30 PM **INTRODUCTORY REMARKS**
- 62-1** 1:35 PM Gillen, Megan N.*; Messerschmidt, Tyler C.; Kirwan, Matthew L.: **BIOPHYSICAL CONTROLS OF MARSH SOIL SHEAR STRENGTH ALONG AN ESTUARINE SALINITY GRADIENT**
- 62-2** 1:55 PM Hoefke, Kristen E.B.*; Jones, Miriam C.; Wingard, G. Lynn; Stackhouse, Bethany L.: **STABLE ISOTOPES OF MODERN PLANTS AND ALGAE AS PROXIES FOR PAST ENVIRONMENTAL CHANGE IN FLORIDA BAY, EVERGLADES NATIONAL PARK**

- 62-3** 2:15 PM Noe, Gregory B.*; Hopkins, Kristina G.; Claggett, Peter; Hupp, Cliff R.; Schenk, Edward R.; Metes, Marina; Lacher, Lara; Fergus, Craig; McShea, William; Akre, Thomas: **PREDICTED EFFECTS OF FUTURE LAND-USE CHANGE ON FLOODPLAIN AND STREAMBANK LOADS OF SEDIMENT AND NUTRIENTS IN THE MID-ATLANTIC US**
- 62-4** 2:35 PM Gonneea, Meagan*; Kroeger, Kevin; Spivak, Amanda; Tang, J.: **CARBON DYNAMICS IN IMPOUNDED AND RESTORED WETLANDS: LINKAGES TO WETLAND HYDROLOGY AND ELEVATION**
- 2:55 PM **BREAK**
- 62-5** 3:10 PM Nichols, Jonathan*; Peteet, Dorothy M.; Booth, Robert K.: **CARBON SEQUESTRATION BY PEATLANDS IN EASTERN NORTH AMERICA RESPOND TO GLOBAL AND REGIONAL CLIMATE CHANGES**
- 62-6** 3:30 PM Peteet, Dorothy*; Dunton, Molly; Wang-Mondaca, Carol; Pace, Grant; Nichols, Jonathan; Chang, Clara; Kenna, Timothy C.: **NYC COASTAL WETLANDS - SHIFTING VALUES THROUGHOUT HISTORY**
- 62-7** 3:50 PM Willard, Debra A.*; Jones, Miriam C.; Hoefke, Kristen E.B.; Wurster, Fred; Balentine, Karen; Garner, Morgan: **Holocene Hydroclimate and Fire Variability in the Great Dismal Swamp, Southeastern Virginia, USA**
- 62-8** 4:10 PM Rech, Jason A.*: **SENSITIVITY OF DESERT WETLANDS TO CLIMATIC CHANGE**

SESSION NO. 63

T23. New Developments in the Understanding of Pre-Appalachian Rocks of Eastern North America

1:30 PM, Hyatt Regency Reston, Regency Ballroom A

Brent V. Miller, Brent Owens and Sandra Barr, Presiding

- 1:30 PM **INTRODUCTORY REMARKS**
- 63-1** 1:35 PM Doughty, P.J.*; Barineau, Clinton I.: **MAPPING THE STONEWALL LINE FAULT FROM EASTERN ALABAMA INTO WESTERN GEORGIA: EXTENT OF A SOUTHERN APPALACHIAN, ORDOVICIAN PAIRED ARC-BACKARC SYSTEM IN THE WESTERN INNER PIEDMONT**
- 63-2** 1:55 PM Walter, Ryan T.*; Sasina, Amanda M.; Bailey, Christopher M.: **UNMASKING A TERRANE TRIPLE POINT IN CENTRAL VIRGINIA**
- 63-3** 2:15 PM Kuiper, Yvette D.*; Hepburn, J. Christopher: **DETRITAL ZIRCON POPULATIONS OF THE EASTERN LAURENTIAN MARGIN IN THE APPALACHIANS**
- 63-4** 2:35 PM Perrot, Morgann*; Waldron, John W.F.; Davies, Joshua H.F.L.; Pearson, D. Graham; Luo, Yan: **DETRITAL ZIRCON LASER ABLATION SPLIT-STREAM U-PB-HF DATA FROM ORDOVICIAN TO DEVONIAN SEDIMENTARY ROCKS IN THE CONNECTICUT VALLEY – GASPÉ BELT: FINGERPRINTING LAURENTIAN AND GONDWANAN SOURCES**
- 63-5** 2:55 PM Owens, Brent E.*; Johnson, Thomas A.; Cottle, John M.: **THE SAGA OF A SINGLE SAMPLE: ATTEMPTS TO UNDERSTAND THE GEOLOGIC HISTORY OF A PORTION OF THE MAIDENS GNEISS, GOOCHLAND TERRANE, VIRGINIA**
- 3:15 PM **BREAK**
- 63-6** 3:30 PM Barr, Sandra M.*; Miller, Brent V.; White, Chris E.: **TONIAN ALKALI ANORTHOSITE, FERRONORITE, AND GABBRO IN THE LOWER COVERDALE PLUTONIC SUITE, SOUTHERN NEW BRUNSWICK, CANADA: AN AMAZONIAN PART OF GANDERIAN BASEMENT?**
- 63-7** 3:50 PM Miller, Brent V.*; Barr, Sandra M.; Dunning, Greg R.; White, Christopher E.; Raeside, Robert: **SILURIAN METAMORPHISM OF PROTEROZOIC ANORTHOSITE AND RELATED ROCKS: U-PB, TRACE-ELEMENT AND HF ISOTOPIC EVIDENCE**

AFTERNOON POSTER TECHNICAL SESSIONS

FROM ZIRCON, RED RIVER ANORTHOSITE SUITE,
NORTHERN CAPE BRETON ISLAND, NOVA SCOTIA,
CANADA

- 63-8 4:10 PM Ellison, Sonia M.*; Kuiper, Yvette D.; Crowley, Jim L.; Murray, Daniel P.: **INVESTIGATING THE BOUNDARIES OF THE SOUTHEASTERN NEW ENGLAND AVALON TERRANE: NEW LA-ICP-MS U-PB ZIRCON DATES FROM IGNEOUS AND METASEDIMENTARY ROCKS**
- 63-9 4:30 PM Thompson, M.D.*; Crowley, J.L.: **EVOLVING VIEWS OF AVALONIA IN SOUTHEASTERN NEW ENGLAND: PERSPECTIVES FROM EDIACARAN CAMBRIDGE "ARGILLITE", EASTERN MASSACHUSETTS**
- 63-10 4:50 PM White, Chris E.*; Barr, Sandra M.; van Rooyen, Deanne; Crowley, James L.: **THE MOUNT EPHRAIM BLOCK, COBEQUID HIGHLANDS, NOVA SCOTIA, CANADA: A SIGNIFICANT CA. 750-735 MA MAGMATIC ARC EVENT IN AVALONIA**

SESSION NO. 64

T30. Private Wells—Current Challenges and Opportunities

1:30 PM, Hyatt Regency Reston, Lake Audubon

Sille Larsen, Patti Casey, Jonathan J. Kim and Joseph D. Ayotte, Presiding

- 1:30 PM **INTRODUCTORY REMARKS**
- 64-1 1:35 PM Zuniga, LeAnn X.*; Boutt, David F.; Richardson, Justin B.: **MANGANESE SOURCING AND TRANSPORT IN MASSACHUSETTS GROUNDWATER: UNDERSTANDING DISSOLUTION MECHANISMS AND CREATING A TEMPORALLY VARIANT DATABASE**
- 64-2 1:55 PM Sinton, Christopher W.*; Olivieri, Matthew; Perry, Tara; Stoddard, Katherine: **WATER QUALITY OF ROADSIDE SPRINGS IN CENTRAL NEW YORK STATE**
- 64-3 2:15 PM Larsen, Sille*; Levitt, Joseph P.: **CHLORIDE CONCENTRATIONS IN DOMESTIC WELLS AND PROXIMITY TO ROADWAYS IN VERMONT, 2011-2018**
- 64-4 2:35 PM Kim, Jonathan J.*; Casey, Patti: **USING GROUNDWATER TRACERS TO ASSESS THE FATE AND TRANSPORT OF NITRATES IN AQUIFERS NEAR LARGE DAIRY FARMS IN CENTRAL VERMONT**
- 64-5 2:55 PM Newton, Robert M.*; Schroeder, Tara: **ENSURING DOMESTIC WELL WATER QUALITY IN THE OSS�PEE AQUIFER REGION OF CENTRAL NEW HAMPSHIRE**
- 3:15 PM **BREAK**
- 64-6 3:30 PM Farrell, Anna*; Hall, Sarah R.; Disney, Jane; Stanton, Bruce: **MONITORING WELL WATER IN NEW HAMPSHIRE AND MAINE WHILE ENGAGING HIGH SCHOOL AND COLLEGE STUDENTS IN INTERDISCIPLINARY AND SOCIETALLY RELEVANT WORK: AN EXAMPLE FROM MT. DESERT ISLAND, ME**
- 64-7 3:50 PM O'Neill, Heidi S.*; Flanagan, Sara V.; Spayd, Steve; Procopio, Nicholas A.; Gleason, Jessie A.: **TARGETED ARSENIC OUTREACH OF NEW JERSEY PRIVATE WELLS WITH PASSING LEVELS UNDER PREVIOUS MAXIMUM CONTAMINANT LEVEL AND THE NEW JERSEY PRIVATE WELL TESTING ACT (PWTA)**
- 64-8 4:10 PM Kane, Evan O.*; Keyworth, Amy J.: **EFFECTIVE LOCAL GOVERNMENT RESPONSE TO NATURALLY OCCURRING RADIONUCLIDE CONTAMINATION IN PRIVATE WELLS: A CASE STUDY**
- 4:30 PM **CONCLUDING REMARKS**

SESSION NO. 65

D4. Geochemistry (Posters)

1:30 PM, Hyatt Regency Reston, Grand Ballroom E-G

Authors will be present from 3 to 5 PM

Booth #

- 65-1 1 Moore, Eli K.*; Spielman, Stephanie J.: **EXPLORING REDOX EVOLUTION PRESERVED IN THE MINERAL RECORD WITH DRAGON**
- 65-2 2 Moore, Christopher R.*; Brooks, Mark J.; Goodyear, Albert C.; Ferguson, Terry A.; Perrotti, Angelina G.; Mitra, Siddhartha; Listeck, Ashlyn M.; King, Bailey C.; Mallinson, David J.; Lane, Chad S.; Kapp, Josh D.; West, Allen; Carlson, David L.; Wolbach, Wendy S.; Them, Theodore R.; Harris, M. Scott; Pyne-O'Donnell, Sean: **SEDIMENT CORES FROM WHITE POND, SOUTH CAROLINA, CONTAIN A PLATINUM ANOMALY, PYROGENIC CARBON PEAK, AND COPROPHILOUS SPORE DECLINE AT 12.8 KA**
- 65-3 3 Mantelli, Isaac D*: **LIMITING FACTORS OF PYRITE FORMATION IN THE APPEKUNNY FORMATION OF THE BELT SUPERGROUP, MT**
- 65-4 4 Mistikawy, Justin*; Mackowiak, Trevor; Butler, Mark J.; Mischenko, Ivan C.; Cernak, Richard S.; Richardson, Justin: **CHROMIUM, MANGANESE, NICKEL, AND COBALT MOBILITY AND BIO-AVAILABILITY FROM MAFIC-TO-ULTRAMAFIC MINE SPOIL WEATHERING IN WESTERN MASSACHUSETTS, USA**
- 65-5 5 Zuna, Jonnathan*; Rddad, Larbi; Herman, Gregory: **DIABASE AND ASSOCIATED SULFIDES AS POSSIBLE SOURCES OF BORON THAT CONTAMINATES THE GROUNDWATER OF THE NEWARK BASIN, EASTERN USA**
- 65-6 6 Hicks, Taryn*; Dygert, Nicholas J.: **EXPLORING THE TECTONIC CONTROLS ON THERMAL HISTORY OF THE MANTLE LITHOSPHERE OF THE SOUTH WEST OF NORTH AMERICA USING XENOLITH GEOCHEMISTRY**
- 65-7 7 Turkes, Ozan*; Lee, Ming-Kuo: **AN EXPERIMENTAL AND GEOCHEMICAL MODELING STUDY OF CO₂-BRINE-SHALE INTERACTION**
- 65-8 8 Mayer, Katherine*; Elick, Jennifer M.: **USING X-RAY FLUORESCENCE TO DETERMINE THE INFLUENCE OF ACID MINE DRAINAGE FLOODING IN FLOODPLAIN SEDIMENTS ALONG SHAMOKIN CREEK, PA**
- 65-9 9 Clemens, Sonia C.*; Brkljaca, Mia; Pearson, Delaina; Andersen, C. Brannon: **SOIL C AND N AS INDICATORS OF VINEYARD SOIL QUALITY IN THE RAVNI KOTARI REGION OF CROATIA**
- 65-10 10 Muntz, Alexa L.*; Evans, Mark A.; Oyewumi, Oluyinka: **GEOCHEMICAL ASSESSMENT OF LEGACY LEAD MINING SITES**
- 65-11 11 Sears, Helen*; Lascu, Ioan; Wagner, Courtney: **A SURVEY OF MAGNETOTACTIC BACTERIA IN THE POTOMAC RIVER AREA OF THE CHESAPEAKE BAY WATERSHED**
- 65-12 12 Millum, Trent Matthew*; Lachhab, Ahmed: **THE IMPACT OF LAKE STRATIFICATION ON BIOGEOCHEMICAL CYCLING AND DOWNSTREAM WATER QUALITY: CASE STUDY OF WALKER AND FAYLOR LAKES IN SNYDER COUNTY, PA**

SESSION NO. 66

D11. Marine/Coastal Science (Posters)

1:30 PM, Hyatt Regency Reston, Grand Ballroom E-G

Authors will be present from 3 to 5 PM

Booth #

- 66-1 13 Stackhouse, Bethany L.*; Wingard, G. Lynn: **GRAIN SIZE AND ELEMENTAL ANALYSIS OF HURRICANE IRMA SEDIMENT DEPOSITS ON FLORIDA BAY ISLANDS, EVERGLADES NATIONAL PARK, USA**

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| 66-2 | 14 | Bergstresser, Sarah E.*; Wingard, G. Lynn: GIS AND REMOTE SENSING TO EXAMINE MANGROVE RESILIENCY ON FLORIDA BAY ISLANDS AFTER HURRICANE IRMA | | | |
| 66-3 | 15 | Krezdorn, Kyle Matthew*; Oakley, Adrienne; Cornell, Sean R.; Milinic, Bojan; Silveira Meyers, Joao; Garnand, Alexandra: USING SEDIMENT CORES TO TRACK ENVIRONMENTAL CHANGE IN SWAN COVE POOL, CHINCOTEAGUE NATIONAL WILDLIFE REFUGE, ASSATEAGUE ISLAND, VA, IN RESPONSE TO BARRIER ISLAND ROLLOVER, OVERWASH, AND REFUGE MANAGEMENT | 67-6 | 6 | Trippi, Michael H.*: NEW H-H' CROSS SECTION FROM ALABAMA TO WEST VIRGINIA ILLUSTRATING THE REGIONAL STRUCTURAL AND STRATIGRAPHIC FRAMEWORK OF THE BLACK WARRIOR BASIN AND SOUTHERN AND CENTRAL APPALACHIAN BASIN |
| 66-4 | 16 | Fink, Madison S.*; Hanebuth, Till J.J.; Oliver, Mimi; Collins, Sarah; Hawkes, Andrea D.; Talke, Stefan A.: 20TH AND 21ST CENTURY SEA LEVEL CHANGES IN WINYAH BAY, SC | 67-7 | 7 | Vincett, William K.*; McLaughlin, Peter P.; Martin, Ronald E.: PRELIMINARY EXAMINATION OF STRATIGRAPHY AND FORAMINIFERA OF THE PALEOGENE OF CENTRAL DELAWARE |
| 66-5 | 17 | Echols, Alexis F.*; Hannides, Angelos K.: CHARACTERISTICS AND FORMATION DRIVERS OF INTERTIDAL BIOFILMS AT AN OPEN OCEAN-FACING SANDY BEACH | 67-8 | 8 | Bora, Erick T.*; Franklin, Joseph; Goodson, Shane H.; Drzewiecki, Peter A.: 3-D STRATIGRAPHIC CORRELATION OF SHALLOW, DENSELY SPACED CORES FROM THE JURASSIC LOWER PORTLAND FORMATION IN THE HARTFORD BASIN (HARTFORD, CONNECTICUT) |
| 66-6 | 18 | Clemens, Joseph*; O'Neal, Michael; Lowery, Darrin L.: USING COLONIAL ERA SALT EVAPORATION PONDS AS A METRIC TO EVALUATE TIDE BASED MODELS OF SEA LEVEL CHANGE FOR THE PAST CENTURY | 67-9 | 9 | Drzewiecki, Peter*; Bora, Erick T.; Franklin, Joseph; Goodson, Shane H.; Thomas, Margaret A.; Steinen, Randolph: DEVELOPING A PUBLIC STRATIGRAPHIC DATABASE FOR THE SEDIMENTARY CORES FROM THE HARTFORD BASIN, CONNECTICUT |
| 66-7 | 19 | Hartley, Brittany*; Limber, Patrick: QUANTIFYING BOAT WAKE-DRIVEN EROSION AND LAND LOSS ALONG THE ATLANTIC INTRACOASTAL WATERWAY IN SOUTH CAROLINA, USA | 67-10 | 10 | Al Ali, Alanoud M.*; Martin, Ronald E.; McLaughlin, Peter P.: RESERVOIR CHARACTERIZATION OF THE ASMARI FORMATION, UNITED ARAB EMIRATES: THE ROLE OF DEPOSITIONAL ENVIRONMENT AND DIAGENESIS IN DETERMINING THE POROSITY AND PERMEABILITY PROPERTIES OF THE RESERVOIR LIMESTONE |
| 66-8 | 20 | Meyers, Ezekiel W.*; Hanebuth, Till J.J.; Durica, John T.; Zhang, Wenyan; Porz, Lucas; Arlinghaus, Peter: FEASIBILITY STUDY ADDRESSING THE CHRONIC HARBOR SILTING ISSUE IN GEORGETOWN, SC | 67-11 | 11 | Buck, Tyler W.*; Krezdorn, Kyle Matthew; Dimatteo, Louis; Sewall, Jacob O.; Heatley, Shane: CHANGES IN SEDIMENT CHARACTERISTICS WITH DEPTH AT THE RONALD R. RHEIN ENVIRONMENTAL STUDY AREA |
| 66-9 | 21 | Oswald, Matthew*; Hanebuth, Till J.J.: HOW TO EXTRACT MICROPLASTICS FROM HETEROGENEOUS AND COHESIVE MARSH SUBSTRATE | 67-12 | 12 | Renner, Faith A.*; Farmer, E. Christa; Achek, Moread; Buchbinder, Brandon; Bowen, Joyce; Darnaud, Denis; Dwyer, Sophia; Epstein, Alexander; Johnson, Anthony; Lopez-Rodriguez, Paola; Mahoney, Lauren; Maliszka, Miranda; Reardon, Avery; Santella, Kiley; Barbera, Phillip: SEDIMENT GRAIN SIZE ANALYSIS IN LONG ISLAND MARSH CORES |
| 66-10 | 22 | Dick, Kaitlin Louise*; Hannides, Angelos K.: PHYSICAL AND MINERALOGICAL PROPERTIES OF COASTAL SANDS AND THEIR IMPACT ON BIOGEOCHEMICAL ACTIVITY AND THE MODIFICATION OF LAND-DERIVED SUBSTANCES | 67-13 | 13 | Birsch, Rachel G.*; Hannides, Angelos K.: PERMEABILITY OF COASTAL SANDS: INDEPENDENT MEASUREMENTS AND VALIDATION OF PREDICTIVE RELATIONSHIPS |
| 66-11 | 23 | Russoniello, Christopher*; Clayton, Sophie; Fogaren, Kristen; Levine, Robert; Rudzin, Johna; Soule, Dax; Stopa, Justin; Whitaker, Justine: OPEN DATA, COLLABORATIVE WORKING PLATFORMS, AND INTERDISCIPLINARY COLLABORATION: BUILDING AN EARLY CAREER SCIENTIST COMMUNITY OF PRACTICE TO LEVERAGE OCEAN OBSERVATORIES INITIATIVE DATA TO ADDRESS CRITICAL QUESTIONS IN MARINE SCIENCE | 67-14 | 14 | Macheras, Melissa*: DETERMINING EFFECTS OF BOAT USE ON LAKE SHORELINE EROSION IN NEW HAMPSHIRE AND MAINE USING SEDIMENTOLOGICAL DATA |
| 66-12 | 24 | Arbali, Ashaar A.*; Hannides, Angelos K.: BIOGEOCHEMICAL GRADIENTS AND TRANSFORMATIONS ALONG A SANDY TIDAL CREEK IN LONG BAY, SOUTH CAROLINA | | | |

SESSION NO. 67

D18. Sedimentary Geology and Stratigraphy (Posters)

1:30 PM, Hyatt Regency Reston, Lake Anne

Authors will be present from 3 to 5 PM

Booth #

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| 67-1 | 1 | Osinski, Eric*; Bailey, Christopher M.: A REVISED STRATIGRAPHY FOR THE NEOPROTEROZOIC COVER SEQUENCE IN THE NORTHERN & CENTRAL VIRGINIA BLUE RIDGE |
| 67-2 | 2 | Mustaque, Sharif*; Uddin, Ashraf: PETROCHEMICAL AND MINERALOGICAL STUDY OF PERMO-CARBONIFEROUS SILICICLASTIC GONDWANAN SEQUENCES FROM CENTRAL-EASTERN INDIAN PLATFORM |
| 67-3 | 3 | Naher, Jasmin*; Uddin, Ashraf; Kumar, Rahul: A COMPARATIVE SANDSTONE PETROGRAPHIC AND HEAVY MINERAL STUDY OF THE OLIGOCENE SEDIMENTS FROM THE BENGAL BASIN AND SOUTHEAST SHILLONG, NE INDIA: UNDERSTANDING THE TECTONICS ALONG THE NORTHERN MARGIN OF THE BENGAL BASIN |
| 67-4 | 4 | Fournier, Autumn*: PALEO-STORM RECORDS FROM CAPE ESPENBERG, ALASKA: PAST, PRESENT AND FUTURE |
| 67-5 | 5 | Larsen, C.M.*; Murphy, D.P.; Wais, P.V.; Short, M.E.; Medina, C.C.; Kerpez, N.P.; Hrysko, M.A.; Mastropietro, N.A.; Vanaalstynne, A.M.; Ebert, J.R.: CORRELATION OF SYNTHETIC GAMMA |

SESSION NO. 68

S6. Stratigraphic Problems and Solutions in the Appalachian Basin (Posters) (GSA Energy Geology Division; GSA Sedimentary Geology Division; GSA Hydrogeology Division; GSA Karst Division; Eastern Section-SEPM (Society for Sedimentary Geology))

1:30 PM, Hyatt Regency Reston, Grand Ballroom E-G

Authors will be present from 3 to 5 PM

Booth #

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| 68-1 | 25 | Behr, Rose-Anna*; Skema, Viktoras W.: A DETAILED LOOK AT THE MISSISSIPPIAN MAUCH CHUNK FORMATION, CENTRAL CLINTON COUNTY, PENNSYLVANIA |
| 68-2 | 26 | McDowell, Ronald R.*; Hunt, Paula J.; Burns, Mary Sue; Dinterman, Philip A.; Lewis, J. Eric: THE HUNTERSVILLE CHERT – WEST VIRGINIA'S GEOLOGIC “PROBLEM CHILD” |

SESSION NO. 69

T2. Wetlands in a Changing World: Impacts of Environmental Change on Wetland Function and Ecosystem Services (Posters)

1:30 PM, Hyatt Regency Reston, Grand Ballroom E-F

Authors will be present from 3 to 5 PM

Booth #

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| 69-1 | 27 | Houttuijn Bloemendaal, Lucila J.*; FitzGerald, Duncan M.; Hughes, Zoe J.; Novak, Alyssa: MARSH EDGE CHARACTERISTICS |
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CONTROLLING THE DISTRIBUTION AND TYPE OF EDGE EROSION

- 69-2 28 Moore, Caroline R.*; Evans, Sarah G.; Miller, Connor: **MEASURING THE IMPACT OF GROUNDWATER ON BOG TURTLE THERMAL HABITAT IN SOUTHERN APPALACHIAN FENS**
- 69-3 29 Glazier, Lauren*; Rayburn, John A.; Curtin, Tara M.: **FLOOD AND DROUGHT CYCLES OBSERVED IN A SEDIMENT CORE FROM THE CATHARINE CREEK WILDLIFE MANAGEMENT AREA WETLAND, WATKINS GLEN NY**
- 69-4 30 Fallon, Andrew R.*; Ouimet, William B.; Wang, Tianhua: **20TH CENTURY RECOVERY OF BEAVER DAMS, FLOODPLAIN CONNECTIVITY AND WETLAND HABITAT IN CONNECTICUT STREAMS**
- 69-5 31 Dunkelberger, Margaret S.*; Cornell, Sean R.; Joyce, Robert T.: **ANALYSIS OF LOBLOLLY PINE (PINUS TAEDA) TREE RING AND CLIMATE RECORDS OF ASSATEAGUE ISLAND AND CHINCOTEAGUE BAY REGION, VIRGINIA**
- 69-6 32 Achek, Moread*; Farmer, E. Christa; Buchbinder, Brandon; Bowen, Joyce; Darnaud, Denis; Dwyer, Sophia; Epstein, Alexander; Johnson, Anthony; Mahoney, Lauren; Maliszka, Miranda; Reardon, Avery; Renner, Faith A.; Lopez-Rodriguez, Paola; Santella, Kiley; Barbera, Phillip: **TRACE METAL ANALYSIS IN LONG ISLAND MARSH CORES**

SESSION NO. 70**T10. Provenance of the Eastern North American Margin: From Triassic Rifting to Modern Sedimentation (Posters)**

1:30 PM, Hyatt Regency Reston, Grand Ballroom E-G

Authors will be present from 3 to 5 PM

Booth #

- 70-1 33 Kepezhinskas, Nikita*; Foster, David A.; Kamenov, George D.; Kepezhinskas, Pavel: **DETRITAL ZIRCON GEOCHRONOLOGY OF METAMORPHIC AND SEDIMENTARY UNITS OF THE BAY ISLANDS, HONDURAS: IMPLICATIONS FOR SEDIMENT UNDERPLATING BY SUBDUCTION**
- 70-2 34 Torres, Coral Mari*; Truitt, Jasmine Christina; Ortega-Ariza, Diana; Barineau, Clinton I.: **100 MILLION YEAR OLD PALEODRAINAGE SYSTEMS IN WESTERN GEORGIA-EASTERN ALABAMA**

SESSION NO. 72**T20. Defining 3D Geologic Mapping in the Eastern North America (Posters)**

1:30 PM, Hyatt Regency Reston, Grand Ballroom A-D

Authors will be present from 3 to 5 PM

Booth #

- 72-1 59 Andrews, William*; Hickman, John B.; Curl, Douglas C.: **STATEWIDE THREE-DIMENSIONAL DATABASE AND MODEL AT THE KENTUCKY GEOLOGICAL SURVEY**
- 72-2 60 Kim, Jonathan J.*; Romanowicz, Edwin; Ryan, Peter; Klepeis, Keith A.; Cobb, Alexandra; Valentine, George: **PHYSICAL CHARACTERIZATION OF THE PFAS-CONTAMINATED FRACTURED ROCK AQUIFER BENEATH THE RUTLAND-SOUTHERN VERMONT REGIONAL AIRPORT**
- 72-3 61 DiGiacomo-Cohen, Mary*; Walsh, Gregory J.; Chormann, Frederick H.; Engelhart, Simon E.; Gale, Marjorie H.; Mabee,

Stephen B.; Marvinney, Robert G.; Thomas, Margaret A.: **AN INTRODUCTION TO THE NEW ENGLAND TOP OF ROCK (NE TOR) PROJECT**

- 72-4 62 Spector, Ashlyn*; Neitzke Adamo, Lauren; Miller, Kenneth G.: **DRONE TECHNOLOGY, STRUCTURE FROM MOTION, AND LIME VISUALIZATION SOFTWARE TO MAP SEDIMENTARY EXPOSURES IN THE NEWARK BASIN**
- 72-5 63 Cobb, Alexandra*; Valentine, George; Ryan, Peter; Kim, Jonathan J.: **MAPPING PFAS, MAJOR AND TRACE ELEMENTS, STABLE ISOTOPES, AND RECHARGE-AGES IN 3-DIMENSIONS IN THE FRACTURED ROCK AQUIFER BENEATH THE RUTLAND SOUTHERN VERMONT REGIONAL AIRPORT**
- 72-6 64 Edgell, Rebecca*; Rimaneli, Loukas; Witt, Hunter; Stephenson, George; Watts, Chester F.: **DIGITAL 3D MODELING OF ROCK SLOPES AT DIFFICULT SITES USING STICK-MOUNTED DRONES FOR IMAGE COLLECTION**

SESSION NO. 73**T26. Deciphering Active Tectonics and Seismic Hazard in Eastern North America (Posters)**

1:30 PM, Hyatt Regency Reston, Grand Ballroom A-D

Authors will be present from 3 to 5 PM

Booth #

- 73-1 65 Schleicher, Lisa*: **EARTHSCOPE-DERIVED SINGLE-STATION REGIONAL SITE RESPONSE CORRECTION FACTORS FOR THE ATLANTIC COASTAL PLAIN**
- 73-2 66 Larsen, Daniel*; Cox, Randal T.; Vanderlip, Christopher; Marlow, Christopher S.: **QUATERNARY FAULTING AND DEFORMATION ALONG THE SOUTHEASTERN MARGIN OF THE REELFOOT RIFT AT FORT PILLOW RIDGE, LAUDERDALE AND TIPTON COUNTIES, WESTERN TENNESSEE**
- 73-3 67 Cramer, Chris*; Van Arsdale, Roy B.; Arellano, David; Pezeshk, Shahram; Horton, Stephen P.; Weathers, Taylor Andrew; Nazemi, Nima; Tohidi, Hamed; Bhattarai, Roshan R.; Reichenbacher, Renee; Bouzeid, Karim: **SEISMIC AND LIQUEFACTION HAZARD MAPS FOR LAUDERDALE COUNTY, WESTERN TENNESSEE**
- 73-4 68 Murphy, Benjamin S.*; Liu, Lijun; Egbert, Gary D.: **GEODYNAMIC ORIGIN OF THE SOUTHEASTERN US STRESS FIELD AND LARGE-SCALE APPALACHIAN GEOMORPHOLOGY**
- 73-5 69 Cramer, Chris*; Jaume, Steven C.; Levine, Norman S.: **SEISMIC AND LIQUEFACTION HAZARD MAPS FOR THE CHARLESTON, SOUTH CAROLINA, AREA**
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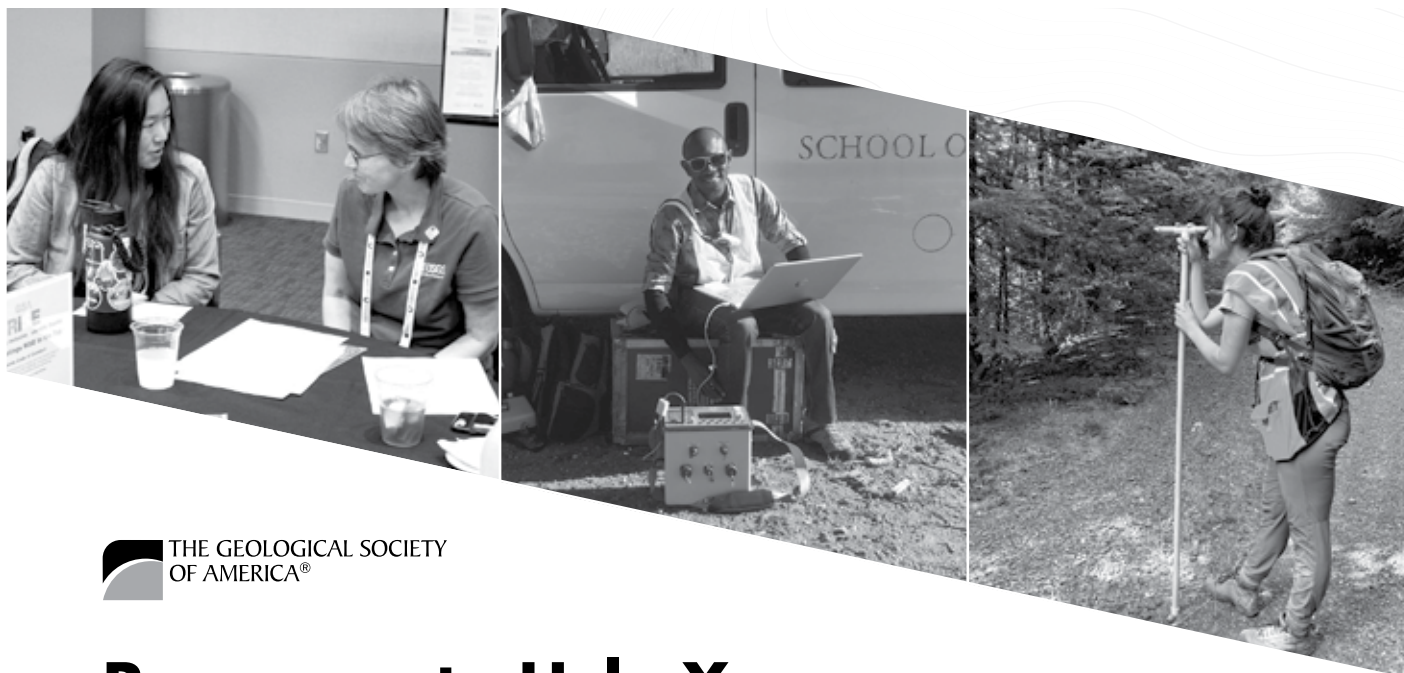
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Resources to Help You Launch Your Geoscience Career

- **Funding**—travel awards, scholarships, and research grants
- **Field Experiences**—field trips, GeoCorps America, Geoscientists -in-the-Parks, field camp scholarships
- **GeoCareers**—workshops, webinars, resume clinics, mentoring
- **Research**—journals, conferences, field forums, and meetings
- **Meetings and Networking**
- **Leadership**—Student Advisory Council, Committees

The mission of the Geological Society of America (GSA) is to advance geoscience research and discovery, service to society, stewardship of Earth, and the geosciences profession.

For more information visit the GSA Foundation booth in the exhibit hall or visit our website
www.geosociety.org/edu-career

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Events Code of Conduct



The Geological Society of America (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. GSA is committed to providing a professional environment at all of our events, welcoming people from diverse backgrounds and wide-ranging points of view. Attending GSA events is a privilege, and we expect all attendees and participants to live up to our pledge to provide Respectful, Inclusive Scientific Events (RISE).

Applicability

The Events Code of Conduct (the “Events Code”) applies to all GSA events, including meetings, field trips, short courses, mentorships, and other GSA-supported programs. The Events Code also applies to individuals who submit abstracts and make presentations at oral or poster sessions. All registrants, speakers, session chairs, guests, volunteers, exhibitors, GSA staff, service providers, and others in attendance are expected to abide by this Events Code.

In addition, GSA members, affiliate members, fellows, honorary fellows, and any non-member who participates in a GSA program or activity must comply with GSA’s Code of Ethics. GSA-sponsored programs and activities include, but are not limited to, GSA meetings, publications, honors and awards, as well as appointed, elected, and volunteer positions.

Expected Behavior – Professional Conduct at Events

- Treat others with respect and consideration.
- Be considerate, collegial, and collaborative.
- If a presenter or session chair indicates that photographs of slides or poster are not allowed, honor this preference.
- Communicate openly, with civil attitudes, critiquing ideas rather than individuals.
- Avoid personal attacks directed toward other event registrants, guests, volunteers, exhibitors, GSA staff, service providers, and all others in attendance.
- If you choose to drink when alcohol is available at GSA events, or consume other legal intoxicants, do so responsibly, safely, and without compromising your duty to act in a professional manner.
- 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.
- Pay attention to your surroundings and other participants. If you notice a dangerous situation or someone in distress, call 911 or alert facility security personnel or GSA staff/ leadership.

Expected Behavior – Abstracts, Meeting Presentations, and Photography at Meetings

The submission of an abstract implies a sincere intent to attend the meeting and present research. In addition, authors and presenters are expected to:

- Display integrity in disseminating your research.
- Adhere to the content and conclusions of abstracts, as submitted and reviewed.
- Remain gracious by offering collaborators the opportunity for recognition as a co-author.
- Make sure that listed co-authors have made a bona fide contribution to the project, are aware of their inclusion, and have accepted that recognition.
- Be diligent in preparing a polished product that conveys high quality scholarship.
- Take responsibility for choosing whether or not to allow photographs of your slides or posters and communicating your preference to the audience. (If you prefer not to allow photographs, GSA will provide you with tools to communicate your preference, e.g., no-photo image for your slides, talking points)

Unacceptable Behavior includes but is not limited to:

- Do not engage in harassment, intimidation, bullying, or discrimination in any form.
- Do not make 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 (https://www.geosociety.org/positions/pos15_Diversity.pdf).
- Do not display nudity and/or sexual images in public spaces or in presentations.
- Do not touch or make physical contact with anyone unless you know the contact is welcome.
- Do not make real or implied threats of, physical, professional or financial harm.
- Do not stalk registrants, guests, volunteers, exhibitors, GSA staff, service providers, or other attendees.
- Do not physically or verbally abuse any registrant, guest, volunteer, exhibitor, GSA staff, service provider, or other attendee.
- Do not disrupt 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.
- Do not take pictures or make audio or video recordings after a presenter or convener has communicated that such images are not allowed.
- Do not drink or use other legal intoxicants to the extent that your ability to act professionally is compromised.

Consequences of Unacceptable Behavior

- Anyone requested to stop unacceptable behavior is expected to comply immediately.
- GSA may take any action(s) deemed necessary and appropriate, including but not limited to the immediate removal from the meeting, field trip, or other event 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 experience behavior that appears to violate this policy or you have witnessed such behavior, please immediately notify anyone wearing a RISE button and/or a GSA staff member or a GSA member with a designated leadership position (i.e., GSA President, GSA Councilor, GSA Section Officer, GSA field trip leader). You also may report the behavior by emailing GSA at ethics@geosociety.org or by calling (720) 507-7523.

Recommended Procedures to be followed in an emergency situation:

- Evaluate the situation and if appropriate call 911 or activate a local fire alarm.
- If you witness a crime or behavior that constitutes an immediate or serious threat to public safety, make sure you keep yourself safe. Follow the directions of facility security, public safety personnel, or GSA staff.
- Initiate first aid based on need and your training.
- Provide as much specific information as possible (e.g., nature of incident, precise location, number of people involved) to 911 and emergency responders.

GSA Meetings
RISE to the Top



Respectful Inclusive
Scientific Events

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- ✓ $\delta^{13}\text{C}$ measured directly on the sample via IRMS
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