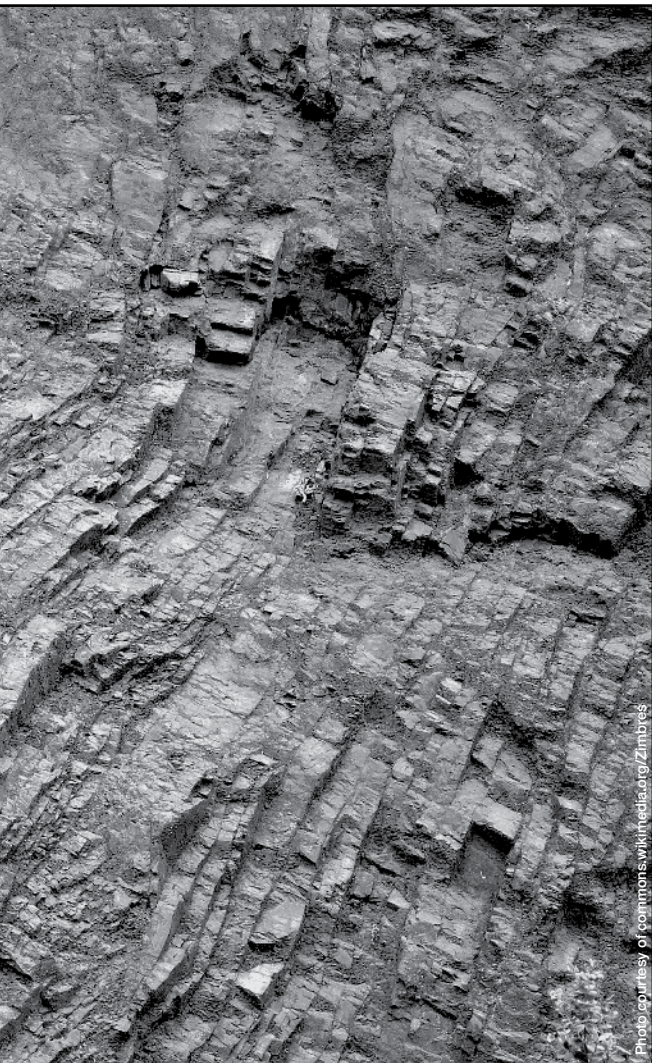


# 2019

Vol. 51,  
No. 1

# PROGRAM



## Northeastern Section Meeting

17–19 March  
Portland, Maine, USA

[www.geosociety.org/ne-mtg](http://www.geosociety.org/ne-mtg)



THE GEOLOGICAL SOCIETY  
OF AMERICA®

## SPONSORS

We are grateful to the several entities and individuals who made substantial contributions to help underwrite the costs of the meeting. Their names will be prominently displayed at the meeting. Our sponsors as of press time are:

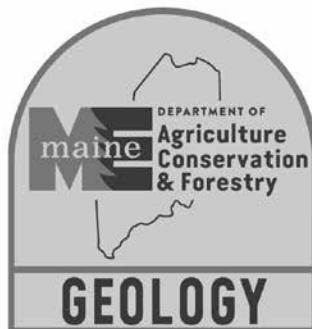
### BERYL LEVEL



### TOPAZ LEVEL



### AMYTHEST LEVEL



### LEPIDOLITE LEVEL



**FINAL PROGRAM  
FOR  
ABSTRACTS WITH PROGRAMS**

**54<sup>th</sup> Annual Meeting  
NORTHEASTERN SECTION MEETING  
GEOLOGICAL SOCIETY OF AMERICA  
17–19 MARCH 2019  
HOLIDAY INN BY THE BAY  
PORTLAND, MAINE**

**with**

**Northeast Region, Association for Women Geoscientists  
Eastern Section, Society for Sedimentary Geology  
Eastern and New England Sections, National Association  
of Geoscience Teachers  
Northeastern Section, Paleontological Society**



**Hosted By**

**Maine Geological Survey  
Maine Mineral and Gem Museum  
S.W. Cole Engineering, Inc.  
University of Maine, Farmington  
University of Maine**

## Committee for the 2019 Meeting

General Chair .....	Stephen Pollock
Technical Program Co-chairs .....	Robert Marvinney, Amber Whittaker
Exhibits .....	Irwin Novak
Field Trips .....	Myles Felch
Sponsorships .....	Clifford Lippitt
Student and Volunteer Help .....	David Gibson
Short Courses and Workshops .....	Martin Yates

## Northeastern Section GSA Officers for 2018–2019

Chair .....	Paul Tomascak
Vice Chair .....	Julie Brigham-Grette
Secretary – Treasurer .....	David West
Members at Large .....	Mark Evans, Sean Cornell
Past Chair .....	Janet Stone
Student Representative .....	Allison Severson

## NOTICE

By registering for this meeting you have acknowledged that you have read and will comply with the GSA Code of Conduct for Events (full code of conduct listed on page 37). If you have any concerns about behavior that may violate the Code, please contact:

GSA Executive Director, Vicki McConnell, [vmconnell@geosociety.org](mailto:vmconnell@geosociety.org)

GSA Ethics and Compliance Officer, Nan Stout, [gsaeventscode@gmail.com](mailto:gsaeventscode@gmail.com)

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



# General Information



The meeting is taking place at the Holiday Inn By The Bay, 88 Spring Street, Portland, Maine, 04101. The hotel is located in the Downtown area within close walking distance of numerous restaurants and bars. Also, located within an easy walk are Commercial Street and the Old Port area, the Cross Insurance Arena, the Portland Museum of Art, the Children's Museum of Maine and Merrill Auditorium home of the Portland Symphony Orchestra (see section on "Cultural and Recreational Amenities")

## Travel Directions

### By car:

Traveling northbound on the Maine Turnpike (Interstate 95) take Exit 44 onto Interstate 295. Take Exit 4 - Commercial Street. After crossing the Veteran's Memorial Bridge turn right at the stoplight onto U.S. Route 1A (Commercial Street). Proceed on Commercial Street until you reach High Street. Turn left onto High Street and proceed to Spring Street. Turn right onto Spring Street. The Holiday Inn is on your immediate right.

Traveling south on Interstate 95 take exit 48. At the light turn left onto Riverside Road. At the traffic light turn left onto Maine Route 25 (Brighton Avenue). Turn left onto Cumberland Avenue. Turn right onto State Street. Turn left onto Spring Street. The Holiday Inn is located on your right after crossing High Street.

Traveling south on Interstate 295 take Exit 7 onto U.S. Route 1A. Turn right onto Middle Street. Drive across the

intersection with Union Street. You are now on Spring Street. The Holiday Inn is on your left.

### By plane:

The Holiday Inn has a complimentary shuttle from the Portland Jetport. You can also access the Holiday Inn by taxi or by using the Portland METRO Bus Route 1 which provides service to destinations throughout the city including Portland's Waterfront, Arts District, and the Old Port. If you are renting a car, exit the Portland Jetport on International Parkway. Turn right onto Maine Route 22 (Congress Street). Turn right onto State Street. Turn left onto Spring Street. The Holiday Inn will be on your right.

### By Train:

Portland is easily reached by AMTRAK's Downeaster which has regular weekend and week day service from and to Boston and Portland. Arrival and departure is at Portland Transportation Center located at Thompson's Point in Portland. Schedules and prices are available at [amtrakdowneaster.com](http://amtrakdowneaster.com) and [amtrak.com/downeaster-train](http://amtrak.com/downeaster-train). From the Transportation center you can use the Holiday Inn's complimentary shuttle or choose a taxi or METRO Bus route 5 which provides service to destinations throughout the city including Portland's Waterfront, Arts District, and the Old Port.

### By Bus:

Concord Coach Lines has a station at the Portland Transportation Center and has stops into Portland from Logan



Airport in Boston, Massachusetts as well as service from New Hampshire and points north of Portland. Schedules and prices may be found at <https://concordcoachlines.com/stop/portland-maine/>. Or, you may call the Information Center (Toll Free) at 1-800-639-3317.

Greyhound Bus also serves Portland with its station located at 950 Congress Street in downtown Portland. Schedules and information are available at <https://locations.greyhound.com/bus-stations/us/maine/portland/bus-station-10274> or by calling (207) 772-6588

## Parking

Parking is available for guests staying at the Holiday Inn and commuters at \$5.00 per day. For those staying at the Courtyard by Marriott valet parking is \$18.00 per overnight and \$8.00 per day with unlimited in and out privileges.

Portland has a number of parking garages and parking lots. The closest garages to the Holiday Inn are the Spring Street Parking Garage located at 45 Spring Street and the Fore Street Parking Garage located 427 Fore Street. Information on other parking options may be found at <https://www.portlandmaine.gov/430/Garages-Lots>.

## Registration

Registration is required for anyone attending technical sessions, short courses, or exhibits. On-site registration is in the Holiday Inn by the Bay Lobby on the following schedule:

Saturday, 16 March 4–8:30 p.m.  
 Sunday, 17 March 7 a.m.–4:30 p.m.  
 Monday, 18 March 7 a.m.–4:30 p.m.  
 Tuesday, 19 March 7 a.m.–11:00 a.m.

## Fees

On-site registration fees are presented below.

	Full Meeting	Single Day
Professional Member.....	US\$240.....	US\$165
Professional Member 70+ .....	US\$145.....	US\$115
Professional Nonmember.....	US\$265.....	US\$200
Early Career Professional Member ...	US\$215.....	US\$180
Student member .....	US\$95.....	US\$75
Student nonmember .....	US\$105.....	US\$95
K–12 Professional .....	US\$100.....	US\$75
Guest/Spouse.....	US\$80.....	US\$75

Tickets for special events may be purchased on site if available.

Guest registration is intended for non-geoscientists accompanying a registered professional, student or K–12 professional. Guest registration does not include attendance at workshops. 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.

## Cancellations, Changes and Refunds

All requests for additions, changes, and cancellations must have been made in writing to GSA headquarters and received by 19 February 2019. There will be no refunds for cancellations received after this date.

## 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/2019NE/meetingapp.cgi>.

## Continuing Education Credits (CEU)

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

## Accommodations

We strongly encourage meeting participants to reserve rooms at The Holiday Inn by the Bay or The Courtyard by Marriott. The Holiday Inn by the Bay is the official venue of the meeting, and all conference activities take place here.

## Special Events & Activities

### Saturday, 16 March

**Town Hall Session: GSA Strategic Planning Initiative,** 5:30–6:30 p.m., Rhode Island Room. Please join GSA Executive Director Vicki McConnell for an update on GSA's Strategic Planning. This is an opportunity to interact with leadership and ask questions about the future plans for GSA.

**Welcoming Reception: NEGSA, 2019,** 6:30–8:30 p.m. Casco Bay Hall. Visit with Friends and colleagues and view exhibits. Food, one ticketed beverage and cash bar.

### Sunday, 17 March

**GSA Campus Representative Appreciation Breakfast,** 7–8:30 a.m. Somerset/Oxford Rooms (upper level). This complimentary breakfast for Campus Reps is held to say Thank You. If you are a campus representative or are interested in becoming one please plan to attend this celebratory event.

**NAGT Luncheon,** noon–1:30 p.m. Somerset/Oxford Rooms (upper level). This is a ticketed event. Professional \$24, Students \$12.

**Northeast Tectonics (NETectonics) Reception Honoring Bob Wintsch,** 5:30–6:15 p.m., Connecticut Room.

**Reception Honoring Woodrow (Woody) B. Thompson,** 5:30–6:15 p.m., Vermont Room;

**GLBTQ Reception,** 5:30–6:15 p.m., Rhode Island Room.

**Geology Club Officer Meet-Up,** 5:30–6:15 p.m., Massachusetts Room. If you are a geology club officer or are interested in starting a club on your campus plan to Meet-Up

and chat with other representatives about their activities, goals, and accomplishments.

**General Reception, 5:30–6:15 p.m.,** New Hampshire Room. Cash bar and food provided. Please plan on attending Henning Haack's talk immediately following this reception.

**NEGSA Plenary Session, 6:15–7:15 p.m.,** New Hampshire Room. *View of the Early Solar System - as told by meteorites in the collections of the Maine Mineral and Gem Museum, Bethel, Maine,* Henning Haack Associate Researcher, Maine Mineral and Gem Museum, Bethel, Maine.

### **Monday, 18 March**

**Association of Women Scientists (AWG) Networking Breakfast, 7–8:30 a.m.,** Somerset/Oxford Rooms (upper level). This informal breakfast provides opportunities for students and professionals in academia, government and industry to meet and to learn more about AWG. Both AWG members and nonmembers are welcome. Fee: Professionals: US\$22; Students: US\$12. *The reduced cost of the student breakfast is through the generous support of the Association of Women Geoscientists Foundation.*

**Northeastern Section Management Board Meeting,** noon–1:30 p.m., York Room.

**Eastern Section of the Society for Sedimentary Geology (ES-SEPM) Keynote Address, 5:30–7 p.m.,** Rhode Island Room. *Geoconservation: Preserving Classic Outcrops, Resources, and Accessibility,* Dr. Marjory Chan, University of Utah. This is a non-ticketed event. A reception will immediately precede the keynote address.

**Map Blast! 7:30–9 p.m.,** Casco Bay Hall. Begun in Portland in 1998, this annual event invites all meeting attendees to post and informally discuss newly published, and in progress geologic maps/digital images of all sorts. No abstract submission is required.

### **Tuesday, 19 March**

**Northeastern Paleontological Society Luncheon,** noon–1:30 p.m. York Room, This is a ticketed event. Professional \$24, Students \$12. Join colleagues for lunch and conversation. Contact: Judith Nagel-Myers, Dept. Geology, St. Lawrence University, Canton NY.

### **Student Opportunities**

**John Mann Mentors Program in Applied Hydrogeology.** Sunday, 17 March; noon–1:30 p.m. in the Casco Bay Hall. The John Mann Mentors Program, cosponsored by Poland Spring and the GSA Foundation, presents students and early career professionals with an interest in hydrogeology an opportunity to interact with practicing hydrogeological professionals. Mentors and attendees can discuss career opportunities in the various sub-fields of hydrogeology. Space is limited to 100 on a first-come, first-served basis. Lunch is included.

**Roy J. Shlemon Mentors Program in Applied Geoscience.** Monday, 18 March; noon–1:30 p.m. in the Casco Bay Hall. The Shlemon Mentors Program, cosponsored by the GSA Foundation, extends the mentoring reach of individual pro-

fessionals from the fields of applied geology to students and early career professionals attending GSA Section Meetings. Mentors and attendees discuss real-life issues, including professional opportunities and the challenges that await students entering the work force. Space is limited to 100 on a first-come, first-served basis. Lunch is included.

### **GSA Career Workshops**

For more information about GSA's Career Workshops, please contact Jennifer Nocerino at [jnocerino@geosociety.org](mailto:jnocerino@geosociety.org).

**Geoscience Career Workshop Part 1: Career Planning and Informational Interviewing.** Sunday, 17 March, 8–9 a.m. Lincoln Room (upper level). Your job hunting process should begin with career planning, not when you apply to jobs. This workshop will help you begin this process and will introduce you to informational interviewing. This section is highly recommended for freshman, sophomores and juniors. The earlier you start your career planning the better.

**Geoscience Career Workshop Part 2: Geoscience Career Exploration.** Sunday, 17 March, 9–10 a.m. Lincoln Room (upper level). What do geologists in various sectors earn? What do they do? What are the pros and cons to working in academia, government, and industry? Workshop presenters and professionals in the field will address these issues.

**Geoscience Career Workshop Part 3: Cover Letters, Résumés and CV's.** Sunday, 17 March, 10–11 a.m., Lincoln Room (upper level). How do you prepare a cover letter? Does your résumé need a good edit? Whether you are currently on the job market or not, learn how to prepare the best résumé possible. You will review numerous examples to help you learn important résumé do's and don'ts.

**Student Volunteers—Work opportunities may earn free registration.** Students interested in volunteering must contact Dr. David Gibson, [dgibson@maine.edu](mailto:dgibson@maine.edu).

### **Exhibits**

Exhibits are located in the Casco Bay Hall in the hotel's lower level.

Set up: Saturday, 16 March, 8 a.m.–5 p.m.

Open: Saturday, 16 March, 6:30 p.m.–8:30 p.m.

Open: Sunday, 17 March, 9 a.m.–5 p.m.

Open: Monday, 18 March, 9 a.m.–5 p.m.

Open: Tuesday, 19 March, 9 a.m.–11:30 a.m.

Tear down: Tuesday, 19 March, noon–4 p.m.

### **Exhibitors (as of late December)**

2020 Southeastern/Northeastern Joint Meeting  
AIPG

Alpha Analytical

American Museum of Natural History

ASBOG

Boston College, Dept. of Earth & Envir. Sciences

Gems and Crystals Unlimited

Geological Society of America

GSA Foundation



Geological Society of Maine  
 Fjallraven & Brunton Outdoor  
 International Appalachian Trail -Maine Chapter  
 Maine Geological Survey  
 Maine Mineral and Gem Museum  
 Nestle Waters North America - Poland Spring Water  
 NY State Geological Association  
 Queens College  
 The Olde Geologist  
 University of Pittsburgh at Johnstown  
 West Chester University, Dept. of Earth & Space Sciences  
 Wolfden Resources Corp.

## Cultural and Recreational Amenities

*Ventriloquism?* Are you a **JEFF DUNHAM** fan? Arrive, early on Friday, 15 March, and come see Jeff, Achmed and his other little friends at the Cross Insurance Arena at 7 p.m. The Cross Insurance Arena is just a short walk from the Holiday Inn. <https://www.jeffdunham.com/>; [www.arenaportland.com](http://www.arenaportland.com).

*Portland Symphony Orchestra.* On Saturday, 16 March, 7:30 p.m. and again on Sunday 17 March, 2:30 p.m. “*PSO Pops: The Hot Sardines*” If you like classic jazz with a twist then have a beer at the ice breaker then walk from the Holiday Inn to the Merrill auditorium for the evening concert. If you decide to skip a Sunday afternoon session or two, just be sure to be back in time for Sunday evening festivities! [https://portlandsymphony.org/event\\_series/the-hot-sardines/](https://portlandsymphony.org/event_series/the-hot-sardines/); <https://hotsardines.com/>.

*Ice Hockey Fan?* Portland’s own Maine Mariners vs. Newfoundland on Sunday, 17 March, 3 p.m. in the Cross Insurance Arena, just a short walk from the Holiday Inn. If you belong to GAC-MAC, or just enjoy ice hockey cheer your team! <https://marinersofmaine.com/>, [www.arenaportland.com](http://www.arenaportland.com).

*Portland Museum of Art.* The museum is located on Free Street directly across from the Holiday Inn. Come and enjoy the current exhibit “*Relational Undercurrents: Contemporary Art of the Caribbean Archipelago*”. Also, plan to study Pierre-August Renoir’s noted master piece “*Confidences*”, plus view works by Winslow Homer and other noted artists. <https://www.portlandmuseum.org/>.

*Bringing children?* The Children’s Museum of Maine is located at 142 Free Street, approximately 1 block from the Holiday Inn. For information please see [www.kitetails.org](http://www.kitetails.org); or call 207 828 1234; [info@kitetails.org](mailto:info@kitetails.org).

*Birding Opportunities.* Birders bring your bins! Portland harbor is just a short walk from the Holiday Inn. Even in March the fish pier is a regular spot for Iceland and Glaucous Gulls along with other wintering waterfowl. Bird your way home along the Maine coast from Portland to Kittery stopping at Portland Head Light, Two Lights State Park and Dyer Point, Biddeford Pool, Marginal Way and the Cliff House both in Ogunquit, and Fort Foster in Kittery. Just a few of the possibilities are three species of scoters, Common Eider, King Eider, Harlequin Duck, Purple Sandpiper, Great Cormorant, Razorbill, Thick Billed Murre and Black Guillemot. Check

your ebird account for Cumberland and York counties for the latest updates on sightings.

*Shopping or Need an Outfitter?* In addition to the Commercial Street and Old Port shopping area, Maine has three premier outfitters all within reach of Portland. L.L. Bean in Freeport is approximately 15 miles north of Portland on Interstate 295. In addition to L.L. Bean, Freeport boasts a large number of outlet stores, enough to satisfy the most discriminating shopper. Cabela’s/Bass Pro Shops is approximately 7 miles south of Portland immediately adjacent to exit 42 of the Maine turnpike. If you are driving from points south, the Kittery Trading Post established in 1938 is another stop for all of your needs. It is located along Route 1 with quick access to the Maine Turnpike and Interstate 95. Kittery also has a large number of outlet stores.

## The Meeting’s Technical Program

The Meeting’s Technical Program consists of Theme and Discipline Sessions arranged in oral and poster sessions as described below. The Technical Program begins at 8 a.m. and ends at 5:30 p.m. on Sunday, 17 March, and Monday, 18 March. On Tuesday, 19 March it begins at 8 a.m. and ends at noon.

## 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.

## The Speaker Ready Room - Kennebec Room (upper level)

All oral session presenters must visit the Speaker Ready Room in the Kennebec Room (upper level) 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:

Saturday, 16 March 4–8:30 p.m.  
 Sunday, 17 March 7 a.m.–6 p.m.  
 Monday, 18 March 7 a.m.–6 p.m.  
 Tuesday, 19 March 7–10 a.m.

Each speaker must bring a PowerPoint or PDF presentation on a USB compatible flash drive (a.k.a. thumb drive or memory stick) or a CD-ROM disk to the Speaker Ready Room for checking and uploading to the correct session folder according to the deadlines below:



<b>For Presentations On</b>	<b>Upload No Later Than</b>
Sunday, 17 March, AM	8:30 p.m., Saturday, 16 March
Sunday, 17 March, PM	10 a.m., Sunday, 17 March
Monday, 18 March, AM	5 p.m., Sunday, 17 March
Monday, 18 March, PM	10 a.m., Monday, 18 March
Tuesday, 19 March, AM	5 p.m., Monday, 18 March

## Session Chair Orientations

Each Session Chair is requested to attend a 15-minute "Session Chairs Orientation" held in the Massachusetts Room 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

All Poster Sessions are in the Casco Bay Hall on the hotel's lower level. Poster presenters have one 4' x 8' horizontal (landscape) poster display surface. Please check the program for specific times and topics. Numbers on these display surfaces correspond to the poster booth numbers listed in the Program. The poster boards accept push pins, and some pins are furnished for each poster.

## Technical Program Sessions

Plenary Session. Sunday, 6:15–7:15 p.m., New Hampshire Room. *View of the Early Solar System - as told by meteorites in the collections of the Maine Mineral and Gem Museum, Bethel, Maine.* Henning Haack, Maine Mineral and Gem Museum, Bethel, Maine.

Keynote Address, Eastern Section of the Society for Sedimentary Geology (ES-SEPM) Monday, 18 March; 5:30–7 p.m., Rhode Island Room. *Geoconservation: Preserving Classic Outcrops, Resources, and Accessibility.* Marjory Chan, University of Utah, Logan, Utah.

## Symposia

S1. Geology, Structure, Geochronology, and Tectonics in Southern New England II: An Eclectic Session in Honor of Robert P. Wintsch.

S2. Late Wisconsinan Deglaciation of Northern New England and Adjacent Canada: A Session to Honor the Career and Contributions of Woodrow (Woody) B. Thompson.

## Theme Sessions

T1. The Formation and Evolution of Iceland: Magmatic, Tectonic, and Geomorphological Processes

T2. Beyond Sustainability: The Anthropocene as a Paradigm for Thinking about Earth across Disciplines

T3. Intertwining Earth Science Issues with the Nature of Science

T4. Best Practices in Geoscience Education

T5. New Perspectives on Mineral Resources of the Northeast

T6. Groundwater and Surface Water Hydrology in the Northeastern United States

T7. Private Wells—Current Challenges and Opportunities

T8. Soils: Processes at the Bio-Geo Interface

T10. Regional Advances in Seafloor Mapping and Benthic Habitat Classification

T11. Current Research in Coastal and Marine Processes

T12. Floods: Past, Present, and Future

T13. River Corridor Processes and Related Decision Making

T14. Lake Sediments as Archives of Environmental Change

T15. Reconstructing Past Climate from the Geologic Record of Ice Sheets and Mountain Glaciers

T16. Insights on the Ongoing Dynamics of Northeastern North America from Geology and Geophysics

T18. Peri-Gondwanan Terranes and Their Origins: What Do We Really Know?

T19. Detrital Mineral Constraints on Appalachian-Caledonide Tectonics

T20. Geology of the Grenville Orogeny and Adirondack Mountains

T23. Simulation, Visualization, and Statistical Tools for Environmental Data Analysis

T24. Geoarchaeology: Investigations and Techniques

T25. The Roles of Geochronology and Geochemistry of Granitoid Plutons in Deciphering Orogenic Events

T26. Innovations in LA-ICP-MS in the Earth Sciences (Posters)

## SHORT COURSES

SC1. **Drone and Ground-Based Structure from Motion and Ortho-Imagery Surveys for Geological Mapping.** Friday, 15 March, 9 a.m.–5 p.m., Somerset/Oxford Rooms (upper level). Seth Campbell, University of Maine, scampb64@maine.edu, Nick Whiteman, University of Maine, nicholaswhiteman.nrw@gmail.com.

SC2. **Ground-Penetrating Radar Theory and Applications to Geological Mapping.** Saturday, 16 March, 9 a.m.–5 p.m., Somerset/Oxford Rooms (upper level). Seth Campbell, University of Maine, scampb64@maine.edu, and Steve Arcone, Dartmouth College and ERDC-CRREL, steven.a.arcone@dartmouth.edu.

**SC3. Introduction to Python Scripting for Data Analysis.** Saturday, 16 March, 9 a.m.–5 p.m., Cumberland Room (upper level). Andrew Reeve, University of Maine, [asreeve@maine.edu](mailto:asreeve@maine.edu).

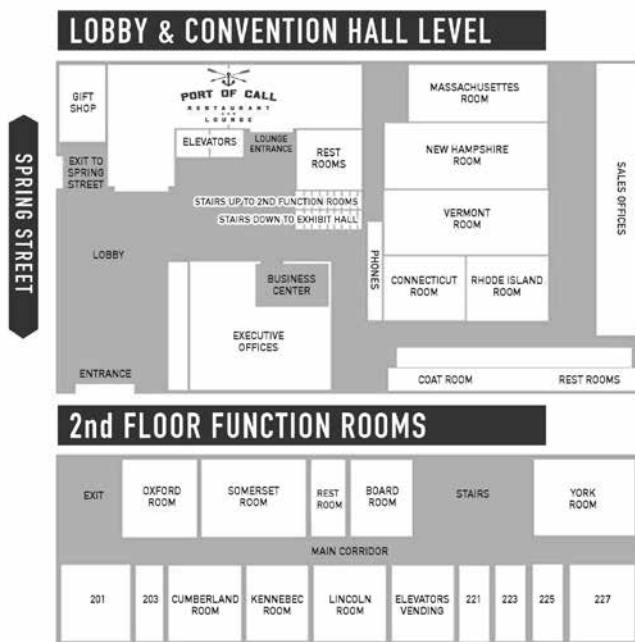
**SC4. Innovations in LA-ICP-MS in the Earth Sciences.** Saturday, 16 March, 9 a.m.–5 p.m. This workshop will take place at the Holiday Inn by the Bay in Portland, ME. The workshop is hosted by the new MAGIC Lab (MicroAnalytical Geochemistry and Isotope Characterization Laboratory) at the University of Maine. The purpose of this workshop is to promote internal and external use of the new laser ablation facility at UMaine, inform users of the capabilities of LA-ICP-QQQ-MS, train users in ICP-MS best practices, and foster collaborations between institutions. A keynote lecture will be given by Chris MacFarlane of the University of New Brunswick, and other activities will include both lecture and practical sessions. Travel and lodging assistance is available for workshop participants, thanks to support from NSF (please contact [alicia.cruzuribe@maine.edu](mailto:alicia.cruzuribe@maine.edu) to apply). Coffee breaks and lunch on Saturday will be provided.

## Field Trips

**FT2. Landslides in the Presumpscot Formation.** Saturday, 16 March, 9 a.m.–5 p.m. Gather at hotel lobby at the Holiday Inn by the Bay, 88 Spring Street, Portland, ME, at 9 a.m., Saturday, 16 March 2019. Parking is available at the hotel and the Spring Street Parking garage (45 Spring Street). After a brief introduction, the trip will depart promptly at 9:20 AM. Lindsay Spigel, Maine Geological Survey, [Lindsay.Spigel@maine.gov](mailto:Lindsay.Spigel@maine.gov). Participants will need to bring food and beverages and dress for the weather conditions. The trip will be run regardless of the amount of snow cover and stops may vary depending upon the weather on 16 March.

## Post Meeting Field Trip

**Iceland: The Formation and Evolution of a Young, Dynamic, Volcanic Island.** Wednesday, 3 July through Sunday, 14 July 2019. Brennan Jordan, University of South Dakota, [brennan.jordan@usd.edu](mailto:brennan.jordan@usd.edu), Tenley Banik, Illinois State University, [tjbanik@ilstu.edu](mailto:tjbanik@ilstu.edu); Tamara Carley, Lafayette College, [carleyt@lafayette.edu](mailto:carleyt@lafayette.edu). Additional details at [geosociety.org](http://geosociety.org).



# Schedule of Events

EVENT	TIME	LOCATION
<b>FRIDAY, 15 MARCH</b>		
SC1. Drone and Ground-Based Structure from Motion and Ortho-Imagery Surveys for Geological Mapping (Short Course)	9 a.m.–5 p.m.	Somerset/Oxford Rooms (upper level)
<b>SATURDAY, 16 MARCH</b>		
Exhibits Set-up	8 a.m.–5 p.m.	Casco Bay Hall
FT2. Landslides in the Presumpscot Formation (Field Trip)	9 a.m.–5 p.m.	Lobby
SC2. Ground-Penetrating Radar Theory and Applications to Geological Mapping (Short Course)	9 a.m.–5 p.m.	Somerset/Oxford Rooms (upper level)
SC3. Introduction to Python Scripting for Data Analysis (Short Course)	9 a.m.–5 p.m.	Cumberland Room (upper level)
SC4. Innovations in LA-ICP-MS in the Earth Sciences (Short Course)	9 a.m.–5 p.m.	Lincoln Room (upper level)
Registration Open	4–8:30 p.m.	Lobby
Speaker Ready Room	4–8:30 p.m.	Kennebec Room (upper level)
Town Hall Session: GSA Strategic Planning Initiative	5:30–6:30 p.m.	Rhode Island Room
Exhibits Open	6:30–8:30 p.m.	Casco Bay Hall
<b>Welcoming Reception NEGSA, 2019</b>	6:30–8:30 p.m.	Casco Bay Hall
<b>SUNDAY, 17 MARCH</b>		
Session Chair Orientation	7–7:15 a.m.	Massachusetts Room
GSA Campus Representative Appreciation Breakfast	7–8:30 a.m.	Somerset/Oxford Rooms (upper level)
Registration Open	7 a.m.–4:30 p.m.	Lobby
Speaker Ready Room	7 a.m.–6 p.m.	Somerset Room (upper level)
Geoscience Career Workshop Part 1: Career Planning and Informational Interviewing	8–9 a.m.	Lincoln Room (upper level)
Geoscience Career Workshop Part 2: Geoscience Career Exploration	9–10 a.m.	Lincoln Room (upper level)
Exhibits Open	9 a.m.–5 p.m.	Casco Bay Hall
Geoscience Career Workshop Part 3: Cover Letters, Resumes and CV's	10–11 a.m.	Lincoln Room (upper level)

EVENT	TIME	LOCATION
<b>Morning Oral Technical Sessions</b>		
T4. Best Practices in Geoscience Education	8–9:50 a.m.	Connecticut Room
S1. Geology, Structure, Geochronology, and Tectonics in Southern New England I: An Eclectic Session in Honor of Robert P. Wintsch	8 a.m.–noon	New Hampshire Room
T5. New Perspectives on Mineral Resources of the Northeast	8 a.m.–noon	Rhode Island Room
T11. Current Research in Coastal and Marine Processes	8 a.m.–noon	Vermont Room
T14. Lake Sediments as Archives of Environmental Change	8 a.m.–noon	Massachusetts Room
T3. Intertwining Earth Science Issues with the Nature of Science	10:00 am–noon	Connecticut Room
<b>Morning Poster Sessions:</b>		
D7. Paleoclimate (Posters)	8 a.m.–noon	Casco Bay Hall
S2. Late Wisconsinan Deglaciation of Northern New England and Adjacent Canada: A Session to Honor the Career and Contributions of Woodrow (Woody) B. Thompson (Posters)	8 a.m.–noon	Casco Bay Hall
T6. Groundwater and Surface Water Hydrology in the Northeastern United States (Posters)	8 a.m.–noon	Casco Bay Hall
T7. Private Wells—Current Challenges and Opportunities (Posters)	8 a.m.–noon	Casco Bay Hall
T8. Soils: Processes at the Bio-Geo Interface (Posters)	8 a.m.–noon	Casco Bay Hall
John Mann Mentors Program in Applied Hydrogeology	noon–1:30 p.m.	Casco Bay Hall
NAGT Luncheon	noon–1:30 p.m.	Somerset/Oxford Rooms (upper level)
<b>Afternoon Oral Technical Sessions</b>		
S1. Geology, Structure, Geochronology, and Tectonics in Southern New England II: An Eclectic Session in Honor of Robert P. Wintsch	1:30–5:30 p.m.	New Hampshire Room
S2. Late Wisconsinan Deglaciation of Northern New England and Adjacent Canada: A Session to Honor the Career and Contributions of Woodrow (Woody) B. Thompson	1:30–5:30 p.m.	Vermont Room
T8. Soils: Processes at the Bio-Geo Interface	1:30–5:30 p.m.	Connecticut Room
T24. Geoarchaeology: Investigations and Techniques	1:30–5:30 p.m.	Rhode Island Room
T25. The Roles of Geochronology and Geochemistry of Granitoid Plutons in Deciphering Orogenic Events	3–5:30 p.m.	Massachusetts Room
<b>Afternoon Poster Sessions:</b>		
D5. Geoscience Education (Posters)	1:30–5:30 p.m.	Casco Bay Hall
T4. Best Practices in Geoscience Education (Posters)	1:30–5:30 p.m.	Casco Bay Hall
T11. Current Research in Coastal and Marine Processes (Posters)	1:30–5:30 p.m.	Casco Bay Hall
T14. Lake Sediments as Archives of Environmental Change (Posters)	1:30–5:30 p.m.	Casco Bay Hall
T26. Innovations in LA-ICP-MS in the Earth Sciences (Posters)	1:30–5:30 p.m.	Casco Bay Hall
General Reception for the Honorees and GSA Affiliates	5:30–6:15 p.m.	New Hampshire Room
Geology Club Officer Meet-Up	5:30–6:15 p.m.	Massachusetts Room

EVENT	TIME	LOCATION
GLBTQ Reception	5:30–6:15 p.m.	Rhode Island Room
Northeast Tectonics (NETectonics) Reception Honoring Bob Wintsch	5:30–6:15 p.m.	Connecticut Room
Reception Honoring Woodrow (Woody) B. Thompson	5:30–6:15 p.m.	Vermont Room
NE GSA Plenary Session	6:15–7:15 p.m.	New Hampshire Room

### MONDAY, 18 MARCH

Session Chair Orientation	7–7:15 a.m.	Massachusetts Room
Registration Open	7 a.m.–4:30 p.m.	Lobby
Speaker Ready Room	7 a.m.–6 p.m.	Kennebec Room (upper level)
Association of Women Scientists (AWG) Networking Breakfast (Ticketed Event)	7–8:30 a.m.	Somerset/Oxford Rooms (upper level)

#### Morning Oral Technical Sessions

D1. A Cross-Disciplinary Approach to Investigating Tectonics - Integrating Field, Laboratory, and Experimental Techniques	8 a.m.–noon	Massachusetts Room
T1. The Formation and Evolution of Iceland: Magmatic, Tectonic, and Geomorphological Processes	8 a.m.–noon	Rhode Island Room
T7. Private Wells—Current Challenges and Opportunities	8 a.m.–noon	New Hampshire Room
T13. River Corridor Processes and Related Decision Making I	8 a.m.–noon	Connecticut Room
T18. Peri-Gondwanan Terranes and Their Origins: What Do We Really Know?	8 a.m.–noon	Vermont Room

#### Morning Poster Sessions:

D2. Environmental Geology & Geochemistry (Posters)	8 a.m.–noon	Casco Bay Hall
D3. GeoHeritage (Posters)	8 a.m.–noon	Casco Bay Hall
D9. Geoarcheology (Posters)	8 a.m.–noon	Casco Bay Hall
S1. Geology, Structure, Geochronology, and Tectonics in Southern New England: An Eclectic Session in Honor of Robert P. Wintsch (Posters)	8 a.m.–noon	Casco Bay Hall
T5. New Perspectives on Mineral Resources of the Northeast (Posters)	8 a.m.–noon	Casco Bay Hall
T19. Detrital Mineral Constraints on Appalachian-Caledonide Tectonics (Posters)	8 a.m.–noon	Casco Bay Hall
T20. Geology of the Grenville Orogeny and Adirondack Mountains (Posters)	8 a.m.–noon	Casco Bay Hall

Northeastern Section Management Board Meeting	noon–1:30 p.m.	York Room (upper level)
Roy J. Shlemon Mentors Program in Applied Geoscience	noon–1:30 p.m.	Casco Bay Hall

#### Afternoon Oral Technical Sessions

T6. Groundwater and Surface Water Hydrology in the Northeastern United States	1:30–5:30 p.m.	Massachusetts Room
---	----------------	--------------------

EVENT	TIME	LOCATION
T10. Regional Advances in Seafloor Mapping and Benthic Habitat Classification	1:30–5:30 p.m.	Rhode Island Room
T13. River Corridor Processes and Related Decision Making II	1:30–5:30 p.m.	Connecticut Room
T15. Reconstructing Past Climate from the Geologic Record of Ice Sheets and Mountain Glaciers	1:30–5:30 p.m.	New Hampshire Room
T16. Insights on the Ongoing Dynamics of Northeastern North America from Geology and Geophysics	1:30–5:30 p.m.	Vermont Room

#### Afternoon Poster Sessions:

T1. The Formation and Evolution of Iceland: Magmatic, Tectonic, and Geomorphological Processes (Posters)	1:30–5:25 p.m.	Casco Bay Hall
D1. A Cross-Disciplinary Approach to Investigating Tectonics I - Integrating Field, Laboratory, and Experimental Techniques (Posters)	1:30–5:30 p.m.	Casco Bay Hall
D1. A Cross-Disciplinary Approach to Investigating Tectonics II - Integrating Field, Laboratory, and Experimental Techniques (Posters)	1:30–5:30 p.m.	Casco Bay Hall
D4. Geomorphology (Posters)	1:30–5:30 p.m.	Casco Bay Hall
T12. Floods: Past, Present, and Future (Posters)	1:30–5:30 p.m.	Casco Bay Hall

Eastern Section of the Society for Sedimentary Geology (ES-SEPM) Keynote Address	5:30–7 p.m.	Rhode Island Room
Map Blast!	7:30–9 p.m.	Casco Bay Hall

### TUESDAY, 19 MARCH

Session Chair Orientation	7–7:15 a.m.	Massachusetts Room
Speaker Ready Room	7–10 a.m.	Kennebec Room (upper level)
Registration Open	7–11 a.m.	Lobby
Exhibits Open	9–11:30 a.m.	Casco Bay Hall

#### Morning Oral Technical Sessions

T2. Beyond Sustainability: The Anthropocene as a Paradigm for Thinking about Earth across Disciplines	8 a.m.–noon	Rhode Island Room
T12. Floods: Past, Present, and Future	8 a.m.–noon	New Hampshire Room
T19. Detrital Mineral Constraints on Appalachian-Caledonide Tectonics	8 a.m.–noon	Massachusetts Room
T20. Geology of the Grenville Orogeny and Adirondack Mountains	8 a.m.–noon	Vermont Room
T23. Simulation, Visualization, and Statistical Tools for Environmental Data Analysis	8 a.m.–noon	Connecticut Room

#### Morning Poster Sessions:

D6. Igneous Petrology (Posters)	8 a.m.–noon	Casco Bay Hall
D8. Paleontology & Paleoecology (Posters)	8 a.m.–noon	Casco Bay Hall
T13. River Corridor Processes and Related Decision Making (Posters)	8 a.m.–noon	Casco Bay Hall

<b>EVENT</b>	<b>TIME</b>	<b>LOCATION</b>
T15. Reconstructing Past Climate from the Geologic Record of Ice Sheets and Mountain Glaciers (Posters)	8 a.m.–noon	Casco Bay Hall
T16. Insights on the Ongoing Dynamics of Northeastern North America from Geology and Geophysics (Posters)	8 a.m.–noon	Casco Bay Hall
T18. Peri-Gondwanan Terranes and Their Origins: What Do We Really Know? (Posters)	8 a.m.–noon	Casco Bay Hall
Exhibits Tear Down	noon–4 p.m.	Casco Bay Hall
Northeastern Paleontological Society Luncheon (Ticketed Event)	noon–1:30 p.m.	York Room (upper level)



# Technical Sessions

Meeting policy prohibits the use of cameras or sound-recording equipment at technical sessions and poster sessions.



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

## NOTICE

In the interest of public information, the Geological Society of America provides a forum for the presentation of diverse opinions and positions. The opinions (views) expressed by speakers and exhibitors at these sessions are their own and do not necessarily represent the views or policies of the Geological Society of America.



## NOTE INDEX SYSTEM

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

\*denotes speaker

## SUNDAY, 17 MARCH 2019

### MORNING ORAL TECHNICAL SESSIONS

#### SESSION NO. 1

##### ***S1. Geology, Structure, Geochronology, and Tectonics in Southern New England I: An Eclectic Session in Honor of Robert P. Wintsch***

8:00 AM, Holiday Inn - Portland by the Bay, New Hampshire Room

Greg J. Walsh, John N. Aleinikoff and Ryan J. McAleer, Presiding

- |     |         |   |
|-----|---------|---|
|     | 8:00 AM | <b>INTRODUCTORY REMARKS</b>   |
| 1-1 | 8:05 AM | Dietsch, Craig*; Martinez, Francisco J.; Neale, Shannon: <b>PLUTONIC HARRISON GNEISS AND SISCOWIT GRANITE IN THE STAMFORD AND POUND RIDGE 7.5 MINUTE QUADRANGLES, SOUTHWESTERN CONNECTICUT, PRESERVE IGNEOUS FLOW FABRICS, INTRUDE ALREADY-FOLIATED COUNTRY ROCKS, AND WERE ISOCLINALLY FOLDED, ALL UNDER HIGH-T CONDITIONS</b> |
| 1-2 | 8:25 AM | Burton, William C.*; McAleer, Ryan J.; Devlin, William; Belkin, Harvey E.: <b>EARLY SILURIAN IGNEOUS U-PB ZIRCON AGES IN COVER ROCKS CONSTRAIN TIMING OF TECTONIC EVENTS WEST OF THE WATERBURY DOME, CT</b>   |
| 1-3 | 8:45 AM | Wintsch, R.P.; Devlin, W.J.*; Lee, Shinae: <b>EARLY PALEOZOIC ROCKS OF THE ROWE-HAWLEY AND DOME BELTS OF WESTERN CT: STRATIGRAPHIC INSIGHTS AND ISSUES ARISING FROM DETRITAL ZIRCON DATA</b>  |
| 1-4 | 9:05 AM | Deasy, Ryan T.*; Wintsch, R.: <b>IDENTIFICATION OF MULTIPLE STAGES OF DEFORMATION IN THE DEEP RIVER QUADRANGLE, CONNECTICUT USA</b>   |
| 1-5 | 9:25 AM | Olsen, Paul E.*; Whiteside, Jessica H.; Steinen, Randolph P.; Kinney, Sean T.: <b>NEW CORES RESOLVE AN OLD GEOCHRONOLOGICAL CONUNDRUM FOR THE CENTRAL ATLANTIC MAGMATIC PROVINCE (CAMP) EXTRUSIVE ZONE IN THE NEWARK, HARTFORD, AND DEERFIELD BASINS</b>  |
| 1-6 | 9:45 AM | Stewart, E.M.*: <b>LOOK AT YOUR ROCK: USING DETAILED PETROGRAPHY TO GROUNDTRUTH THERMODYNAMIC</b>   |

#### **MODELING IN THE WEPAWAUG SCHIST, THE MIDDLETOWN FORMATION, AND BEYOND**

- |      |          |   |
|------|----------|---|
|      | 10:05 AM | <b>BREAK</b>  |
| 1-7  | 10:15 AM | Walsh, Gregory J.*; Aleinikoff, John N.; Wintsch, Robert P.; Ayuso, Robert A.: <b>AGE AND TECTONIC SETTING OF THE QUINEBAUG-MARLBORO BELT, SOUTHEASTERN NEW ENGLAND</b>   |
| 1-8  | 10:35 AM | Bothner, Wallace A.*; Frazer, Ryan E.; Ramezani, J.; Dorais, Michael J.: <b>RYE ON THE SHOALS - NEW AGES, REMAINING QUESTIONS</b>   |
| 1-9  | 10:55 AM | Kunk, Michael J.*; Horton, J. Wright; McAleer, Ryan J.: <b><sup>40</sup>AR/<sup>39</sup>AR DATING CONSTRAINTS ON THE AGE AND COOLING HISTORY OF PRE-CRETACEOUS BASEMENT ROCKS BENEATH THE MID-ATLANTIC COASTAL PLAIN OF MARYLAND AND VIRGINIA</b> |
| 1-10 | 11:15 AM | McAleer, Ryan J.*; Merschat, Arthur: <b>REACTION SOFTENING AND THE AGE OF THE BLUE RIDGE THRUST: #STRUCTURALPETROLOGY</b>   |
| 1-11 | 11:35 AM | Merschat, Arthur*; Walsh, Gregory J.; McAleer, Ryan J.: <b>THE FALL MOUNTAIN NAPPE: A POSSIBLE ACADIAN D, MAP-SCALE SHEATH FOLD IN THE BRONSON HILL ANTICLINORIUM, SOUTHWEST NEW HAMPSHIRE</b>  |
|      | 11:55 AM | <b>DISCUSSION</b>   |

#### SESSION NO. 2

##### ***T4. Best Practices in Geoscience Education (GSA Energy Geology Division; GSA Soils and Soil Processes Division)***

8:00 AM, Holiday Inn - Portland by the Bay, Connecticut Room

Tarin Weiss and Lori Weeden, Presiding

- |     |         |  |
|-----|---------|--|
|     | 8:00 AM | <b>INTRODUCTORY REMARKS</b>  |
| 2-1 | 8:10 AM | Chan, Marjorie A.*; Beno, Carl J.; Lippert, Peter C.; Cerling, Thure E.: <b>MELDING ACCESSIBLE GEOLOGY AND ART FOR EDUCATION AND INSPIRATION</b> |
| 2-2 | 8:30 AM | Weeden, Lori*: <b>RE-IMAGINING GEOLOGY FOR ENGINEERS BY INCORPORATING CASE STUDIES TO DEMONSTRATE CONTEXT</b>                                    |

- 2-3 8:50 AM Farrell, Anna\*; Poland, Ruth; Hall, Sarah R.; Disney, Jane; Stanton, Bruce: **MONITORING WELL WATER FOR ARSENIC ON MT. DESERT ISLAND: ENGAGING HIGH SCHOOL AND COLLEGE STUDENTS IN INTERDISCIPLINARY AND SOCIETALLY RELEVANT WORK**
- 2-4 9:10 AM Hluchy, Michele M.\*: **ACTIVITIES TO HELP FIRST YEAR STUDENTS RELATE TO WATER ISSUES**
- 2-5 9:30 AM Whisner, Jennifer\*; Almer, Heather; Stephens, Mark; Corbin, Nancy; Hartzell, Brittney; Whisner, S. Christopher: **COLUMBIA COUNTY WATER EDUCATION DAY: EARTH SCIENCE EDUCATION AND OUTREACH, 500 STUDENTS AT A TIME**

### SESSION NO. 3

#### ***T5. New Perspectives on Mineral Resources of the Northeast (GSA Continental Scientific Drilling Division; GSA Energy Geology Division)***

8:00 AM, Holiday Inn - Portland by the Bay, Rhode Island Room

John F. Slack and Martin G. Yates, Presiding

- 8:00 AM **INTRODUCTORY REMARKS**
- 3-1 8:10 AM Slack, John F.\*: **METALLIC MINERAL DEPOSITS OF NEW ENGLAND: HISTORICAL OVERVIEW, KNOWN DEPOSITS, AND POTENTIAL UNDISCOVERED RESOURCES**
- 3-2 8:40 AM McCormick, Michael J.\*; Wang, Chunzeng; Yates, Martin G.; Cruz-Urbe, Alicia M.; Hoy, Donald; Lentz, David R.: **PRELIMINARY LITHOLOGICAL AND LITHOGEOCHEMICAL ANALYSIS OF THE PICKETT MOUNTAIN VMS DEPOSIT, MAINE**
- 3-3 9:00 AM Simmons, William B.\*; Falster, Alexander U.; Nizamoff, James; Freeman, Gary: **NEW PEGMATITE LITHIUM PROSPECT IN OXFORD CO., MAINE**
- 9:20 AM **BREAK**
- 3-4 9:35 AM Webber, Karen L.\*; Simmons, William B.; Falster, Alexander U.: **A NEW MODEL FOR THE FORMATION OF THE GEM-BEARING PEGMATITES IN OXFORD, CO., WESTERN MAINE**
- 3-5 9:55 AM Falster, Alexander U.; Simmons, William B.; Spiegel, Jonathan\*: **UNUSUAL URANIUM AND REE MINERALIZATION IN AN AREA BETWEEN THE HAYES AND OUTBACK PEGMATITES, NOYES MOUNTAIN, GREENWOOD, OXFORD CO., MAINE**
- 3-6 10:15 AM Honsberger, Ian W.\*; Bleeker, Wouter; Sandeman, H.; Evans, Dave: **STRUCTURALLY CONTROLLED GOLD: COMPARING AND CONTRASTING 0.4 GA CENTRAL NEWFOUNDLAND AND 2.7 GA ABITIBI GREENSTONE BELT**
- 3-7 10:35 AM Taylor, Ryan D.\*; Shah, Anjana K.; Walsh, Gregory J.: **IRON OXIDE-APATITE WASTE PILES AS UNCONVENTIONAL RARE EARTH ELEMENT RESOURCES IN THE EASTERN ADIRONDACK HIGHLANDS, NEW YORK**
- 10:55 AM **DISCUSSION**
- 11:05 AM **CONCLUDING REMARKS**

### SESSION NO. 4

#### ***T11. Current Research in Coastal and Marine Processes***

8:00 AM, Holiday Inn - Portland by the Bay, Vermont Room

Mark Borrelli and Bryan A. Oakley, Presiding

- 4-1 8:00 AM Oakley, Bryan A.\*: **DISTRIBUTION AND MORPHOLOGY OF SORTED BEDFORMS ALONG THE RHODE ISLAND SOUTH SHORE WITH IMPLICATIONS ON PROCESSES AND PERSISTENCE**
- 4-2 8:20 AM Slovinsky, Peter A.; Dickson, Stephen M.\*; Rickerich, Sam F.; Claesson, Stefan; Kraun, Benjamin: **FROM THE DUNES TO THE DEPTHS: IMAGING MAINE'S BEACHES TO UNDERSTAND SEDIMENT MOVEMENT AND FURTHER BEACH RESILIENCY**
- 4-3 8:40 AM Borrelli, Mark\*; Smith, Theresa L.; Legare, Bryan; McFarland, Samantha; McCormack, Bryan: **THE SHORELINE IS NOT**

#### **THE STORYLINE: VARIABILITY IN ONSHORE AND OFFSHORE COASTAL SEDIMENT TRANSPORT**

- 4-4 9:00 AM Alexander, Jane\*; Avila Sanchez, Jennifer: **STATEN ISLAND BEACH MORPHOLOGY - IMPLICATIONS FOR SHORELINE RESPONSE TO STORM EVENTS**
- 4-5 9:20 AM Smith, Theresa L.\*; Borrelli, Mark: **ACQUISITION OF ACOUSTIC DATA IN HIGHLY ENERGETIC, TIDE-DOMINATED COASTAL LAGOONS OFF CAPE COD, MA: MAPPING THE SEAFLOOR SWATH BY SWATH**
- 9:40 AM **BREAK**
- 4-6 9:55 AM Whiteman, Nicholas R.\*: **A YEAR IN THE LIFE OF A COASTAL BLUFF: SEASONAL INFLUENCES ON BLUFF EROSION OBSERVED WHILE TESTING THE APPLICATION OF STRUCTURE FROM MOTION PHOTOGRAMMETRY IN CASCO BAY, ME**
- 4-7 10:15 AM McFarland, Samantha\*; Borrelli, Mark: **UAS-BASED QUANTIFICATION OF POST-STORM GEOMORPHIC CHANGE TO A NATURAL BEACH-DUNE SYSTEM**
- 4-8 10:35 AM Varney, Madeline R.\*; Oakley, Bryan A.: **EVALUATION OF HISTORIC SHORELINE CHANGE AND SPIT MIGRATION (1939-2018): NAPATREE LAGOON, WATCH HILL, RHODE ISLAND**
- 4-9 10:55 AM Krezdorn, Kyle Matthew\*; Oakley, Adrienne J.; Cornell, Sean R.; Milinic, Bojan; Silveira Meyers, Joao: **INVESTIGATING ENVIRONMENTAL CHANGES IN SWAN COVE POOL, CHINCOTEAGUE NATIONAL WILDLIFE REFUGE, ASSATEAGUE ISLAND, VA, IN RESPONSE TO BARRIER ISLAND ROLLOVER, OVERWASH, AND REFUGE MANAGEMENT**
- 4-10 11:15 AM Ogata Bernstein, Jake\*; Marengo, Pedro J.; Barber, Donald C.: **RELIABILITY OF COMMON CARBONATE ISOLATION TECHNIQUES AND SUBSEQUENT FIDELITY OF STABLE CARBON ISOTOPE SIGNATURES**

### SESSION NO. 5

#### ***T14. Lake Sediments as Archives of Environmental Change (GSA Continental Scientific Drilling Division; GSA Geology and Society Division)***

8:00 AM, Holiday Inn - Portland by the Bay, Massachusetts Room

Kevin M. Spiegel, Presiding

- 8:00 AM **INTRODUCTORY REMARKS**
- 5-1 8:05 AM Magdon, Irene\*; Grigg, Laurie D.: **A HOLOCENE PALEOPRODUCTIVITY RECONSTRUCTION OF TWIN PONDS, VERMONT**
- 5-2 8:25 AM Chen, Christine Y.\*; Woods, Arielle; Hatfield, Rob; McGee, David; Edwards, Lawrence; Valero-Garces, Blas Lorenzo; Stoner, Joseph; Weidhaas, Nicholas; Tal, Irit; Tapia, Pedro; Bush, Mark; Abbott, Mark B.; Rodbell, Donald T.: **ESTABLISHING ROBUST LAKE SEDIMENT CHRONOLOGIES: LESSONS FROM U/TH DATING THE LONG LAKE SEDIMENT RECORD FROM LAKE JUNIN, PERU**
- 5-3 8:45 AM Tiff, William\*: **SCALES OF INFLUENCE: MULTI-PROXY INDICATORS OF HIGH INTENSITY PRECIPITATION EVENTS IN NEW HAMPSHIRE LAKES**
- 5-4 9:05 AM Rodbell, Donald T.\*; Woods, Arielle; Chen, Christine Y.; Hatfield, Rob; Lehmann, Sophie B.; Abbott, Mark B.; McGee, David; Stoner, Joseph S.: **A CONTINUOUS RECORD OF GLACIAL-INTERGLACIAL CYCLES SPANNING MORE THAN 700 KYR FROM LAKE JUNÍN, PERÚ**
- 9:25 AM **BREAK**
- 5-5 9:40 AM Zhao, Boyang\*; Castañeda, Isla S.; Bradley, Raymond S.; Salacup, Jeffrey M.: **"MODERN COOLING" SIGNAL FROM LAKE SEDIMENTS AND POSSIBLE CAUSES**
- 5-6 10:00 AM LeNoir, James\*; Snyder, Noah P.; Cook, Timothy L.: **POST-GLACIAL SEDIMENTATION IN OSSIPEE LAKE, NEW HAMPSHIRE**

- 5-7 10:20 AM Spigel, Kevin M.\*: **A MULTI-PROXY STUDY OF ENVIRONMENTAL CHANGE IN ACADIA NATIONAL PARK, MAINE**
- 10:40 AM **DISCUSSION AND FOLLOW-UP CONVERSATION ON ALL PRESENTATIONS**
- 11:10 AM **TIPS FOR TEACHING/RESEARCH USING LAKE SEDIMENTS**
- 11:40 AM **CONCLUDING REMARKS**

**SESSION NO. 6****T3. Intertwining Earth Science Issues with the Nature of Science**

10:00 AM, Holiday Inn - Portland by the Bay, Connecticut Room

Patricia M. Millette and Daniel Frost, Presiding

- 6-1 10:00 AM Millette, Patricia M.\*: **HOW DO CULTURAL AND SOCIETAL INFLUENCES AFFECT THE ADVANCEMENT OF SCIENCE?**
- 6-2 10:30 AM Roemmele, Christopher\*: **NESTA AND MELS: GOING BEYOND THE CONTROVERSY: PROMOTING CRITIQUE, EVALUATION, AND ARGUMENT IN EARTH SCIENCE**
- 6-3 11:00 AM Rowley, Nicholas\*; Millette, Patricia: **OUTSIDE INFLUENCES: AN ACTIVITY TO TEACH THE NOS CONCEPT OF BIAS IN SCIENCE**
- 6-4 11:30 AM Gilbert, Lisa A.\*: **BEYOND CAUSE-AND-EFFECT: TEACHING STUDENTS TO THINK IN SYSTEMS**

## MORNING POSTER TECHNICAL SESSIONS

**SESSION NO. 7****D7. Paleoclimate (Posters)**

8:00 AM, Holiday Inn - Portland by the Bay, Casco Bay Hall

Authors will be present from 9 to 11 AM

Booth #

- 7-1 1 Bookwala, Kamal\*; Lawrence, Kira T.; Gorbey, Devon; Woodard, Stella C.: **A COMPARISON OF RESULTS FROM U<sup>K</sup><sub>37</sub> AND MG/CA PALEOTHERMOMETERS IN THE NORTH ATLANTIC OCEAN DURING THE PLIOCENE (2.7-3.4 MA)**
- 7-2 2 Henry, Emilie A.\*; Lawrence, Kira T.; Peterson, Laura C.: **EXPLORING THE CONSISTENCY OF ALKENONE AND FAUNAL-BASED SEA SURFACE TEMPERATURE RECONSTRUCTIONS FROM THE SOUTHWEST PACIFIC DURING THE PLEISTOCENE**
- 7-3 3 Chormann, Alaina G.\*; Gillikin, David P.; Thatcher, Diana L.; Wanamaker, Alan D.; Polyak, Victor J.; Asmerom, Yemane: **CALIBRATING HYDROCLIMATE PROXIES IN A SOUTHERN PORTUGUESE SPELEOTHEM**
- 7-4 4 Iervolino, Ashley; Andronikides, Alex\*; Pekar, Stephen F.: **LATE MIOCENE (10.4-7.8 MA) PALEOCEANOGRAPHIC CHANGES ON THE CONTINENT OF ZEALANDIA USING STABLE ISOTOPE RECORDS FROM IODP SITE U1508**
- 7-5 5 Belanger, Bryce K.\*; Amidon, William H.; Laabs, Benjamin; Munroe, Jeffrey S.: **MODELING CLIMATE CONSTRAINTS ON THE FORMATION OF PLUVIAL LAKE BONNEVILLE IN THE GREAT BASIN, USA**
- 7-6 6 Wigger, Natalie E.\*; D'Ambrosia, Abigail R.: **USING PALEOSOL CARBONATE TO LOCATE THE EARLY EOCENE H2 HYPERHERMAL IN A MCCULLOUGH PEAKS FOSSIL LOCALITY, BIGHORN BASIN, WYOMING**
- 7-7 7 Degen, Austin\*; Biskup, Ksawery J.; Griffiths, Michael L.; DaSilva, Michael; Enache, Mihaela; Potapova, Marina; Desianti, Nina; Tunstead, Rob; Steinmann, David: **A 4000-YEAR ENVIRONMENTAL EVALUATION OF MID-ATLANTIC COASTAL WETLANDS FROM PAIRED GEOCHEMICAL AND DIATOM ANALYSIS OF SURFICIAL AND DOWN-CORE SEDIMENTS**
- 7-8 8 Knyfd, Kaytlynn\*; Degen, Austin; Nixon, Troy; Harris, Jonathan; Davi, Nicole; Griffiths, Michael L.; Raphael, Jordan; Forrester, Jodi A.:

TRACING STORMS AND CLIMATE CHANGE THROUGH TREE-RING GROWTH PATTERNS ON COASTAL MARITIME FORESTS IN NY AND NJ

**SESSION NO. 8****S2. Late Wisconsinan Deglaciation of Northern New England and Adjacent Canada: A Session to Honor the Career and Contributions of Woodrow (Woody) B. Thompson (Posters)**

8:00 AM, Holiday Inn - Portland by the Bay, Casco Bay Hall

Authors will be present from 9 to 11 AM

Booth #

- 8-1 9 Braun, Duane D.\*: **VARIABLE MORaine SPACING ON MOUNT DESERT ISLAND MAINE, MOUNTAIN BUTTRESSING OF THE ICE FRONT AND/OR REGIONAL SLOWING OF RETREAT DUE TO CLIMATE COOLING?**
- 8-2 10 Griggs, Carol B.\*; Kromer, Bernd: **AN UPDATE AND CONFIRMATION OF AN ADJUSTED MARINE RESERVOIR EFFECT FROM COEVAL MARINE AND TERRESTRIAL RADIOCARBON DATA FROM THE LATE-GLACIAL PERIOD IN PORTLAND, MAINE**
- 8-3 11 Haslam, Sylvie M.\*; Fernandez, Alejandra M.: **ORIGINS OF BEDROCK AND SEDIMENT DEPOSITS IN FLINT WOODS, FARMINGTON, MAINE**
- 8-4 12 Blauss, Joseph\*; Hanson, Lindley S.; Hubeny, J. Bradford: **GEOPHYSICAL INVESTIGATIONS OF THE COLD RIVER VALLEY, SOUTH ACWORTH, NH**
- 8-5 13 Newton, Robert M.\*; Thompson, Woodrow B.: **CLAY MINERALOGY OF A SAPROLITE DEPOSIT NEAR LANCASTER, NEW HAMPSHIRE**
- 8-6 14 Quesnell, Timothy J.\*; Piasecki, Frank; Knapp, Samuel A.; Van Horn, Ryan M.; Wright, Stephen F.: **SURFICIAL GEOLOGIC MAP AND CROSS-SECTIONS OF RICHMOND, VERMONT**
- 8-7 15 Dunn, Richard K.\*; Springston, George E.; Rogers, Kurt; Loeffler, Adam: **LACUSTRINE DEPOSITION IN THE ICE-PROXIMAL ENVIRONMENT DURING GLACIAL ADVANCE, A MODEL FROM CENTRAL VERMONT**
- 8-8 16 Gordon, Charles\*; Franzi, David A.: **HIGH-RESOLUTION MAPPING OF PROGLACIAL LAKE AND MARINE WATER BODIES IN THE CHAMPLAIN AND ST. LAWRENCE LOWLANDS USING LIDAR ELEVATION AND HILLSHADE MODELS**
- 8-9 17 Heyer, Mark\*; Franzi, David A.: **REASSESSING THE SURFICIAL GEOLOGY AND DEGLACIAL CHRONOLOGY OF THE LOWER SARANAC VALLEY, NORTHEASTERN NEW YORK USING HIGH-RESOLUTION LIDAR ELEVATION AND HILLSHADE MODELS**
- 8-10 18 Bruce, Charles\*; Franzi, David A.: **LATE PLEISTOCENE LACUSTRINE, MARINE AND FLUVIAL TERRACES IN THE AUSABLE RIVER VALLEY, NORTHEASTERN NEW YORK**
- 8-11 19 Sobel, Ilana B.\*; Rec, Abigail F.; Principato, Sarah M.: **COMPARISON OF PERIGLACIAL BLOCK FIELDS AND TALUS SLOPES IN SOUTH CENTRAL PENNSYLVANIA AND NORTHERN MARYLAND**
- 8-12 20 Swisher, Sierra E.\*; Peck, John A.: **A POLLEN RECORD OF THE YOUNGER DRYAS FROM THE SEDIMENTS OF SILVER LAKE, SUMMIT COUNTY, OHIO**

**SESSION NO. 9****T6. Groundwater and Surface Water Hydrology in the Northeastern United States (Posters) (GSA Continental Scientific Drilling Division; GSA Hydrogeology Division; GSA Geology and Society Division)**

8:00 AM, Holiday Inn - Portland by the Bay, Casco Bay Hall

Authors will be present from 9 to 11 AM

Booth #

- 9-1 21 Bierly, Aaron D.\*: **BEDROCK LITHOLOGIC AND STRATIGRAPHIC INFLUENCES ON THE WATER QUALITY OF SPRINGS IN CAMERON AND MCKEAN COUNTIES, PENNSYLVANIA**
- 9-2 22 Woltner, Katie E.\*: **BEDROCK GEOLOGY IN NORTHERN KEENE, NH AND HOW IT RELATES TO GROUNDWATER QUALITY**

- 9-3 23 Zubaydov, Murodjon\*; Rddad, Larbi; Herman, Greg: **CONSTRAINING THE SOURCE OF BORON THAT LOCALLY CONTAMINATES THE GROUNDWATER IN THE NEWARK BASIN, NEW JERSEY**
- 9-4 24 Russo, Nicholas\*: **HYDROGEOLOGY OF SLIPPERY ROCK UNIVERSITY**
- 9-5 25 Abbott, Henry W.\*; Evans, Mark A.; Oyewumi, Oluyinka: **CHARACTERIZING AND MONITORING A HIGHLY PRODUCTIVE AQUIFER IN A TEACHING WELL FIELD ON THE CENTRAL CONNECTICUT STATE UNIVERSITY'S MAIN CAMPUS**
- 9-6 26 Gibson, Sahra\*; Löwgren, Sara; Hall, Sarah R.; Smith, Sean M.C.: **GEOMORPHIC MAP OF KEBO BROOK WATERSHED: IDENTIFYING CHARACTERISTIC CHANNEL GEOMETRY AND CHANNEL HEAD LOCATIONS FOR A SMALL POST-GLACIAL COASTAL NEW ENGLAND WATERSHED**
- 9-7 27 Bhajan, Liam\*; Hon, Rudi; Besancon, James; Dillon, Peter: **COMPARISON OF STREAMFLOWS IN THE SOUTH COASTAL BASIN SE MASSACHUSETTS**
- 9-8 28 Fennelly, Patrick E.\*; Lowry, Christopher; Glose, Thomas J.: **IMPROVING ESTIMATES OF STREAMBED WETTED PERIMETER FROM UAV: A SYSTEM FOR THE REMOTE QUANTIFICATION OF STREAM DISCHARGE**
- 9-9 29 Scheer, Austin\*: **GROUND WATER DISCHARGE INTO SILVER CREEK, ONEONTA, NY**
- 9-10 30 Besancon, James\*; Hon, Rudolph; Battifarano, Oriana K.: **VARIATIONS IN ELEMENT RATIOS HELP DISTINGUISH THE EFFECTS OF DILUTION BY MIXING OF INFLUENT GROUNDWATER FROM THE ADDITION OF DEICING CHEMICALS**
- 9-11 31 Hollister, Kayla V.\*; Thomas, Elizabeth K.; Lowry, Christopher: **TRACKING STABLE ISOTOPES IN GROUNDWATER, STREAM WATER, AND PRECIPITATION SAMPLES IN WESTERN NEW YORK TO UNDERSTAND THE TRANSFER OF HARMFUL NUTRIENTS TO LAKE ERIE**
- 9-12 32 Barrett, Lauren\*; Grimm, Lucas; Venn, Cynthia; Hallen, Christopher P.: **INITIAL GEOCHEMICAL ASSESSMENT OF SHANERBURG RUN, WORLDS END STATE PARK, SULLIVAN COUNTY, PA**
- 9-13 33 Grimm, Lucas\*; Barrett, Lauren; Venn, Cynthia; Hallen, Christopher P.: **WATER QUALITY ANALYSIS OF DOUBLE RUN DRAINAGE, INCLUDING MINERAL SPRING, AT WORLD'S END STATE PARK (SULLIVAN COUNTY), PA**
- 9-14 34 Gallardo García Freire, Patricio\*; Henkel, Brian; Hall, Sarah R.: **PAST, PRESENT, AND FUTURE OF THE COLLEGE OF THE ATLANTIC STREAM: A SMALL COASTAL WATERSHED ASSESSMENT**
- 9-15 35 Fredrick, Kyle C.\*: **STREAM RESPONSE TO CHANGING WEATHER PATTERNS IN SOUTHWESTERN PENNSYLVANIA**

## SESSION NO. 10

**T7. Private Wells—Current Challenges and Opportunities (Posters)**  
(GSA Continental Scientific Drilling Division; GSA Hydrogeology Division; GSA Geology and Society Division)

8:00 AM, Holiday Inn - Portland by the Bay, Casco Bay Hall

Authors will be present from 9 to 11 AM

Booth #

- 10-1 36 Moroz, Gabriela\*; Aragón Oreggo, Maria Fé; Löwgren, Sara; Hall, Sarah R.; Farrell, Anna; Disney, Jane; Stanton, Bruce: **IS THERE A CORRELATION BETWEEN THE LOCATION OF GEOLOGIC STRUCTURES AND PRIVATE WELL WATER CHEMISTRY: A VIEW FROM NORTHERN MT. DESERT ISLAND**
- 10-2 37 Dowe, Colin\*; Gale, Marjorie: **A GEOSPATIAL APPROACH TO IMPROVE SUBSURFACE INFORMATION IN VERMONT**
- 10-3 38 Bute, Sophia\*; Hollocher, Kurt; Frey, Holli M.: **AN OPEN-ENDED PROGRAM TO ANALYZE DRINKING WATER: PUBLIC SERVICE, EDUCATION, AND RESEARCH OUTREACH USING SPARE ANALYTICAL INSTRUMENT TIME**

- 10-4 39 Ordnung, Ryan\*; Robbins, Gary; Maas, Kendra: **COMPARISONS OF BACTERIAL COMMUNITIES AND ANALYSIS OF GEOCHEMICAL CONDITIONS IN CHLORIDE IMPACTED FRACTURED BEDROCK WELLS**

## SESSION NO. 11

**T8. Soils: Processes at the Bio-Geo Interface (Posters)**  
(GSA Continental Scientific Drilling Division; GSA Soils and Soil Processes Division)

8:00 AM, Holiday Inn - Portland by the Bay, Casco Bay Hall

Authors will be present from 9 to 11 AM

Booth #

- 11-1 40 Fitzgerald, Eliza J.\*; Richardson, Justin B.: **THE INFLUENCE OF MICROBIAL COMMUNITIES AND SECONDARY OXIDES ON MANGANESE CARBONATE AND AMPHIBOLITE WEATHERING**
- 11-2 41 Joseph, Melissa\*; Savidge, Sabrina; Whisner, Jennifer; Ricker, M.C.: **IMPACTS OF JAPANESE KNOTWEED (*FALLOPIA JAPONICA*) AT KOCHER PARK, COLUMBIA COUNTY, PA**
- 11-3 42 Flint, Juliana M.\*; Alldred, Mary; Spindler, Rich: **PREDICTING NITROGEN REMOVAL IN AGRICULTURAL WETLAND BUFFERS USING TRAITS OF THE PLANT COMMUNITY**
- 11-4 43 Marek, Rudolph S.\*; Richardson, Justin B.: **INVESTIGATING GEOLOGIC CONTROLS ON ECOPHYSIOLOGY AND NUTRIENT CYCLING IN THE FORESTS OF NEW ENGLAND**
- 11-5 44 Braithwaite, Brendan Robert\*; Richardson, Justin B.: **RETENTION OF TRACE METALS IN URBAN FORESTS AND SOILS NEAR MUNICIPAL WASTE INCINERATION FACILITIES IN NORTHEASTERN U.S.**
- 11-6 45 Stansfield, Billy\*; Ouimet, William B.: **HISTORY, MAPPING, AND PHYSICAL PROPERTIES OF 18TH – 19TH CENTURY RELICT CHARCOAL HEARTHES IN EASTERN CONNECTICUT**
- 11-7 46 Flannery, Kelly E.\*; Ouimet, William B.; Egan-Anderson, Eli; Vitale, Sarah A.: **EXAMINING THE EFFECTS OF 18TH-19TH CENTURY CHARCOAL PRODUCTION ON SOIL-WATER REPELLENCY IN NORTHWESTERN, CONNECTICUT**
- 11-8 47 Nichols, Floyd\*; Berke, Melissa A.; O'Connor, Keith; Ziolkowski, Lori A.: **DETERMINING MICROBIAL COMMUNITY SHIFTS WITH ALTITUDE FROM THE ACTIVE LAYER OF PERMAFROST REGIONS IN ALASKA**
- 11-9 48 Chowdhury, Shafiq H.; Hege, Arianna\*: **SOIL INFILTRATION STUDY TO MINIMIZE THE IMPACT OF IRRIGATION ON WATER QUALITY AND TO MAXIMIZE WATER CONSERVATION**
- 11-10 49 Grannan, Lawrence Lloyd\*; Jayawickreme, Dushmantha H.: **THE IMPACT OF LAND USE PRACTICE AND HISTORY ON THE PHYSICAL AND HYDROLOGIC PROPERTIES OF SOME CONNECTICUT SOILS**

## AFTERNOON ORAL TECHNICAL SESSIONS

## SESSION NO. 12

**S1. Geology, Structure, Geochronology, and Tectonics in Southern New England II: An Eclectic Session in Honor of Robert P. Wintsch**

1:30 PM, Holiday Inn - Portland by the Bay, New Hampshire Room

Greg J. Walsh, John N. Aleinikoff and Ryan J. McAleer, Presiding

- 12-1 1:30 PM Gilotti, Jane A.\*; McClelland, Bill; Coble, Matthew: **U-PB TITANITE DATES CORROBORATE VERY SLOW EXHUMATION OF THE NORTH-EAST GREENLAND ULTRAHIGH-PRESSURE TERRANE FROM THE CALEDONIAN OROGEN**
- 12-2 1:50 PM Kuiper, Yvette D.\*; Michard, André; Ruellan, Etienne; Holm-Denoma, Christopher S.; Crowley, James L.: **U-PB ZIRCON AND MONAZITE RESULTS FROM GRANITE AND CHARNOKITE FROM THE MAZAGAN ESCARPMENT, OFFSHORE MOROCCO**

- 12-3** 2:10 PM Jacobi, Robert D.\*; Mathur, Ryan; Douds, Ashley S.B.; Starr, Joel; Schweigel, Tayler; Warner, Travis B.; Willan, Christopher G.; Eckert, Craig: **U-PB CALCITE VEIN AGES AND THE CASE FOR ACADIAN STRUCTURAL DEVELOPMENT IN THE APPALACHIAN BASIN**
- 12-4** 2:30 PM van Staal, Cees R.\*; Zagorevski, Alexandre: **CORRELATION OF TACONIC ARC ACCRETIONS FROM NEWFOUNDLAND TO NEW ENGLAND: CONTINUOUS OR DISCONTINUOUS?**
- 12-5** 2:50 PM Ludman, Allan\*: **A SUPPLEMENTAL WINTSCH I.R.A. (INTRIGUING RETIREMENT ACTIVITIES)**
- 12-6** 3:10 PM Wintsch, R.P.\*; Aleinikoff, John N.; McAleer, Ryan J.; Walsh, Greg J.: **DETRITAL ZIRCONS: INTERPRETING AGES THAT ARE MISSING**

**SESSION NO. 13****S2. Late Wisconsin Deglaciation of Northern New England and Adjacent Canada: A Session to Honor the Career and Contributions of Woodrow (Woody) B. Thompson**

1:30 PM, Holiday Inn - Portland by the Bay, Vermont Room

Brian K. Fowler, P. Thompson Davis and Harold W. Borns, Presiding

- 13-1** 1:30 PM Anderson, Walter A.\*: **WOODROW B. THOMPSON: A MAINE YANKEE IN THE REALM OF THE ICE AGE**
- 13-2** 1:50 PM Hooke, Roger LeB.\*: **WOODY THOMPSON'S LEGACY: HIS SOLUTIONS RAISE NEW PROBLEMS**
- 13-3** 2:10 PM Braun, Duane D.\*; Thompson, Woodrow B.; Davis, P. Thompson; Shakun, Jeremy D.; Bierman, Paul R.; Corbett, Lee B.: **CORRELATION OF THE EASTERN MAINE PINEO RIDGE SYSTEM TO MORAINES ON MOUNT DESERT ISLAND THROUGH LIDAR IMAGERY AND 10BE SURFACE EXPOSURE AGES**
- 13-4** 2:30 PM Halsted, Christopher T.\*; Shakun, Jeremy D.; Corbett, Lee B.; Bierman, Paul R.; Davis, P. Thompson; Koester, Alexandria J.; Caffee, Marc W.: **DETERMINING THE TIMING AND RATE OF SOUTHEASTERN LAURENTIDE ICE SHEET THINNING USING *IN-SITU* COSMOGENIC <sup>10</sup>BE**
- 13-5** 2:50 PM Fowler, Brian K.\*; Davis, P. Thompson; Shakun, Jeremy D.; Bierman, Paul R.; Corbett, Lee B.; Mattison, Peter; Mattison, Rebecca: **A NEW COSMOGENIC EXPOSURE AGE FOR EMPLACEMENT OF NEW HAMPSHIRE'S MADISON BOULDER, REPUTEDLY THE LARGEST ERRATIC IN NORTH AMERICA**
- 13-6** 3:10 PM Newton, Robert M.\*: **EVIDENCE FOR NORTHEAST FLOWING ICE IN THE LEE OF THE SANDWICH RANGE, NEW HAMPSHIRE**
- 13-7** 3:30 PM Wright, Stephen F.\*: **LATERAL RECESSIONAL MORAINES IN THE GREEN MOUNTAINS OF NORTHERN VERMONT**
- 13-8** 3:50 PM Moss, Cheryl Johnson\*: **"RE-MAPPING" HARLEM'S GLACIAL LAKE IN NORTHERN NEW YORK CITY, NY**
- 13-9** 4:10 PM Fleisher, P. Jay\*: **HOW TO RECOGNIZE A DEAD ICE SINK (DIS): NOT YOUR ORDINARY STAGNANT ICE ENVIRONMENT**
- 13-10** 4:30 PM Dineen, Robert J.\*: **GLACIAL LAKE WARRENSBURG IN THE HUDSON AND SCHROON RIVER VALLEYS, ADIRONDACK UPLANDS, NEW YORK STATE**
- 13-11** 4:50 PM Karig, Daniel E.\*: **A CONTRARIAN VIEW OF THE VALLEY HEADS READVANCE**
- 13-12** 5:10 PM Young, Richard A.\*: **A LATE WISCONSIN GLACIAL ADVANCE 43 KM SOUTH OF LAKE ONTARIO IN WESTERN NY NEAR THE BÖLLING-ALLEROD/YOUNGER DRYAS TRANSITION: THE CASE FOR A PARTIALLY GROUNDED ICE-SHELF MODEL ASSOCIATED WITH GLACIAL LAKE IROQUOIS**

**SESSION NO. 14****T8. Soils: Processes at the Bio-Geo Interface (GSA Continental Scientific Drilling Division; GSA Soils and Soil Processes Division)**

1:30 PM, Holiday Inn - Portland by the Bay, Connecticut Room

Zsuzsanna Balogh-Brunstad, Dawn Cardace and Amanda Albright Olsen, Presiding

- 14-1** 1:30 PM Callanan, Jennifer R.; Scott, Jeremy\*; Harris, Jonathan; Wizner, Ryan; Pope, Gregory; Hazen, Matthew: **TWO YEAR PROGRESSION OF SOIL CHEMICAL CHANGES AS A RESULT OF THE 16 MILE FIRE, DELAWARE STATE FOREST, PA**
- 14-2** 1:50 PM Tompkins, Makayla M.\*; Tetreault, Troy N.; Alldred, Mary: **WETLANDS AS PERMANENT CARBON SINKS IN A FIRE-DEPENDENT ECOSYSTEM**
- 14-3** 2:10 PM Cardace, Dawn\*: **METABOLIC POTENTIALS IN SOILS DERIVED FROM ULTRAMAFIC BEDROCK**
- 14-4** 2:30 PM Balogh-Brunstad, Zsuzsanna\*: **MICA-FUNGI INTERFACE: A MESH BAG STUDY IN SPRUCE FOREST SOILS**
- 14-5** 2:50 PM Nathan, Rebecca\*; Balogh-Brunstad, Zsuzsanna: **QUANTIFYING SOIL DEVELOPMENT IN HEMLOCK DOMINATED FORESTS**
- 14-6** 3:10 PM Richardson, Justin B.\*: **MANGANESE UPTAKE BY NORTHERN HARDWOODS ON MN-CARBONATE RICH MINE-TAILINGS – A GEOCHEMICAL CONUNDRUM IN WESTERN MASSACHUSETTS**
- 14-7** 3:30 PM Olsen, Amanda Albright\*: **VARIATIONS IN CHEMISTRY AND HMICROBIAL COMMUNITY STRUCTURE IN A NATURALLY ACIDIC MAINE STREAM**
- 14-8** 3:50 PM Spatola, Sofia\*; Thornburg, Jesse D.; Song, Boyoung; Cushman, Elizabeth M.: **IDENTIFICATION AND CLASSIFICATION OF A PRESERVED PALEOSOL FROM THE HUNTLEY MOUNTAIN FORMATION IN PENNSYLVANIA**
- 14-9** 4:10 PM Bobik, Theodore R.\*; Thornburg, Jesse D.; Song, Boyoung; Sparacio, Christopher A.; Davis, Timothy: **CLAY MINERALOGY AND BULK GEOCHEMISTRY OF UPPER ORDOVICIAN JUNIATA FORMATION PALEOSOLS AT POTTERS MILLS, PA**
- 14-10** 4:30 PM Dent, Eliza\*; Gelwick, Katrina D.; Pazzaglia, Frank J.; Peters, Stephen C.; Kodama, Kenneth P.: **RECONSTRUCTION OF MIDDLE PLEISTOCENE INTERGLACIAL PALEOCLIMATE FROM TWO BURIED PALEOSOLS IN THE PO PLAIN, NORTHERN ITALY AND COMPARISON TO PALEOSOLS IN THE EASTERN US**
- 14-11** 4:50 PM Thornburg, Jesse D.\*; Cushman, Elizabeth M.; Song, Boyoung; Spatola, Sofia; Sparacio, Christopher A.: **UNDERSTANDING THE CLIMATE AND LANDSCAPE THAT LED TO EXCEPTIONALLY LARGE BURROWS IN THE UPPER DEVONIAN HUNTLEY MOUNTAIN FORMATION**
- 14-12** 5:10 PM Buynevich, Ilya V.\*: **FISH-INDUCED BIOTURBATION ACROSS A STREAM PROFILE: IMPLICATIONS FOR ICHNODIVERSITY OF RIPARIAN PALEOSOLS**

**SESSION NO. 15****T24. Geoarchaeology: Investigations and Techniques (GSA Continental Scientific Drilling Division; GSA Soils and Soil Processes Division)**

1:30 PM, Holiday Inn - Portland by the Bay, Rhode Island Room

Alice R. Kelley, Presiding

- 1:30 PM** **INTRODUCTORY REMARKS**
- 15-1** 1:40 PM Buynevich, Ilya V.\*; Gnivecki, Perry L.; Park Boush, Lisa E.; Berman, Mary Jane; Curran, H. Allen; Savarese, Michael; Kopcznski, Karen A.; Glumac, Bosiljka: **BAHAMIAN COASTAL GEOARCHAEOLOGY AT LIGHT SPEED: INSIGHTS FROM HIGH-FREQUENCY GPR IMAGING**



## AFTERNOON POSTER TECHNICAL SESSIONS

### SESSION NO. 17

#### *D5. Geoscience Education (Posters)*

1:30 PM, Holiday Inn - Portland by the Bay, Casco Bay Hall

Authors will be present from 2 to 4 PM

Booth #

- |      |   |   |
|------|---|---|
| 17-1 | 1 | Ebert, James R.*: <b>A SYNTHETIC GAMMA RAY LOG OF THE ONONDAGA FORMATION AT CHERRY VALLEY, NEW YORK</b>   |
| 17-2 | 2 | Roberts, Gillian K.*; Domack, Cynthia R.; Tollerton, Victor P.: <b>A REFERENCE COLLECTION OF DEVONIAN CNIDARIA AND BRYOZOA FROM THE GEER ROAD QUARRY IN EATON, NEW YORK</b>             |
| 17-3 | 3 | Castiblanco, Ursula D.*; Domack, Cynthia R.; Tollerton, Victor P.: <b>A REFERENCE COLLECTION OF DEVONIAN ARTHROPODS (TRILOBITES) FROM THE GEER ROAD QUARRY IN EATON, NEW YORK</b>       |
| 17-4 | 4 | Muller, Otto H.*; Nagel-Myers, Judith: <b>FOUR TOOLS TO ACCESS THE DATABASE OF NYSGA FIELD TRIPS</b>  |
| 17-5 | 5 | Ford, Austin T.*; Tollerton, Victor P.; Domack, Cynthia R.: <b>A REFERENCE COLLECTION OF DEVONIAN MOLLUSCA FROM THE GEER ROAD QUARRY IN EATON, NEW YORK</b>                             |
| 17-6 | 6 | Christy, Penelope M.*; Evans, Robert; Evans, Mark A.: <b>DEVELOPING UNDERGRADUATE FIELD METHODS CLASS EXERCISES UTILIZING GROUND PENETRATING RADAR: HISTORIC WETHERSFIELD COVE AREA</b> |

### SESSION NO. 18

#### *T4. Best Practices in Geoscience Education (Posters) (GSA Energy Geology Division; GSA Soils and Soil Processes Division)*

1:30 PM, Holiday Inn - Portland by the Bay, Casco Bay Hall

Authors will be present from 2 to 4 PM

Booth #

- |      |    |   |
|------|----|---|
| 18-1 | 7  | Corbett, Lee B.*; Bierman, Paul R.: <b>THE NSF/UVM COMMUNITY COSMOGENIC FACILITY: A NEW RESOURCE LOCATED IN NEW ENGLAND FOR STUDENTS AND FACULTY NATIONWIDE</b>   |
| 18-2 | 8  | Roemmele, Christopher*: <b>UNEARTHING AND MITIGATING GEOLOGIC BLINDNESS THROUGH ACTIVE LEARNING</b>   |
| 18-3 | 9  | Aragón Oreggo, Maria Fé*; Moroz, Gabriela; Gibson, Sahra; Kumagai, Aya; Löwgren, Sara; Hall, Sarah R.; Schmidt, Calla M.; Walker, Becca; Paul, John R.: <b>MATCHING SKILL TO NEED: A MULTI-INSTITUTION APPROACH TO FIELD-BASED ENVIRONMENTAL STEM (ESTEM) STUDIES AND PROFESSIONAL DEVELOPMENT SKILLS</b> |
| 18-4 | 10 | Erikson, Johan P.*; Teegarden, Gregory J.: <b>OUTCOMES FROM AN OFF-CAMPUS, FIELD-BASED GEOSCIENCE SEMESTER FOR SECOND- AND THIRD-YEAR UNDERGRADUATES</b>  |
| 18-5 | 11 | Smith, Jason J.*; Congdon, Robert: <b>MULTIDISCIPLINARY FIELD STUDIES: AN EFFECTIVE APPROACH TO ACHIEVING THE NEXT GENERATION SCIENCE STANDARDS</b>   |
| 18-6 | 12 | Evans, Stephanie C.*; Fansler, Jenny; Evans, Kathryn: <b>TEACHING GEOLOGY IN THE FIELD: FIELD PEDAGOGY AND THE IMPERATIVE KNOWLEDGE OF LEARNING ON-SITE</b>   |
| 18-7 | 13 | Jordan, Brennan T.*: <b>PUT YOUR PXRF TO WORK: A K-12 E&amp;O MODULE LEVERAGING PLANETARY ROVERS AS ROBOTIC GEOLOGISTS TO TEACH ABOUT EARTH AND PLANETARY SCIENCES</b>  |

- |      |         |  |
|------|---------|--|
| 15-2 | 2:00 PM | Hamilton, Nathan D.*: <b>GEOARCHAEOLOGY OF THE ANDROSCOGGIN RIVER IN WESTERN MAINE</b>   |
| 15-3 | 2:20 PM | Spiess, Arthur*: <b>PALEOINDIAN SITE LOCATION AND SMALL SCALE SAND DUNES IN CENTRAL AND SOUTHERN MAINE</b>   |
| 15-4 | 2:40 PM | Leach, Peter A.*: <b>CENTIMETER-LEVEL INTERTIDAL SEDIMENT DYNAMICS AT A SUBMERGED AND INTERTIDAL PREHISTORIC SITE IN NEW HAMPSHIRE</b>   |
|      | 3:00 PM | <b>BREAK</b>   |
| 15-5 | 3:15 PM | Nikitina, Daria*; Wholey, Heather; Knox, Kyle; Powers, Michael: <b>IMPACT OF SEA LEVEL RISE ON HERITAGE RESOURCES OF THE DELAWARE ESTUARY</b>  |
| 15-6 | 3:35 PM | Hamilton, Nathan D.*: <b>HIGH RESOLUTION MAPPING OF COASTAL SITES TO MONITOR SEA-LEVEL RISE AND RISK ASSESSMENT</b>  |
| 15-7 | 3:55 PM | Hrynck, Gabriel*; Anderson, Arthur; Patton, Katherine; Brouillette, Christopher; Lamb, Trevor: <b>THE REVERSING FALLS SITE (80.15 ME), PEMBROKE, MAINE: AN ERODING MIDDLE WOODLAND SITE IN A UNIQUE GEOLOGICAL SETTING</b> |
| 15-8 | 4:15 PM | Kelley, Alice R.*; Newsom, Bonnie; Spiess, Arthur: <b>CLIMATE CHANGE AND SHELL MIDDENS: CREATING BASELINES FOR FUTURE DECISIONS</b>  |
|      | 4:35 PM | <b>LIGHTNING PRESENTATION FOR POSTER</b>   |
|      | 4:40 PM | <b>LIGHTNING PRESENTATION FOR POSTER</b>   |
|      | 4:45 PM | <b>CONCLUDING REMARKS</b>  |

### SESSION NO. 16

#### *T25. The Roles of Geochronology and Geochemistry of Granitoid Plutons in Deciphering Orogenic Events*

3:00 PM, Holiday Inn - Portland by the Bay, Massachusetts Room

David Gibson and Sandra Barr, Presiding

- |      |         |   |
|------|---------|---|
| 16-1 | 3:00 PM | Barr, Sandra M.*; White, Chris E.; van Rooyen, Deanne; Sombini dos Santos, Gabriel; Moring, Alicia: <b>DECIPHERING TECTONOMAGMATIC EVENTS IN THE GANDERIAN ASPY TERRANE OF CAPE BRETON ISLAND, NOVA SCOTIA, CANADA: JUXTAPOSED EARLY EDIACARAN THROUGH DEVONIAN ARC AND WITHIN-PLATE PLUTONS</b>          |
| 16-2 | 3:20 PM | Johnson, Susan C.*; Barr, Sandra M.; van Rooyen, Deanne; White, Chris E.: <b>U-PB (ZIRCON) AGE, PETROLOGY, AND TECTONIC SETTING OF THE CANAAN RIVER PLUTON, SOUTHEASTERN NEW BRUNSWICK, CANADA</b>  |
| 16-3 | 3:40 PM | Gibson, David*; Barr, Sandra M.; van Rooyen, Deanne: <b>LATE DEVONIAN PERALUMINOUS GRANITIC MAGMATISM OF WEST-CENTRAL MAINE</b>   |
| 16-4 | 4:00 PM | Dorais, Michael J.*: <b>THE NEW HAMPSHIRE PLUTONIC SUITE: WHAT DO WE KNOW, WHAT PROBLEMS REMAIN?</b>  |
| 16-5 | 4:20 PM | Town, Caleb Forrest*; Strauss, Justin V.; Kinney, Sean T.; MacLennan, Scott A.; Bradley, D.C.; Olsen, Paul E.; Schoene, Blair; Setera, Jacob: <b>NEW ZIRCON U-PB GEOCHRONOLOGICAL DATA FROM THE MOAT VOLCANICS, WHITE MOUNTAINS, NEW HAMPSHIRE – IMPLICATIONS FOR RIFT AND/OR PLUME RELATED MAGMATISM</b> |
| 16-6 | 4:40 PM | Westerman, David S.*: <b>CONSTRAINTS ON CONDITIONS AND TIMING OF SILURO-DEVONIAN EXTENSION: EVIDENCE FROM THE WESTERN CONNECTICUT VALLEY-GASPÉ TROUGH MARGIN</b>  |
| 16-7 | 5:00 PM | Michel, Andrew*; Dietsch, Craig: <b>ARE THE HARRISON GNEISS AND SISCOWIT GRANITE IN THE STAMFORD AND POUND RIDGE QUADRANGLES, CONNECTICUT, CO-GENETIC, NON-ARC MAGMAS?</b>  |

## SESSION NO. 19

**T11. Current Research in Coastal and Marine Processes (Posters)**

1:30 PM, Holiday Inn - Portland by the Bay, Casco Bay Hall

Authors will be present from 2 to 4 PM

Booth #

- 19-1 14 Avery, Emma L.\*: **MARINE DEPOSITIONAL HISTORY: AN ANALYSIS OF BLOCK ISLAND, RI HURRICANES**
- 19-2 15 Boettner, Madison\*; Keohane, Timothy; Wiebe, Miranda; Hay, Carling C.: **USING SHIP SOUNDING DATA TO RECONSTRUCT LOCAL SEA LEVEL CHANGE NEAR MIDDLETON ISLAND, ALASKA**
- 19-3 16 Alldred, Mary\*; Borrelli, Jonathan J.; Zarnoch, Chester: **MARSH PLANTS ENHANCE COASTAL MARSH RESILIENCE BY CHANGING SEDIMENT REDOX CONDITIONS IN AN URBAN, EUTROPHIC ESTUARY**
- 19-4 17 Geyer, Alan W.\*; Cohen, Michael; Nikitina, Daria; Powers, Michael; Rees, Garret; Helmke, Martin F.: **GEOMORPHIC CHARACTERIZATION OF SALT PONDS IN SLAUGHTER BEACH, DELAWARE**
- 19-5 18 Bafumo, David\*; McCandless, Stephen J.; Oakley, Bryan A.: **USING SINGLE-BEAM BATHYMETRY, RTK-GPS AND ESRI ARCMAP MODEL BUILDER TO EVALUATE SEDIMENTATION IN A COASTAL LAGOON**
- 19-6 19 Pringle, Crystal\*: **STORM DRIVEN SEDIMENT DEPOSITION ON PLUM ISLAND MASSACHUSETTS**
- 19-7 20 Vasylenko, Klavdiya\*; Buynevich, Ilya V.; Lyons, Kathryn; Karmolinski, Milanka: **POST-SUPERSTORM SANDY (2012-2018) RECOVERY OF A BACKDUNE OVERTOP CORRIDOR, ISLAND BEACH, NEW JERSEY: FIELD MONITORING AND GRAY-SCALE IMAGE ANALYSIS**
- 19-8 21 Lyons, Kathryn\*; Buynevich, Ilya V.; Kopczinski, Karen A.; Curran, H. Allen: **GEORADAR-AIDED ASSESSMENT OF BIOGENIC STRUCTURES IN BAHAMIAN COASTAL DUNES: IMPLICATIONS FOR HETEROGENEITY OF SHORELINE RETREAT**
- 19-9 22 O'Hara, Heidi\*; Gillikin, David P.; Goodwin, David H.; Bennett, Hayley I.; Cilia, Elizabeth; Fratian, Mihai; Carrigan, Emily; Wanamaker, Alan D.: **CARBON DYNAMICS IN A MARSH-DOMINATED ESTUARINE SYSTEM**
- 19-10 23 Croteau, Jennifer A.\*; Varney, Madeline R.; Augenstein, Alyson; Rohr, Nicole; August, Pete V.; Oakley, Bryan A.: **VULNERABILITY ASSESSMENT OF THE FRINGING SALT MARSH OF NAPATREE LAGOON: WESTERLY, RI**
- 19-11 24 Moore, McCain\*; McHugh, Cecilia M.G.; Seeber, Leonardo; Usami, Kazuko; Kanamatsu, Toshiya; Ikehara, Ken; Strasser, Michael: **THE SEDIMENTARY AND ISOTOPIC SIGNATURE OF THE 2011 TOHOKU EARTHQUAKE AND TSUNAMI AND PRIOR EARTHQUAKES, JAPAN TRENCH**
- 19-12 25 Bennett, Hayley I.\*; Gillikin, David P.; Goodwin, David H.; Cilia, Elizabeth; O'Hara, Heidi; Fratian, Mihai; Carrigan, Emily; Wanamaker, Alan D.: **A MULTI-SPECIES SURVEY OF NITROGEN ISOTOPES IN MARINE MOLLUSK SOFT TISSUES FROM A NORTH CAROLINA COASTAL SYSTEM: AN INDICATOR OF ANTHROPOGENIC NITROGEN LOADING?**
- 19-13 26 Birdsall, Courtney\*; Forster, Taylor; Moskalski, Susanne: **ACOUSTIC BOTTOM CLASSIFICATION OF OYSTER HABITAT IN THE MULLICA RIVER ESTUARY**
- 19-14 27 Yoder, Meg\*; Koffman, Bess; Wallace, Kristi L.; Saylor, Patrick; Handley, Michael: **EVALUATING THE COMPOSITION OF TERRESTRIAL NUTRIENTS DELIVERED TO THE SUBARCTIC PACIFIC OCEAN**
- 19-15 28 Delligatti, Michael\*; McHugh, Cecilia M.G.; Kaiser, Adam; Nitsche, Frank; Kenna, Timothy C.: **EXTRACTING THE RECORD OF STORMS FROM THE SEDIMENTS OF LONG ISLAND SOUND**

## SESSION NO. 20

**T14. Lake Sediments as Archives of Environmental Change (Posters) (GSA Continental Scientific Drilling Division; GSA Geology and Society Division)**

1:30 PM, Holiday Inn - Portland by the Bay, Casco Bay Hall

Authors will be present from 2 to 4 PM

Booth #

- 20-1 29 Bryant, Nolen Belle\*; Solari, Nhia M.; Sheraden-Cox, Leafia; Monecke, Katrin; Brabander, Daniel J.; Hubeny, J. Bradford: **THE SEDIMENTARY ARCHIVE OF LAKE WABAN- MULTIPROXY ANALYSIS OF LAND USE CHANGES SINCE THE PRE INDUSTRIAL ERA**
- 20-2 30 Iversen, Andrew J.\*; Chen, Christine Y.; Huybers, Kathleen; McGee, David; Rupper, Summer B.: **GIS-BASED RECONSTRUCTIONS OF PALEOLAKE AREA AND VOLUMES IN THE WESTERN UNITED STATES AND CENTRAL ANDES: IMPLICATIONS FOR PALEOCLIMATE INTERPRETATIONS**
- 20-3 31 Fox, Lydia K.\*; Strock, Kristin E.: **RELATING DIATOM COMMUNITY SHIFTS TO ENVIRONMENTAL CHANGE IN ICELANDIC FRESHWATER LAKES**
- 20-4 32 Nesel, Rebecca\*; Sorensen, Mary; Stroup, Justin: **GRAIN SIZE ANALYSIS OF SEDIMENT CORE SAMPLES FROM SEARLES LAKE, CALIFORNIA: STEPS TOWARD INTERPRETING LAKE EXPANSION AND CONTRACTION IN THE DESERT SOUTHWEST**
- 20-5 33 Sorensen, Mary\*; Nesel, Rebecca; Stroup, Justin: **ESTABLISHING A GRAIN SIZE SAMPLE PROCESSING METHOD: ISOLATING CLASTIC GRAINS AND REMOVING EVAPORITE MINERALS TO ENABLE PALEO-ENVIRONMENTAL INTERPRETATIONS**
- 20-6 34 Loubsky-Lonergan, Emma\*; Curtin, Tara M.; Finkelstein, David B.: **DO VARVES FORM IN SENECA LAKE, NY? USING A CALIBRATED FIVE-YEAR SEDIMENT TRAP RECORD TO RECONSTRUCT SEASONAL CLIMATE VARIABILITY DURING THE HOLOCENE**
- 20-7 35 Chang, Clara\*; Kinney, Sean T.; Fang, Yanan; Cho, Sun A.; Lee, Madison; Sha, Jingeng; Olsen, Paul E.: **COMPARATIVE PALEO-LIMNOLOGY OF RAFTING PROCESSES IN LATE TRIASSIC LACUSTRINE RECORDS**
- 20-8 36 Newcombe, Hannah\*; Hubeny, J. Bradford; Knudstrup, Renee; Monecke, Katrin; McCarthy, Francine M.G.: **LATE PLEISTOCENE TO MIDDLE HOLOCENE PALEOLIMNOLOGICAL VARIABILITY PRESERVED IN THE SEDIMENTS OF WALDEN POND, MA**
- 20-9 37 Mitchel, Connor\*; Ouimet, William B.; Thorson, Robert M.; Dow, Samantha: **POST-GLACIAL STRATIGRAPHY AND HUMAN IMPACTS IN UPPER BOLTON LAKE, EASTERN CONNECTICUT: IMPLICATIONS FOR AN ATLANTIC WHITE CEDAR STAND**
- 20-10 38 Ross, Jenna\*; Chaves, Elize; Price, Seth; Schmitkons, Jonathan P.: **GEOCHEMICAL ANALYSIS AND CLOSED SYSTEM MODELING OF GLACIER LAKE, NY FOR THE VERIFICATION OF MEROMIXIS**
- 20-11 39 Weber, Ellen C.\*; Aspey, Alexandria R.; Finkenbinder, Matthew S.; Bird, Broxton W.; Steinman, Byron A.; MARK, Samuel; Halsor, Sid P.: **A 1,500 YEAR RECORD OF LATE HOLOCENE CLIMATE CHANGE IN NEWFOUNDLAND USING OXYGEN ISOTOPE ANALYSIS OF LAKE SEDIMENT CORES**
- 20-12 40 Bagby, Michael\*; Brunstad, Keith A.: **BATHYMETRIC MAPPING AND INITIAL SUB-BOTTOM PROFILING OF THE LOWER RESERVOIR OF ONEONTA CREEK, NY, USING HIGH-FREQUENCY SIDE SCAN SONAR**

## SESSION NO. 21

**T26. Innovations in LA-ICP-MS in the Earth Sciences (Posters)**

1:30 PM, Holiday Inn - Portland by the Bay, Casco Bay Hall

Authors will be present from 2 to 4 PM

Booth #

- 21-1 41 Leonard, Aaron\*; Gaschnig, Richard; Lewis, Reed S.: **REVISITING THE PROVENANCE OF THE BELT SUPERGROUP WITH AN EXPANDED DETRITAL MINERAL TOOLKIT**



- 21-2 42 du Toit, Charl D.\*; Gaschnig, Richard; Lewis, Reed S.; Schmidt, Keegan L.: **IN SITU U-PB ZIRCON GEOCHRONOLOGY OF DEFORMED GRANITOID AND ORTHOGNEISSES IN THE MAIN SALMON GNEISS COMPLEX, IDAHO**
- 21-3 43 Cole, Matthew C.\*; Manon, Matthew R.F.: **LASER ABLATION U-PB ZIRCON DATING BY TRIPLE QUAD ICP-MS; CAN MERCURY INTERFERENCE REMOVAL LEAD TO MORE PRECISE AGES: AN EXAMPLE FROM THE ADIRONDACK HIGHLANDS, NY**
- 21-4 44 Conrey, Richard M.\*; Bailey, David G.; Singer, Jared W.; Wagoner, Lauren; Parfitt, Benjamin; Hay, John; Keh, Oliver: **OPTIMIZATION OF INTERNAL STANDARDS IN LA-ICPMS ANALYSIS OF GEOLOGIC SAMPLES USING LITHIUM BORATE FUSED GLASS**
- 21-5 45 McFarlane, Christopher R.M.\*; Boucher, Brandon: **TESTING THE LIMITS OF UNCONVENTIONAL U-PB GEOCHRONOMETERS WITH APPLICATIONS TO HIGHLY-FRACTIONATED MAGMATIC SYSTEMS**
- 21-6 46 Tompkins, Hannah G.D.\*; Ibanez-Mejia, Mauricio; Tissot, Francois L.H.: **EVALUATING INTRA-CRYSTALLINE ZR STABLE ISOTOPE ZONATION IN A ZIRCON MEGACRYST**
- 21-7 47 Becker, Naomi A.\*; Burgess, Jerry L.; Nelson, Wendy R.; Viète, Daniel R.: **SUPRA-SUBDUCTION ZONE OPHIOLITES ALONG THE APPALACHIAN-CALEDONIDE OROGENIC BELT**
- 21-8 48 Stone, Joshua S.\*; Harmon, Natalie; Biela, Kimberley; Walters, Jesse B.; Cruz-Urbe, Alicia M.; Marschall, Horst: **ZR-RUTILE THERMOMETRY OF MÉLANGE ROCKS FROM SYROS, GREECE**
- 21-9 49 Biela, Kimberley\*; Stone, Joshua S.; Harmon, Natalie; Walters, Jesse B.; Cruz-Urbe, Alicia M.; Marschall, Horst: **TRACE ELEMENT ZONING IN TITANITE FROM SYROS, GREECE: IMPLICATIONS FOR COUPLED SUBSTITUTION MECHANISMS**

## MONDAY, 18 MARCH 2019

### MORNING ORAL TECHNICAL SESSIONS

#### SESSION NO. 22

##### *D1. A Cross-Disciplinary Approach to Investigating Tectonics - Integrating Field, Laboratory, and Experimental Techniques*

8:00 AM, Holiday Inn - Portland by the Bay, Massachusetts Room

Allison R. Severson, Jesse B. Walters, Wentao Cao, Adam J. Ianno, Walter A. Sullivan, Scott Johnson and Chris Gerbi, Presiding

- 22-1 8:00 AM Johnson, Scott E.\*; Song, Won Joon; Cook, Alden C.; Gerbi, Christopher C.; Vel, Senthil S.; Song, Bo Ra: **GRAIN-SCALE ELASTIC ENERGY, ROCK FABRIC DEVELOPMENT AND RHEOLOGICAL EVOLUTION**
- 22-2 8:20 AM Sullivan, Walter A.\*: **RHEOLOGIC EVOLUTION OF A CRUSTAL-SCALE STRIKE-SLIP FAULT ZONE: A CASE STUDY OF THE KELLYLAND FAULT ZONE IN EASTERN MAINE**
- 22-3 8:40 AM Young, Richard A.\*: **NEOTECTONIC STRUCTURES AND STRESSES ASSOCIATED WITH NEW YORK STATE FINGER LAKES BASINS: IMPLICATIONS FOR SUBSURFACE MINES AND CAVITIES**
- 9:00 AM **BREAK**
- 9:15 AM **POSTER PRESENTATIONS - LIGHTNING ROUND (EACH POSTER PRESENTER HAS 1 ONE SLIDE AND 2 MINUTES TO ADVERTISE THEIR POSTER)**

#### SESSION NO. 23

##### *T1. The Formation and Evolution of Iceland: Magmatic, Tectonic, and Geomorphological Processes*

8:00 AM, Holiday Inn - Portland by the Bay, Rhode Island Room

Brennan Jordan, Tamara L. Carley and Tenley J. Banik, Presiding

- 23-1 8:00 AM Bhattacharyya, Prajukti\*; Yavuzcetin, Ozgur: **USING ICELAND AS AN OPEN LABORATORY FOR TEACHING INTERDISCIPLINARY SCIENCE COURSES: LESSONS LEARNED**
- 23-2 8:20 AM Carley, Tamara L.\*; Miller, Calvin F.; Padilla, Abraham De Jesus; Banik, Tenley J.; Schmitt, Axel K.; Economos, Rita C.: **ICELANDIC RHYOLITE GENERATION INFLUENCED BY GLACIAL CLIMATE IN THE LATE PLEISTOCENE: EVIDENCE FROM OXYGEN ISOTOPES AND AGES IN THE ZIRCON RECORD**
- 23-3 8:40 AM Peate, David W.\*; Siebach, Jacob A.; Maruszczak, Alex D.; Burney, David: **AN OVERVIEW OF THE ALKALINE OFF-AXIS MAGMATISM OF THE SNAEFELLSNES PENINSULA, ICELAND**
- 23-4 9:00 AM Banik, Tenley J.\*; Carley, Tamara L.; Miller, Calvin F.; Jordan, Brennan T.: **COMPLICATED GEODYNAMIC EVOLUTION IN THE NORTHERN WESTFJORDS, ICELAND ELUCIDATED BY ICELAND'S OLDEST SILICIC ROCKS**
- 23-5 9:20 AM Jordan, Brennan T.\*: **DIVERSE VOLCANIC PRODUCTS OF INJECTION OF PLAGIOCLASE-ULTRAPHYRIC BASALT MAGMA INTO A ZONED SILICIC MAGMA CHAMBER IN THE NEOGENE OF ICELAND**
- 23-6 9:40 AM Connors, Mary Elizabeth\*; Carley, Tamara L.; Fiege, Adrian: **COMPOSITIONAL EVOLUTION OF TORFAJÖKULL CENTRAL VOLCANO, ICELAND: PERSPECTIVES FROM THE APATITE RECORD**

#### SESSION NO. 24

##### *T7. Private Wells—Current Challenges and Opportunities (GSA Continental Scientific Drilling Division; GSA Hydrogeology Division; GSA Geology and Society Division)*

8:00 AM, Holiday Inn - Portland by the Bay, New Hampshire Room

Sille Larsen, Liz Royer, Paul Susca, Patti Casey and Joseph D. Ayotte, Presiding

- 24-1 8:00 AM Levitt, Joseph P.\*; Larsen, Sille: **CHLORIDE IN DOMESTIC WELLS AND PROXIMITY TO ROADWAYS IN VERMONT**
- 24-2 8:20 AM Kim, Jonathan J.\*; Casey, Patti; Comstock, Jeff: **CHARACTERIZING FRACTURED ROCK AQUIFERS CONTAMINATED WITH NITRATE AT LARGE DAIRY FARMS IN CENTRAL VERMONT**
- 24-3 8:40 AM Ging, Alexander\*; Schroeder, Timothy; Hitzelberger, Michael; Nordyke, Alexandra; Salazar, Emma L.: **FATE AND TRANSPORT OF PER AND POLYFLUOROALKYL SUBSTANCE CONTAMINATION IN AN UNCONSOLIDATED AQUIFER, NORTH BENNINGTON, VERMONT**
- 9:00 AM **BREAK/DISCUSSION**
- 24-4 9:15 AM Panthi, Jeeban\*: **COASTAL STORM EFFECTS ON GROUNDWATER IN SOUTHERN RHODE ISLAND**
- 24-5 9:35 AM Spayd, Steve\*; Stroiteleva, Yelena; Dooley, John; Lubenow, Brady L.; Rockafellow-Baldoni, Megan; Filo, Rachel; Procopio, Nicholas A.; Herman, Greg; Gleason, Jessie A.: **ELEVATED BORON ASSOCIATED WITH LITHIUM, SODIUM, SULFATE, AND ARSENIC IN NEWARK BASIN PRIVATE WELLS**
- 24-6 9:55 AM Larsen, Sille\*: **INVESTIGATING CORRELATION BETWEEN NATURALLY OCCURRING RADIONUCLIDES IN VERMONT PRIVATE WELLS AND INDOOR AIR**
- 10:15 AM **BREAK/DISCUSSION**
- 24-7 10:30 AM Keyworth, Amy J.\*; Kane, Evan O.: **BUILDING AN EFFECTIVE LOCAL GOVERNMENT RESPONSE TO NATURALLY OCCURRING RADIONUCLIDE CONTAMINATION IN PRIVATE WELLS**

## MONDAY, 18 MARCH

- 24-8 10:50 AM Procopio, Nicholas A.\*; Gleason, Jessie A.; Spayd, Steve: **NEW JERSEY'S PRIVATE WELL TESTING ACT: GEOGRAPHIC SUMMARY AND RECENT COMMUNITY INTERVENTION ACTIVITIES**
- 24-9 11:10 AM Carlisle, Ian D.\*; Belaval, Marcel; Gordon, Ryan P.; Simbliaris, Harry; Bryce, Julia G.; Ayotte, Joseph D.: **GROUNDWATER AND PUBLIC HEALTH: A NOVEL SHALLOW WELL TECHNOLOGY TO PROVIDE SAFE DRINKING WATER FOR PRIVATE DOMESTIC WELLS**
- 11:30 AM **DISCUSSION**

### SESSION NO. 25

#### ***T13. River Corridor Processes and Related Decision Making I (GSA Energy Geology Division; GSA Geology and Society Division; GSA Hydrogeology Division)***

8:00 AM, Holiday Inn - Portland by the Bay, Connecticut Room

Sean M. Smith, Anne Lightbody and Melissa Landon, Presiding

- 8:00 AM **PART I INTRODUCTION - GEOMORPHOLOGY, HYDROLOGY, AND HYDRAULICS**
- 25-1 8:10 AM Pipala, James\*; Pizzuto, James; Stotts, Stephanie; Sherif, M.I.; Sturchio, N.C.; LeBivic, Rejanne: **GEOCHRONOLOGY AND STRATIGRAPHY OF HOLOCENE AND RECENT SEDIMENTS OF THE WHITE CLAY CREEK VALLEY, SOUTHEASTERN PA**
- 25-2 8:30 AM Skaggs, Elizabeth R.\*; Knuepfer, Peter L.K.: **CHANGES IN THE MORPHOLOGY OF ESOPUS CREEK, CATSKILL MOUNTAINS, NEW YORK, 2004-2016, DUE TO ANTHROPOGENIC AND NATURAL FACTORS**
- 25-3 8:50 AM Henkel, Brian\*; Hall, Sarah R.; Gallardo García Freire, Patricio; Löwgren, Sara: **WATERSHED MONITORING IN ACADIA NATIONAL PARK: PRELIMINARY RESULTS BASED ON THREE YEARS OF DATA COLLECTED ACROSS MULTIPLE WATERSHEDS**
- 25-4 9:10 AM Newcomb, Andrew\*; Smith, Sean M.: **HUMANS, DAMS, AND FLOW REGIMES IN THE PENOBSCOT RIVER**
- 25-5 9:30 AM Lightbody, Anne\*; Simon, David; Smith, Sean M.: **IMPACT OF NEW ENGLAND DAMS ON FLOOD FREQUENCIES AND NITROGEN FLUX**
- 9:50 AM **BREAK**
- 10:05 AM **POP UP "LIGHTNING" TALKS WITH POSTER HIGHLIGHTS**
- 25-6 10:20 AM Thorson, Robert M.\*: **THE HISTORICAL CONSEQUENCES OF IGNORING RIVER SCIENCE: THE FLOWAGE CONTROVERSY IN THE CONCORD RIVER VALLEY, MASSACHUSETTS (1635-1862)**
- 25-7 10:40 AM Roy, Samuel G.\*; Daigneault, Adam; Truhlar, Allison; Jain, Shaleen; Smith, Sean M.C.: **FISHY BUSINESS: A MULTI-OBJECTIVE APPROACH TO CULVERT AND DAM DECISIONS FOR IMPROVED INFRASTRUCTURE, ECOSYSTEMS, AND COST**
- 25-8 11:00 AM Hosseini Shakib, Iman\*; Gardner, Kevin; Lightbody, Anne; Smith, Sean M.C.; Gold, Arthur J.: **INVESTIGATION OF SNOWMELT IMPACT ON TRENDS IN RUNOFF COEFFICIENTS OF FLOODS CAPABLE OF DAM BREAKS IN NEW ENGLAND**
- 25-9 11:20 AM Richmond, Nick\*; Smith, Sean M.C.; Roy, Samuel G.; Koons, Peter O.: **THE HYDRAULIC IMPLICATIONS OF RELICT INDUSTRIAL (LOG DRIVE ERA) INFRASTRUCTURE ON LARGE RIVERS IN THE NORTHEAST**

### SESSION NO. 26

#### ***T18. Peri-Gondwanan Terranes and Their Origins: What Do We Really Know?***

8:00 AM, Holiday Inn - Portland by the Bay, Vermont Room

Yvette D. Kuiper, Margaret D. Thompson and R. Damian Nance, Presiding

8:00 AM **INTRODUCTORY REMARKS**

- 26-1 8:05 AM van Staal, Cees R.\*; Barr, Sandra M.; White, Christopher E.: **SPECULATIONS ON THE PROVENANCE AND TECTONIC EVOLUTION OF THE PERI-GONDWANAN TERRANES IN THE APPALACHIAN-CALEDONIDE OROGEN**
- 26-2 8:25 AM Waldron, John W.F.\*; Schofield, David I.; Pearson, D. Graham; DuFrane, S. Andrew; Sarkar, Chiranjeeb; Luo, Yan; Dokken, Robert: **CHARACTERIZATION OF CAMBRIAN SANDSTONES ON BOTH SIDES OF THE MODERN ATLANTIC: IMPLICATIONS FOR PERI-GONDWANAN TERRANE AFFINITIES IN THE APPALACHIAN-CALEDONIDE OROGEN**
- 26-3 8:45 AM Viète, Daniel R.\*: **A POTENTIAL NON-LAURENTIAN PROVENANCE FOR THE SOUTHERN HIGHLAND GROUP OF THE DALRADIAN SUPERGROUP, SCOTLAND**
- 26-4 9:05 AM Bradley, Dwight\*: **DETRITAL ZIRCON BARCODES FROM MESOPROTEROZOIC AND NEOPROTEROZOIC STRATA ON THE WEST AFRICAN CRATON, AND IMPLICATIONS FOR APPALACHIAN TERRANES**
- 26-5 9:25 AM Mills, A.J.\*; Dunning, G.R.; Sandeman, H.: **AGE-CONSTRAINED LITHOGEOCHEMICAL INVESTIGATIONS OF VOLCANIC ROCKS IN NORTHWESTERN AVALON TERRANE, NEWFOUNDLAND**
- 9:45 AM **BREAK**
- 26-6 10:00 AM White, Chris E.\*; MacHattie, Trevor G.; Neyedley, Kevin; Barr, Sandra M.: **THE COBEQUID HIGHLANDS, NOVA SCOTIA, CANADA: EXTENDING THE AVALONIAN GEOLOGICAL RECORD BACK TO THE EARLY NEOPROTEROZOIC**
- 26-7 10:20 AM Pollock, Jeffrey C.\*; Barr, Sandra M.; van Rooyen, Deanne; White, Chris E.: **CONTRASTING AVALONIAN AND GANDERIAN CRUST USING LU-HF-ISOTOPIC COMPOSITION AND MODEL AGES OF NEOPROTEROZOIC MAGMATIC ZIRCON GRAINS**
- 26-8 10:40 AM Wang, Chunzeng\*; Pollock, Stephen; Marvinney, Robert G.; Putnam, David: **ORDOVICIAN ARC DEVELOPMENT AND EVOLUTION IN MUNSUNGUN INLIER, MAINE: NEW EVIDENCES FROM FIELD, GEOCHEMICAL, AND GEOCHRONOLOGICAL STUDIES**
- 26-9 11:00 AM Thompson, M.D.\*; Barr, S.M.: **ANOMALOUS ASPECTS OF WEST AVALONIA IN SOUTHEASTERN NEW ENGLAND, USA**
- 26-10 11:20 AM Hepburn, J. Christopher\*; Kuiper, Yvette D.: **EARLY PALEOZOIC GANDERIAN ORIGIN FOR THE NASHOBA TERRANE OF SOUTHEASTERN NEW ENGLAND**
- 26-11 11:40 AM Kuiper, Yvette D.\*; Hepburn, J. Christopher; He, Tammy X.; Charnock, Robert; McClary, Kristin J.: **DOMAINS WITH GANDERIAN AND LAURENTIAN DETRITAL ZIRCON SOURCES IN SOUTHEASTERN NEW ENGLAND**

## MORNING POSTER TECHNICAL SESSIONS

### SESSION NO. 27

#### ***D2. Environmental Geology & Geochemistry (Posters)***

8:00 AM, Holiday Inn - Portland by the Bay, Casco Bay Hall

Authors will be present from 9 to 11 AM

Booth #

- 27-1 1 May, Amanda\*: **USE OF GEOLOGICAL APPROACHES IN DETERMINING THE SOURCE, TRANSPORTATION PATHWAYS AND FOOD CHAIN IMPACTS OF RECENT DDT CONTAMINATION IN SQUAM LAKE, NH**
- 27-2 2 Wysocki, Ryan\*; Karimi, Bobak: **CARBON SEQUESTRATION POTENTIAL OF THE ORISKANY SANDSTONE IN PENNSYLVANIA REVISITED**

- 27-3 3 Buzeta, Rachel Kristine\*; Bedaso, Zelalem K.; Ekberg, Mike: **MULTIPLE ISOTOPE ( $\Delta^{15}\text{N}$ ,  $\Delta^{18}\text{O}$ ,  $\Delta^{11}\text{B}$ ) TRACING OF NITRATE CONTAMINANT SOURCES IN SURFACE AND GROUNDWATER**
- 27-4 4 Hitzelberger, Michael\*; Schroeder, Timothy; Ging, Alexander; Kim, Jonathan J.; Ryan, Peter; Boutt, David F.: **TRACING INFILTRATION OF PFAS CONTAMINATION FROM SOIL TO A FRACTURED BEDROCK AQUIFER USING TRACE ELEMENT AND ISOTOPE GEOCHEMISTRY**
- 27-5 5 Cohen, Sophie\*; Smisko, William; Harrison, Matthew; Blumenthal, Alex; Schmitkons, Jonathan P.: **DETERMINING THE EFFECT OF TREE CANOPY AND LICHEN SPECIES ON SORPTION CAPABILITIES OF LICHENS**
- 27-6 6 Reynolds, Alex\*; White, Abby; Kelly, Evan; Ebert, James R.: **PRELIMINARY INVESTIGATION OF THE FALL MECHANICS OF MICROPLASTICS PARTICLES IN AIR**
- 27-7 7 Hughes, Brendan\*; Wizevich, Michael C.: **UNDERSTANDING BLEACHING FLUID FLOW ALTERATION IN THE NEW HAVEN ARKOSE, HAMDEN CT**
- 27-8 8 Boulger, Erin\*; Gray, Connor; Venn, Cynthia; Hallen, Christopher P.: **GEOCHEMICAL ANALYSIS OF BRIAR CREEK LAKE IN COLUMBIA COUNTY, PENNSYLVANIA**
- 27-9 9 Oyewumi, Oluyinka\*; Stoddard, Wilbur; Kisluk, Isabelle; Christy, Penelope M.: **TRACE ELEMENTS ENRICHMENT IN STREAM SEDIMENTS ALONG NAUGATUCK RIVER, CONNECTICUT**
- 27-10 10 Dalbo, Brian\*; Helfrich, Autumn L.; Venn, Cynthia; Hallen, Christopher P.: **REVISITING GEOCHEMISTRY OF WATER IN PINE FOREST TREATMENT SYSTEM IN ST. CLAIR (SCHYULKILL COUNTY), PA**
- 27-11 11 Gray, Connor\*; Boulger, Erin; Venn, Cynthia; Hallen, Christopher P.: **REVISITING WATER QUALITY WITHIN THE BRIAR CREEK WATERSHED (COLUMBIA COUNTY, PA)**
- 27-12 12 Helfrich, Autumn L.\*; Dalbo, Brian; Venn, Cynthia; Hallen, Christopher P.: **ASSESSMENT OF SEDIMENTS WITHIN THE PINE FOREST MINE ANOXIC LIMESTONE DRAIN TREATMENT SYSTEM IN ST. CLAIR (SCHYULKILL COUNTY), PA**
- 27-13 13 Iaccarino, Dominique\*; Martini, Anna: **HAMBURG COVE, CT: SEDIMENT CORES REVEAL 20<sup>TH</sup> AND 21<sup>ST</sup> CENTURY "LEGACY" POLLUTION**
- 27-14 14 Kovalesski, Alexandra J.\*; McMahon, Ryan; Oyewumi, Oluyinka: **GEOCHEMICAL ANALYSIS OF LOCALLY BREWED COFFEE FROM DIFFERENT VENDORS IN NEW BRITAIN, CT**
- 27-15 15 Kolkas, Mossbah\*: **ENVIRONMENTAL IMPACTS OF CONTAMINATED SOILS IN SELECTED PUBLIC PARKS, STATEN ISLAND, NEW YORK**
- 27-16 16 Elick, Jennifer M.\*; Balingier, Thomas; Barnes, Melissa; Coder, Bailey; Daku, Rachel; Gomez, Julianne; Mayer, Katherine; Meriney, William; Morris, Daniel; Mount, Jake; Murray, Justin; Reed, Madison; Sanchez, Heather; Visser, Nicholas; Wetzels, Rose; Winner, Lucas: **MICROPLASTICS FOUND IN WASTEWATER EFFLUENT FLOWING INTO THE SUSQUEHANNA RIVER**
- 27-17 17 Ma, Qian\*; Yang, Yueheng; Yang, Ming; Zhao, Han; Zhao, Zhidan: **HIGH-PRECISION AND ACCURATE DETERMINATION OF LU AND HF CONCENTRATIONS AND HF ISOTOPIC COMPOSITIONS AT THE SUB-NANOGRAM LEVEL IN GEOLOGICAL SAMPLES USING MC-ICP-MS**
- 27-18 18 Rivers Cole, Jennifer S.\*: **MEAT CONSUMPTION AND THE ENVIRONMENTAL UNSUSTAINABILITY OF ECONOMIC GROWTH: THE CASE OF CHINA**
- 27-19 19 Kopfer, Brandon\*; Peck, John A.: **A RECORD OF ANTHROPOGENIC ENVIRONMENTAL IMPACTS FROM THE SEDIMENTS OF NESMITH LAKE, OHIO**
- 27-20 20 Martinez-Sacristan, Hernando\*: **FOUNDING A GEOLOGY/HYDROGEOLOGY-HEALTH MAP AS A REAL NEED**

**SESSION NO. 28****D3. GeoHeritage (Posters)**

8:00 AM, Holiday Inn - Portland by the Bay, Casco Bay Hall

Authors will be present from 9 to 11 AM

Booth #

- 28-1 21 Hudson, W. Donald\*; Marvinney, Robert G.; Anderson, Walter A.: **THE INTERNATIONAL APPALACHIAN TRAIL: LINKING APPALACHIAN TERRANES WITH PEOPLE ACROSS THE NORTH ATLANTIC**
- 28-2 22 Daly, Julia\*; Anderson, Walter A.: **CONNECTING TRAIL: THE INTERNATIONAL APPALACHIAN TRAIL AND THE APPALACHIAN OROGENY**
- 28-3 23 Ernsberger, Henry\*: **THE ROLE OF HENRY WARD IN THE UNDERSTANDING OF GLOBAL CLIMATE IN THE LATE 19<sup>TH</sup> CENTURY**
- 28-4 24 Higgins, Pennilyn\*: **THE WARD PROJECT: STUDYING THE IMPACT OF HENRY WARD (FOUNDER OF WARD SCIENCE) ON THE TEACHING NATURAL SCIENCE STARTING IN THE LATE 19<sup>TH</sup> CENTURY AND CONTINUING TODAY**

**SESSION NO. 29****D9. Geoarcheology (Posters)**

8:00 AM, Holiday Inn - Portland by the Bay, Casco Bay Hall

Authors will be present from 9 to 11 AM

Booth #

- 29-1 25 Bettke, Lindsay N.\*; Miller, Madelyn G.; Rayburn, John A.; Diamond, Joseph E.: **GPR INVESTIGATION LOCATES A MISSING REDOUBT SECTION AT HISTORIC HUGUENOT ST., NEW PALTZ, NY**
- 29-2 26 Hunt, Matthew\*; Pearson, Adam Jeffrey: **EFFECTS OF FLUVIAL SYSTEMS ON ARTIFACTS: TRANSPORT DISTANCE AND WEATHERING DISTORTION**

**SESSION NO. 30****S1. Geology, Structure, Geochronology, and Tectonics in Southern New England: An Eclectic Session in Honor of Robert P. Wintsch (Posters)**

8:00 AM, Holiday Inn - Portland by the Bay, Casco Bay Hall

Authors will be present from 9 to 11 AM

Booth #

- 30-1 27 Drzewiecki, Peter\*; Steinen, Randolph; Thomas, Margaret A.; Stellas, Michael J.: **EXTENSION OF ROCKY HILL ANTICLINE SOUTH OF THE LAMENTATION MOUNTAIN FAULT, MESOZOIC BASIN OF CONNECTICUT**
- 30-2 28 Portnoy, Samantha\*; Kim, Jonathan J.; Klepeis, Keith; Van Hoesen, John: **USING UNMANNED AERIAL VEHICLE (UAV) PHOTOGRAMMETRY TO REVISIT A CLASSIC OUTCROP: SHELBURNE BOAT ACCESS, WEST-CENTRAL VERMONT**
- 30-3 29 Hillenbrand, Ian W.\*; Wintsch, Robert P.; Thomas, Margaret A.: **A REVISED TECTONIC MAP OF CONNECTICUT: UPDATES BASED ON 3 DECADES OF MAPPING, GEOCHRONOLOGY, AND GEOCHEMISTRY**
- 30-4 30 Cunningham, Dickson\*; Knox, Madison: **POLY-DEFORMATIONAL GEOLOGICAL HISTORY BETWEEN COLCHESTER AND SOUTH SALEM, CONNECTICUT: DOCUMENTING THE MID-CRUSTAL STRUCTURE NORTH AND SOUTH OF THE HONEY HILL FAULT ZONE**
- 30-5 31 Livoti, Dominic\*; Wargo, James; Knox, Madison; Cunningham, Dickson: **LITHOLOGICAL AND STRUCTURAL EVOLUTION OF THE SOAPSTONE MTN METAGABBRO COMPLEX, SOMERS, CT**
- 30-6 32 Griffin, Colin G.\*; Solar, Gary S.: **PORPHYROBLAST-MATRIX RELATIONS IN WESTERN CONNECTICUT: INCLUSION TRAILS AND STRAIN-SHADOW TAILS**

## SESSION NO. 31

### **T5. New Perspectives on Mineral Resources of the Northeast (Posters) (GSA Continental Scientific Drilling Division; GSA Energy Geology Division)**

8:00 AM, Holiday Inn - Portland by the Bay, Casco Bay Hall

Authors will be present from 9 to 11 AM

- |      | Booth # |   |
|------|---------|---|
| 31-1 | 33      | Honsberger, Ian W.*; Bleeker, Wouter; Sandeman, H.; Evans, Dave: <b>STRUCTURALLY CONTROLLED GOLD MINERALIZATION IN CENTRAL NEWFOUNDLAND: IMPLICATIONS FOR GOLD POTENTIAL AND TIMING OF MINERALIZATION</b> |
| 31-2 | 34      | Rddad, Larbi*: <b>THE GENESIS OF THE TIGRININE-TAABEST MVT PB-ZN ORE DEPOSIT IN CENTAL HIGH ATLAS: CONSTRAINTS FROM FLUID INCLUSION AND C-O-S-PB ISOTOPES STUDIES</b>                                     |
| 31-3 | 35      | Surrusco, Steven*; Schrader, Christian M.; West, Andrew; Broman, Bonnie: <b>OXYGEN AND CARBON ISOTOPIC ANALYSES OF THE CARBONATE-HOSTED BORNITE CU-CO DEPOSIT, NW ALASKA</b>                              |
| 31-4 | 36      | Kensell, Michael*; Serowik, Caitlin; Valentino, David W.; Gates, Alexander E.: <b>MAGNETIC ANOMALY AND SUSCEPTIBILITY ANALYSIS OF ORE BODIES IN THE WESTERN HUDSON HIGHLANDS, NEW YORK</b>                |
| 31-5 | 37      | Malanoski, Cooper M.*; Darling, Robert S.: <b>CORUNDUM EXSOLUTION LAMELLAE IN ILMENITE FROM A WESTERN ADIRONDACK IRON AND EMERY PROSPECT</b>  |

## SESSION NO. 32

### **T19. Detrital Mineral Constraints on Appalachian-Caledonide Tectonics (Posters)**

8:00 AM, Holiday Inn - Portland by the Bay, Casco Bay Hall

Authors will be present from 9 to 11 AM

- |      | Booth # |   |
|------|---------|---|
| 32-1 | 38      | Browning-Hanson, Joseph*; Viete, Daniel R.: <b>WHITE MICA DETRITAL SIGNATURES OF LOCAL, IAPETAN RIFT-DRIFT TECTONOTHERMAL HISTORIES ALONG THE APPALACHIAN-CALEDONIAN OROGENIC BELT</b>  |
| 32-2 | 39      | Robinson, Peter; Strauss, Justin V.; Thompson, Peter J.*: <b>GRANULITE MEMBER OF THE ERVING FORMATION, WEST-CENTRAL MASSACHUSETTS: DETRITAL ZIRCONS SUGGEST A LOCHKOVIAN MAXIMUM DEPOSITIONAL AGE</b>                                       |
| 32-3 | 40      | Eusden, J. Dykstra*; O'Sullivan, Paul; Niller, Kurt A.; Merrill, Thom K.: <b>BEDROCK GEOLOGY AND GEOCHRONOLOGY OF THE MT. CRESCENT, NH 7.5' QUADRANGLE</b>  |
| 32-4 | 41      | Cavagnaro, David B.*; Strauss, Justin V.; Reusch, Douglas N.; Waldron, John W.F.; Slack, John F.: <b>NEW U-PB DETRITAL AND IGNEOUS ZIRCON GEOCHRONOLOGICAL RESULTS FROM THE ST. CROIX TERRANE AND ISLESBORO BLOCK, PENOBSCOT BAY, MAINE</b> |
| 32-5 | 42      | Bloch, Roger B.*; Reusch, Douglas N.: <b>CAN BACK-ARC PROCESSES IN A SIMPLIFIED MODEL EXPLAIN MUCH OF THE COMPLEXITY OF THE NORTHERN APPALACHIAN OROGEN?</b>  |
| 32-6 | 43      | Koch, Megan M.*; Strauss, Justin V.; Faehnrich, Karol; McClelland, William C.: <b>IGNEOUS AND DETRITAL ZIRCON SIGNATURES OF THE FIRE BAY FORMATION, CLEMENTS MARKHAM FOLD BELT, NORTHWEST ELLESMERE ISLAND</b>                              |

## SESSION NO. 33

### **T20. Geology of the Grenville Orogeny and Adirondack Mountains (Posters)**

8:00 AM, Holiday Inn - Portland by the Bay, Casco Bay Hall

Authors will be present from 9 to 11 AM

- |      | Booth # |   |
|------|---------|---|
| 33-1 | 44      | Kavanagh-Lepage, Charles*; Gervais, Félix: <b>TECTONO METAMORPHIC STUDY ALONG THE MANICOUAGAN-FERMONT TRANSECT: A JOURNEY IN THE CENTRAL GRENVILLE PROVINCE AND THE CORE OF A LONG HOT OROGEN</b> |

- |      |    |   |
|------|----|---|
| 33-2 | 45 | Labat, Gaëlle Morgane*; Gervais, Felix: <b>AN UPGRADED STRAIN ANALYSIS METHOD APPLIED TO THE MANICOUAGAN IMBRICATE ZONE, CENTRAL GRENVILLE PROVINCE, QUEBEC, CANADA: EVIDENCE FOR REGIONAL CONSTRICTION</b>   |
| 33-3 | 46 | Rosen, Madison Liith*; Markley, Michelle; Dunn, Steven R.: <b>THE METAMORPHIC AND STRUCTURAL HISTORY OF THE CENTRAL METASEDIMENTARY BELT BOUNDARY ZONE AT TWO OUTCROPS SOUTH OF KILLALOE, ONTARIO, CANADA</b> |
| 33-4 | 47 | Markley, Michelle*; Dunn, Steven R.: <b>THE THERMAL STRUCTURE OF THE WESTERN HALF OF THE CENTRAL METASEDIMENTARY BELT, GRENVILLE PROVINCE, ONTARIO, REQUIRES A RE-SIZING OF THE OTTAWAN OROGENIC LID</b>      |
| 33-5 | 48 | Williams, Garnet J.*; Toraman, Erkan: <b>KINEMATIC AND VORTICITY ANALYSIS OF THE CARTHAGE-COLTON SHEAR ZONE</b>   |
| 33-6 | 49 | Pidgeon, Jarret William*; Gray, K.: <b>TEXTURAL AND COMPOSITIONAL VARIANCE OF IN-SITU LITHOLOGIES IN THE EASTERN PORTION OF THE MARCY MASSIF</b>  |
| 33-7 | 50 | Mistikawy, Justin*; Williams, Michael L.; Regan, Sean P.: <b>GEOLOGY OF THE ROCK POND REGION, PHARAOH LAKE WILDERNESS AREA, ESSEX COUNTY, NY</b>  |

## AFTERNOON ORAL TECHNICAL SESSIONS

## SESSION NO. 34

### **T6. Groundwater and Surface Water Hydrology in the Northeastern United States (GSA Continental Scientific Drilling Division; GSA Hydrogeology Division; GSA Geology and Society Division)**

1:30 PM, Holiday Inn - Portland by the Bay, Massachusetts Room

Ryan P. Gordon, Presiding

- |      |         |   |
|------|---------|---|
|      | 1:30 PM | <b>INTRODUCTORY REMARKS</b>   |
| 34-1 | 1:35 PM | Holden, Mark*; Hopeck, John: <b>MIGRATION OF A CONSERVATIVE CONTAMINANT: INFILTRATION, FRACTURE CONDUITS, AND RE-EMERGENCE OF CHLORIDE IN WELLS AND STREAMS</b>   |
| 34-2 | 1:55 PM | Hon, Rudi*; Besancon, James; Bhajan, Liam; Battifarano, Oriana K.; Dillon, Peter: <b>ASSESSMENT OF THE DEICER DISSOLVED LOAD IN A STREAM IN SE MASSACHUSETTS</b>  |
| 34-3 | 2:15 PM | Battifarano, Oriana K.*; Hon, Rudolph; Besancon, James: <b>CHEMICAL VARIATIONS IN WATER QUALITY IN A SMALL STREAM DOWN FLOW FROM A DEICER STORAGE FACILITY</b>  |
|      | 2:35 PM | <b>BREAK</b>  |
| 34-4 | 2:50 PM | Hopeck, John*; Holden, Mark: <b>ASSESSING GROUNDWATER VULNERABILITY AND RELATIVE RISK IN REGIONS OF COMPLEX BEDROCK STRUCTURE AND GLACIAL OVERBURDEN</b>  |
| 34-5 | 3:10 PM | Kim, Jonathan J.*; Ryan, Peter; Schroeder, Timothy; Romanowicz, Edwin; Boutt, David F.; Belaval, Marcel: <b>USING MULTIPLE GROUNDWATER TRACERS TO ASSESS THE FATE AND TRANSPORT OF PFOA IN A SURFICIAL-FRACTURED ROCK AQUIFER SYSTEM: BENNINGTON, VERMONT</b> |
| 34-6 | 3:30 PM | Amir-Lin, Erika*; DeNatale, Douglas: <b>SURPRISES AND CHALLENGES ENCOUNTERED DURING CHARACTERIZATION OF A PARTIALLY CONFINED AQUIFER FOR A NEW MUNICIPAL SUPPLY WELL, IPSWICH, MASSACHUSETTS</b>  |
|      | 3:50 PM | <b>BREAK</b>  |
| 34-7 | 4:10 PM | Nielsen, Martha*: <b>25-YEAR AVERAGE ANNUAL RECHARGE RATES FOR MAINE</b>  |
| 34-8 | 4:30 PM | Smith-Tripp, Sarah M.*; Matthes, Jaclyn H.; Brabander, Daniel J.; Griffith, Alden: <b>GYPSY MOTH DEFOLIATION EFFECTS ON WATERSHED HYDROLOGY</b>   |

- 34-9** 4:50 PM Higgins, Mark A.\*; Robbins, Gary A.; Maas, Kendra; Binkhorst, Gordon K.: **USE OF NEXT-GENERATION SEQUENCING AND BACTERIAL COMMUNITY ANALYSIS IN PRIVATE GROUNDWATER WELLS TO IDENTIFY COMMON RECHARGE SOURCES**
- 34-10** 5:10 PM Wieman, Scott T.\*; Racela, Jason; Dethier, David P.: **CANOPY-SURFACE CYCLING OF CHLORIDE IN A NORTHEASTERN HARDWOOD FOREST**

**SESSION NO. 35****T10. Regional Advances in Seafloor Mapping and Benthic Habitat Classification**

1:30 PM, Holiday Inn - Portland by the Bay, Rhode Island Room

Matthew E. Nixon and Dan Sampson, Presiding

- 1:30 PM **INTRODUCTORY REMARKS**
- 35-1** 1:40 PM Shumchenia, Emily\*: **THE NORTHEAST OCEAN DATA PORTAL: DATA AND MAPS FOR NEW ENGLAND'S OCEANS**
- 35-2** 2:00 PM Flood, Roger D.\*; Cerrato, R.M.: **BACKSCATTER MAPPING, FAUNAL SAMPLING AND BENTHIC HABITAT IN THE LONG ISLAND SOUND CABLE FUND SEAFLOOR HABITAT MAPPING PROJECT**
- 35-3** 2:20 PM Babb, Ivar\*: **SEAFLOOR HABITAT MAPPING IN EASTERN LONG ISLAND SOUND**
- 35-4** 2:40 PM Kelley, Joseph\*: **A REVIEW OF THE INNER SHELF PHYSIOGRAPHY OF THE WESTERN GULF OF MAINE: PRESENT UNDERSTANDING AND FUTURE WORK**
- 3:00 PM **BREAK**
- 35-5** 3:15 PM Ward, L.\*; McAvoy, Z.; Masetti, G.; Morrison, R.: **HIGH RESOLUTION MAPPING OF MORPHOLOGIC FEATURES AND SEAFLOOR SEDIMENTS OF THE NEW HAMPSHIRE AND VICINITY CONTINENTAL SHELF, WESTERN GULF OF MAINE**
- 35-6** 3:35 PM Dickson, Stephen M.\*; Kraun, Benjamin; Dobbs, Kerby M.: **UNLOCKING THE LOWSTAND: GEOMORPHOLOGY OF MAINE'S INNER CONTINENTAL SHELF AND THE HOLOCENE TRANSGRESSION REVEALED BY MULTIBEAM**
- 3:55 PM **DISCUSSION**

**SESSION NO. 36****T13. River Corridor Processes and Related Decision Making II (GSA Energy Geology Division; GSA Geology and Society Division; GSA Hydrogeology Division)**

1:30 PM, Holiday Inn - Portland by the Bay, Connecticut Room

Sean M. Smith, Anne Lightbody and Melissa Landon, Presiding

- 1:30 PM **PART II INTRODUCTION - DAM REMOVAL AND SEDIMENT**
- 36-1** 1:40 PM Snyder, Noah P.\*; Collins, Mathias J.: **SEDIMENT STORAGE BEHIND DAMS IN NEW ENGLAND RIVERS: PRESENCE OR ABSENCE, PERSISTENCE, AND IMPLICATIONS**
- 36-2** 2:00 PM Nesbitt, Ian M.\*; Smith, Sean M.C.; Koffman, Bess; Campbell, Seth; Arcone, Steven: **A DECISION-MAKING FRAMEWORK FOR SEDIMENTATION ANALYSES IN DAMMED RIVER CORRIDOR IMPOUNDMENTS**
- 36-3** 2:20 PM Germanoski, Dru\*; Rothenberger, Megan; Brandes, David: **MULTIDISCIPLINARY MONITORING IN ANTICIPATION OF THE REMOVAL OF SEVERAL LOW-HEAD, RUN-OF-RIVER DAMS - BUSHKILL CREEK, PENNSYLVANIA**
- 2:40 PM **BREAK**
- 2:55 PM **POP UP "LIGHTNING" TALKS WITH POSTER HIGHLIGHTS**
- 36-4** 3:10 PM Evans, Alexandra\*; Greenwood, Scott; Gardner, Kevin; Burchsted, Denise: **DEVELOPING SUAS METHODS FOR MEASURING CHANGES IN RIVER TOPOGRAPHY FOLLOWING DAM REMOVAL**

- 36-5** 3:30 PM Rossi, Rebecca K.\*; Renshaw, Carl; Magilligan, Francis J.: **SPATIAL PATTERNS OF SEDIMENT MOBILITY IN RIVERS DISTURBED BY DAM REMOVAL**
- 36-6** 3:50 PM Magilligan, Francis J.\*; Nislow, Keith: **LONG-TERM BIOPHYSICAL MONITORING OF A DAM REMOVAL IN AN UPLAND CATCHMENT**
- 4:10 PM **CLOSING REMARKS**

**SESSION NO. 37****T15. Reconstructing Past Climate from the Geologic Record of Ice Sheets and Mountain Glaciers**

1:30 PM, Holiday Inn - Portland by the Bay, New Hampshire Room

Aaron E. Putnam, Brenda L. Hall and Thomas V. Lowell, Presiding

- 37-1** 1:30 PM Kreutz, Karl J.\*; Winski, Dominic; Osterberg, Erich C.; Wake, Cameron P.; Campbell, Seth; Introne, Douglas S.; Ferris, David: **MOISTURE TRANSPORT DYNAMICS IN THE NORTH PACIFIC OVER THE LAST MILLENNIUM AND IMPACTS ON THE MT. HUNTER (ALASKA) ICE CORE ISOTOPE RECORD**
- 37-2** 1:50 PM Schomacker, Anders\*; Farnsworth, Wesley R.; Ingólfsson, Ólafur; Allaart, Lis; Håkansson, Lena; Retelle, Michael J.; Siggaard-Andersen, Marie-Louise; Korsgaard, Niels J.; Rouillard, Alexandra; Kjellman, Sofia: **POSTGLACIAL RELATIVE SEA LEVEL CHANGE AND GLACIER ACTIVITY IN THE EARLY AND LATE HOLOCENE: WAHLENBERGFJORDEN, NORDAUSTLANDET, SVALBARD**
- 37-3** 2:10 PM Griggs, Carol B.\*: **AN INCREASE IN SUMMER TEMPERATURES AT THE START OF THE YOUNGER DRYAS: EVIDENCE FROM THE ALLEGHENY PLATEAU AND LOWLANDS OF THE LAKE IROQUOIS - MOHAWK RIVER VALLEY IN EAST-CENTRAL NEW YORK, USA**
- 37-4** 2:30 PM Brugger, Keith A.\*: **A REGIONAL VIEW OF TEMPERATURE DEPRESSION IN THE COLORADO ROCKY MOUNTAINS DURING THE LAST GLACIAL MAXIMUM**
- 37-5** 2:50 PM Strand, Peter D.\*; Putnam, Aaron E.; Schaefer, Joerg M.; Denton, George H.; Zhou, Weijian; An, Zhisheng; Sambuu, Oyungerel; Schwartz, Roseanne: **A BI-HEMISPHERIC PERSPECTIVE ON THE LAST GLACIAL TERMINATION FROM THE SOUTHERN ALPS OF NEW ZEALAND, THE HAIZI SHAN OF SOUTHEASTERN TIBET, AND ALTAI MOUNTAINS OF WESTERN MONGOLIA**
- 37-6** 3:10 PM Cunningham, Maxwell\*; Stark, Colin; Kaplan, Michael R.; Schaefer, Joerg M.: **THE GEOMORPHIC SIGNATURE OF GLACIATION IN TROPICAL MOUNTAINS**
- 37-7** 3:30 PM Jackson, Margaret S.\*; Kelly, Meredith A.; Russell, James M.; Doughty, Alice M.; Vickers, Anthony; Shakun, Jeremy D.; Goehring, Brent M.; Howley, Jennifer A.; Chipman, Jonathan W.; Cavagnaro, David B.; Zimmerman, Susan R.H.; Nakileza, Robert: **HOLOCENE GLACIATION IN THE AFRICAN AND SOUTH AMERICAN TROPICS**
- 37-8** 3:50 PM Hall, Sarah R.\*; McKenzie, Jeffrey M.; Hall, Brenda L.; Meriaux, Anne-Sophie; Fortin, Marc-Antoine: **GLACIAL GEOCHRONOLOGY TRANSECTING A TROPICAL MOUNTAIN RANGE, THE CORDILLERA BLANCA OF NORTHERN PERU**
- 37-9** 4:10 PM Potter, Noel L.\*; Schaefer, Joerg M.; Denton, George H.; Putnam, Aaron E.; Schwartz, Roseanne: **COSMOGENIC <sup>10</sup>BE SURFACE EXPOSURE DATING OF LATE HOLOCENE MORAINES OF THE HOOKER GLACIER, SOUTHERN ALPS, NZ**
- 37-10** 4:30 PM Swanger, Kate M.\*; Winsor, Kelsey; Babcock, Esther; Valletta, Rachel D.; Dickson, James L.: **ICE-CORED ROCK GLACIERS IN ANTARCTICA: RECORDING GLACIAL ADVANCES FROM MARINE ISOTOPE STAGE 5 TO THE HOLOCENE**
- 37-11** 4:50 PM Chesler, Aaron\*; Koffman, Bess; Kreutz, Karl J.; Osterberg, Erich C.; Winski, Dominic; Ferris, David; Cole-Dai, Jihong; Wells, Mark; Handley, Michael; Putnam, Aaron E.: **HOLOCENE**



**PARTICLE-SIZE-DISTRIBUTION (PSD) FROM SOUTH POLE ICE CORE (SPICECORE)**

- 37-12 5:10 PM Koffman, Bess\*; Goldstein, Steven L.; Kaplan, Michael R.; Winckler, Gisela; Kreutz, Karl J.; Bory, Aloys; Biscaye, Pierre E.: **ABRUPT LATE HOLOCENE SHIFT IN ATMOSPHERIC CIRCULATION RECORDED BY MINERAL DUST IN THE SIPLE DOME ICE CORE, ANTARCTICA**

**SESSION NO. 38****T16. Insights on the Ongoing Dynamics of Northeastern North America from Geology and Geophysics**

1:30 PM, Holiday Inn - Portland by the Bay, Vermont Room

William Menke, Paul Karabinos, Vadim Levin and Michael L. Williams, Presiding

- 38-1 1:30 PM Kosminska, Karolina\*; McClelland, William C.; Gilotti, Jane A.; Coble, Matthew A.: **U-PB EVIDENCE FOR MIDDLE DEVONIAN METAMORPHISM OF THE PETERSEN BAY ASSEMBLAGE ADJACENT TO THE PEARYA TERRANE, ELLESMERE ISLAND**
- 38-2 1:50 PM Kinney, Sean T.\*; MacLennan, Scott A.; Setera, Jacob; Schoene, Blair; VanTongeren, Jill; Olsen, Paul E.; Strauss, Justin V.; Town, Caleb Forrest; Bradley, Dwight: **CAUSAL IMPLICATIONS OF A NEW ZIRCON U-PB GEOCHRONOLOGICAL FRAMEWORK FOR MESOZOIC MAGMATISM IN NORTHERN NEW ENGLAND AND QUEBEC: WHAT ARE THE RIFT/POST-RIFT IGNEOUS ROCKS OF THE WHITE MOUNTAINS?**
- 38-3 2:10 PM Cipar, John J.\*; Ebel, John E.: **P-WAVE TRAVEL-TIME RESIDUAL MAP FOR EASTERN NORTH AMERICA**
- 38-4 2:30 PM Li, Cong\*; Gao, Haiying; Williams, Michael L.; Yang, Xiaotao: **MODIFICATION OF THE CONTINENTAL CRUST IN EASTERN NORTH AMERICA REVEALED BY PS CONVERTED WAVES**
- 38-5 2:50 PM Menke, William\*; Abbott, Dallas; Levin, Vadim: **THE INFLUENCE OF MANTLE UPWELLING AT THE PASSIVE CONTINENTAL MARGIN OF EASTERN NORTH AMERICA ON THE CRUST**
- 38-6 3:10 PM Abbott, Dallas H.\*; Menke, William: **THERMAL AND HALF THERMAL SPRINGS IN THE NORTHEASTERN US-RELATIONSHIP TO LOCAL TECTONICS AND THE NAA (NORTH APPALACHIAN ANOMALY)**
- 3:30 PM **BREAK**
- 38-7 3:45 PM Levin, Vadim\*; Menke, William; Li, Yiran; Servali, Andrea: **LITHOSPHERIC EXPRESSION OF THE NORUMBEGA FAULT ZONE IN NORTH COASTAL MAINE**
- 38-8 4:05 PM Li, Yiran\*; Levin, Vadim; Xie, Zhenxin: **FABRIC OF THE LITHOSPHERE IN NORTHEASTERN NORTH AMERICA**
- 38-9 4:25 PM Yang, Xiaotao\*; Gao, Haiying; Long, Maureen D.: **SEISMIC CHARACTERISTICS OF THE SOUTHERN NEW ENGLAND CRUST REVEALED BY FULL-WAVE AMBIENT NOISE TOMOGRAPHY**
- 38-10 4:45 PM Long, Maureen D.\*; Aragon, John C.; Yang, Xiaotao; Gao, Haiying; Goldhagen, Gillian; Ford, Heather; Kuiper, Yvette D.: **MODIFICATION OF LITHOSPHERIC STRUCTURE BENEATH CONNECTICUT VIA SUBDUCTION, TERRANE ACCRETION, AND RIFTING: INSIGHTS FROM THE SEISCONN EXPERIMENT**
- 5:05 PM **DISCUSSION**

**AFTERNOON POSTER TECHNICAL SESSIONS****SESSION NO. 39****D1. A Cross-Disciplinary Approach to Investigating Tectonics I - Integrating Field, Laboratory, and Experimental Techniques (Posters)**

1:30 PM, Holiday Inn - Portland by the Bay, Casco Bay Hall

Authors will be present from 1:30 to 3:30 PM

Booth #

- 39-1 1 Guest, Emily\*; Cao, Wentao; Massonne, Hans-Joachim: **PRESSURE-TEMPERATURE PATH OF ECLOGITES FROM THE GRENVILLE PROVINCE, SOUTHERN ONTARIO**
- 39-2 2 Calentti, Manlio J.\*; Peterman, Emily M.: **INTERPRETING METAMORPHIC HISTORIES PRESERVED IN KYANITE**
- 39-3 3 Hung, Caroline\*; Gilbert, Lisa A.; Wobus, Reinhard A.: **METAMORPHIC PROCESSES RECORDED IN DELAMINATED METABASALTS PRESERVED ON SOUTH ISLAND, NEW ZEALAND**
- 39-4 4 Benimoff, Alan; Kominoski, Sara\*: **OLIVINE GEOCHEMISTRY OF THE STATEN ISLAND SERPENTINITE**
- 39-5 5 Webber, Jeffrey R.\*; Avelar Flores, Alex; Del Turco, Andrew; Kalakay, Thomas; Williams, Michael L.; Mogk, David: **UNDEFINING THE SNOWY SHEAR ZONE --- A TECTONOMETAMORPHIC APPROACH TO UNDERSTANDING POLYPHASE DEFORMATION WITHIN THE WESTERN ABSAROKA-BEARTOOTH MOUNTAINS OF MONTANA**
- 39-6 6 Gerbi, Christopher C.\*; Johnson, Scott E.; Hodge, James L.; Feng, He: **THE IMPACT OF STRESS THRESHOLDS ON LOCALIZATION IN THE VISCOUS REGIME**
- 39-7 7 Hodge, James\*; Gerbi, Christopher C.; Johnson, Scott E.: **MICROSTRUCTURAL EVIDENCE LINKING DAMAGE ZONES AND GRANULITE HYDRATION**
- 39-8 8 Song, Bo Ra\*; Johnson, Scott E.; Vel, Senthil S.: **DAMAGE IN POLYCRYSTALLINE ROCKS BY THERMAL AND MECHANICAL LOADING IN ASSOCIATION WITH MAFIC DIKE INTRUSION INTO GRANITE ROCKS**
- 39-9 9 Balliet, Morgan\*; Thornton, Hannah; Karimi, Bobak: **STRAIN ANALYSIS OF THE EASTERNMOST APPALACHIAN OROCLINE**
- 39-10 10 McMahon, Ryan\*; Evans, Mark A.: **FRACTURE AND BURIAL HISTORY OF THE SOUTHERN ANTHRACITE FIELD, PENNSYLVANIA**
- 39-11 11 Moumou, Abdelhak\*; El Kadiri, Khalil; Rddad, Larbi; Amri, Isma: **THE ROLE OF THE JURASSIC RIFTING AND THE ALPINE OROGENY IN THE EMPLACEMENT OF THE PB-ZN MVT ORE DEPOSITS IN EASTERN HIGH ATLAS, MOROCCO**
- 39-12 12 Bogue, Benjamin L.\*; Evans, Mark A.: **THE FRACTURE AND FLUID HISTORY OF THE WHISKEY FLATS ANTICLINE IN THE CRAWFORD THRUST SHEET, CENTRAL WYOMING SALIENT**
- 39-13 13 Weiss, Jake Daren\*; Evans, Mark A.: **PALEO-HYDROSTRATIGRAPHY OF THE PALEOZOIC - MESOZOIC STRATIGRAPHIC SECTION IN THE SAWTOOTH RANGE, MONTANA**
- 39-14 14 Thomas, Christopher D.\*; Holyoke, Caleb: **STRUCTURAL INTEGRITY OF WEATHERED AND FRESHLY QUARRIED INDIANA LIMESTONE**

**SESSION NO. 40****D1. A Cross-Disciplinary Approach to Investigating Tectonics II - Integrating Field, Laboratory, and Experimental Techniques (Posters)**

1:30 PM, Holiday Inn - Portland by the Bay, Casco Bay Hall

Authors will be present from 3:30 to 5:30 PM

Booth #		TERM CHANGES IN PIT-AND-MOUND SYSTEMS: SUPERSTORM SANDY (2012) TREETHROW FIELD, SE PENNSYLVANIA	
40-1	15 Bosbyshell, Howell*; Murdoch, Melissa A.: <b>DURATION OF REGIONAL KYANITE-STAUROLITE GRADE METAMORPHISM DURING THE ACADIAN OROGENY: PRELIMINARY RESULTS OF DIFFUSION MODELING OF GARNET ZONING IN THE WISSAHICKON SCHIST, SE PENNSYLVANIA</b>	41-3	31 Walk, Erica*; Hurrey, Colin; Serpe, Jessica; Shayegan, Maria; Kopcznski, Karen A.; Buynevich, Ilya V.: <b>INVERTED FLUVIAL TOPOGRAPHY CONDITIONED BY A LATE TRIASSIC PALEO-CHANNEL COMPLEX, NESHAMINY CREEK, PENNSYLVANIA</b>
40-2	16 Cohen, Annie P.*; Harms, Tekla A.; Cheney, John T.: <b>CONSTRAINING METAMORPHIC P/T CONDITIONS FROM PRECRAMBRIAN CORUNDUM-BEARING ROCKS OF THE RUBY RANGE IN SW MONTANA</b>	41-4	32 Hamby, Jeffrey; LaPat, Ashley; Maiorano, Gabriella; Nogueira, Xavier Rojas*; Riley, Dillon; Kopcznski, Karen A.; Buynevich, Ilya V.: <b>MULTIPLE FLOOD INDICATORS IN A BEDROCK-CONTROLLED REACH OF NESHAMINY CREEK, PENNSYLVANIA</b>
40-3	17 Knapp, Leah*; Lee, Rachel; Hough, Brian: <b>ORIGIN AND DEVELOPMENT OF THE DEVIL'S BEDSTEAD PYROXENITE WITHIN THE PIONEER MOUNTAINS METAMORPHIC CORE COMPLEX, CENTRAL IDAHO</b>	41-5	33 Lyons, Kathryn*; Kluges, Keri; Sauerzopf, Aubrie; Fish, Rebecca; Choi, Chong Seok; Wong, Tyler; Kopcznski, Karen A.; Buynevich, Ilya V.: <b>GEORADAR CHARACTERIZATION OF GROUNDHOG BURROWS ALONG A SMALL FORESTED CREEK, MILL RUN, SE PENNSYLVANIA</b>
40-4	18 Guevara, Victor*; Mako, Calvin A.; Smail, Nathan; West, David P.: <b>CRYPTIC "BARROVIAN" METAMORPHISM IN A REGIONAL LOW-PRESSURE METAMORPHIC TERRANE: AN EXAMPLE FROM SOUTH-CENTRAL MAINE</b>	41-6	34 Norris, Tyler*: <b>MAPPING BEDROCK TOPOGRAPHY UNDER GLACIAL DRIFT USING SHALLOW GEOPHYSICAL METHODS IN MICHIGAN, USA</b>
40-5	19 Weiman, Christopher D.*; Valentino, David W.; Chiarenzelli, Jeffrey: <b>MIGRATION OF THE TACONIC DEFORMATION FRONT ACROSS THE MID-ATLANTIC PIEDMONT: EVIDENCE FROM DETAILED PORPHYROBLAST ANALYSIS</b>	41-7	35 Spigel, Lindsay*: <b>POTENTIAL TRIGGERS OF LARGE PREHISTORIC LANDSLIDES IN PRESUMPSCOT FORMATION, SOUTHERN MAINE</b>
40-6	20 Feng, He*; Gerbi, Christopher C.; Johnson, Scott E.: <b>WHAT MICROSTRUCTURAL PROCESSES CONTRIBUTED TO THE FORMATION OF RHEOLOGICAL BRIDGE ZONES?</b>	41-8	36 Sharretts, Tyler L.*; Mount, Gregory J.; Schaney, Christopher: <b>CHARACTERIZING THE SEDIMENTARY FLUXES AND GEOMORPHOLOGICAL ALTERATIONS OF PRESQUE ISLE PENINSULA USING GROUND PENETRATING RADAR</b>
40-7	21 Song, Won Joon*; Song, Bo Ra; Johnson, Scott E.; Gerbi, Christopher C.: <b>FAULT-ADJACENT DAMAGE AT THE BASE OF THE SEISMOGENIC ZONE AND IMPLICATIONS FOR CRUSTAL RHEOLOGY</b>	41-9	37 Torres, Natalie*; Lee, Rachel; Frieman, Richard; Hough, Brian: <b>CAN DRONE IMAGERY BE USED TO PRODUCE 3D MODELS FOR EROSION ANALYSIS?: AN EXPERIMENT AT MCINTYRE'S BLUFFS, STERLING, NY</b>
40-8	22 Swanson, Mark T.*: <b>NW-TRENDING STRUCTURES IN SOUTHERN COASTAL MAINE: REORIENTED BY STEEPLY-PLUNGING F3 FOLDS RELATED TO REGIONAL NORUMBEGA SHEAR</b>	41-10	38 Yanchuck, Michael*; Foust, Joshua; Karimi, Bobak: <b>DEVELOPING A LANDSLIDE INVENTORY FOR PENNSYLVANIA: NORTHEASTERN PA</b>
40-9	23 Murphy, Ian*; Evans, Mark A.: <b>EXAMINING DEFORMATION CONDITIONS DURING THE FORMATION OF THE SHADE MOUNTAIN ANTICLINE, CENTRAL PENNSYLVANIA SALIENT</b>	41-11	39 Foust, Joshua*; Yanchuck, Michael; Karimi, Bobak: <b>LANDSLIDE SUSCEPTIBILITY MODELING OF NORTHEASTERN PENNSYLVANIA</b>
40-10	24 Duffy, Kelsey L.*; Evans, Mark A.: <b>FLUID AND FRACTURE HISTORY OF THE TUSCARORA MOUNTAIN ANTICLINE, CENTRAL VALLEY AND RIDGE PROVINCE</b>	41-12	40 Kramer, Henry D.*; Byers, Colton W.; Baker, Gregory S.; Baldauf, Paul; Burkhart, Patrick A.: <b>DRONE ASSISTED INVESTIGATION OF DUNE FIELD MORPHOLOGY IN THE WHITE RIVER BADLANDS, SOUTH DAKOTA</b>
40-11	25 Muntz, Alexa L.*; Evans, Mark A.: <b>THE FRACTURE AND FLUID HISTORY OF THE BEAR CREEK ANTICLINE IN THE IDAHO PORTION OF THE NORTHERN WYOMING SALIENT</b>	41-13	41 Westman, Daniel*: <b>ANALYSIS OF THE RELATIONSHIP BETWEEN SHAPE, HARDNESS AND ERODIBILITY WITHIN CATSKILL STREAM EROSION OF A RETREATING WATERFALL SYSTEM</b>
40-12	26 Kovalski, Alexandra J.*; Evans, Mark A.: <b>A COMPARISON OF THE FRACTURE AND FLUID HISTORY OF FOUR FOLDS IN THE IDAHO-WYOMING SALIENT</b>	41-14	42 Pinke, Brian*; Germanoski, Dru; Brandes, David; Wilson, John R.: <b>COMPARISON OF DRAINAGE DENSITY AS A FUNCTION OF LITHOLOGY AND METHODOLOGY IN THE LEHIGH VALLEY, EASTERN PENNSYLVANIA</b>
40-13	27 Valentino, David W.*; Lee, Rachel; Valentino, Joshua; Maxwell, Brandon: <b>THE LINK BETWEEN FRACTURE SYSTEMS IN THE ADIRONDACK BASEMENT AND THE OVERLYING PALEOZOIC STRATA OF THE TUG HILL PLATEAU</b>	41-15	43 Pelletier, Alison R.*; Swanger, Kate M.: <b>ORIGIN AND TRANSPORT OF ROCK GLACIER ICE IN TAYLOR VALLEY, ANTARCTICA BY ANALYSIS OF ICE CRYSTAL FABRIC</b>
40-14	28 Otto, Daniel R.*; Walker, Jeff: <b>STRUCTURE AND COMPOSITION OF PRIMARY IGNEOUS AND CLAY MINERALS IN ALTERED BASALT FROM THE PROJECT HOTSPOT MH-2 BOREHOLE, MOUNTAIN HOME AIR FORCE BASE, IDAHO, USA</b>		

## SESSION NO. 41

### D4. Geomorphology (Posters)

1:30 PM, Holiday Inn - Portland by the Bay, Casco Bay Hall

Authors will be present from 2 to 4 PM

Booth #	
41-1	29 Reault, Shannon*; Buynevich, Ilya V.: <b>COMPARATIVE DENDROGEOMORPHOLOGY OF TREETHROW PATTERNS IN SE BUCKS COUNTY, PENNSYLVANIA: ASSESSING THE WINTER 2018 TRENDS</b>
41-2	30 Wiskemann, Leanne; Plasket, Thomas Z.; Martin, Alexander C.; Moiyallah, Morrison K.; Weinstein, Nathan D.; Reault, Shannon; Kopcznski, Karen A.; Buynevich, Ilya V.*: <b>DENDROGEOMORPHOLOGICAL ASSESSMENT OF SHORT-</b>

## SESSION NO. 42

### T1. The Formation and Evolution of Iceland: Magmatic, Tectonic, and Geomorphological Processes (Posters)

1:30 PM, Holiday Inn - Portland by the Bay, Casco Bay Hall

Authors will be present from 2 to 4 PM

Booth #	
42-1	44 Shteynman, Leah*; Pinke, Brian; Ruger, Edward C.V.; Wiley, Katharine; Carley, Tamara L.; Uktins, Ingrid: <b>XRD ANALYSIS OF MAFIC SANDS FROM THE ICELANDIC INTERIOR: AN ANALOGUE STUDY FOR THE BAGNOLD DUNE FIELD OF MARS</b>
42-2	45 McKenzie, Marion A.*; Principato, Sarah M.; Benediktsson, Ívar Örn: <b>USING STREAMLINED LANDFORMS TO RECONSTRUCT AND COMPARE PALEO-ICE FLOW PATHS IN NORTH ICELAND AND NORTHWESTERN PENNSYLVANIA</b>
42-3	46 Hartford, Danielle*; Mana, Sara: <b>THE INFLUENCE OF FRACTIONAL CRYSTALLIZATION IN THE MODAL ANALYSIS OF GELAI VOLCANO</b>



# SESSION NO. 43

## T12. Floods: Past, Present, and Future (Posters) (GSA Continental Scientific Drilling Division; GSA Geology and Society Division)

1:30 PM, Holiday Inn - Portland by the Bay, Casco Bay Hall

Authors will be present from 2 to 4 PM

Booth #

- |      |    |  |
|------|----|--|
| 43-1 | 47 | Coughenour, Christopher*; Taylor, Anthony: <b>DEPLOYMENT OF CURRENT METERS AND/OR SEDIMENT LOAD SAMPLERS DURING HIGH-STAGE STREAM FLOWS IN FIELD SITES REQUIRING LEAVE NO TRACE AND SHORT-TERM OR SAME-DAY SETUP AND REMOVAL OF INSTRUMENTATION: PRELIMINARY RESULTS FROM A PORTABLE CABLEWAY SYSTEM USED AT JOHNSTOWN FLOOD NATIONAL MEMORIAL</b> |
| 43-2 | 48 | Anderson, Hannah*; Laurie, Isabella; Wiebe, Miranda; Hay, Carling C.: <b>THE CORRELATION OF RIVER AND COASTAL FLOODING IN BOSTON, MA AND ATLANTIC CITY, NJ</b>   |
| 43-3 | 49 | Wells, Annika*; MARK, Samuel; Rodbell, Donald T.: <b>ENSO-INDUCED FLOODS RECORDED IN LAKE SEDIMENT CORES FROM EL CAJAS NATIONAL PARK, ECUADOR</b>  |
| 43-4 | 50 | Griswold, Frances R.*; Woodruff, Jonathan D.; Baranes, Hannah: <b>DIFFERENTIATING TYPHOON AND TSUNAMI DEPOSITS IN LAKE RYUJIN, KYUSHU, JAPAN</b>   |

# TUESDAY, 19 MARCH 2019

## MORNING ORAL TECHNICAL SESSIONS

# SESSION NO. 44

## T2. Beyond Sustainability: The Anthropocene as a Paradigm for Thinking about Earth across Disciplines (GSA Geology and Society Division; GSA Soils and Soil Processes Division)

8:00 AM, Holiday Inn - Portland by the Bay, Rhode Island Room

Gary Gomby and W. John Kress, Presiding

- |      |         |  |
|------|---------|--|
| 44-1 | 8:00 AM | Gomby, Gary*: <b>BEYOND SUSTAINABILITY: THE ANTHROPOCENE AS A PARADIGM FOR THINKING ABOUT EARTH ACROSS DISCIPLINES</b>   |
| 44-2 | 8:20 AM | van Vliet, Netta*; Hall, Sarah R.: <b>AN ANTHROPOLOGIST AND A GEOLOGIST GO INTO A CLASSROOM AND...</b>   |
| 44-3 | 8:40 AM | Ferraro, Carrie*; Holzer, Margaret; Pinsky, Malin; Selden, Rebecca; Papaioannou, Eva; St. Martin, Kevin: <b>UTILIZING CASE STUDIES TO ENHANCE SYSTEMS THINKING</b> |
| 44-4 | 9:00 AM | Siegel, Donald*: <b>THE FUTURE OF AMERICAN GEOSCIENCE IN THE 21<sup>ST</sup> CENTURY: A SPECULATION FOR REFLECTION</b>   |
| 44-5 | 9:20 AM | Peters, Colen R.*: <b>MITIGATING WETLAND IMPACTS (LOSS) IN THE ANTHROPOCENE</b>  |

# SESSION NO. 45

## T12. Floods: Past, Present, and Future (GSA Continental Scientific Drilling Division; GSA Geology and Society Division)

8:00 AM, Holiday Inn - Portland by the Bay, New Hampshire Room

Brian Yellen, Jon Woodruff, Michael Toomey and Timothy L. Cook, Presiding

- |      |         |   |
|------|---------|---|
|      | 8:00 AM | <b>INTRODUCTORY REMARKS</b>   |
| 45-1 | 8:10 AM | Dethier, Evan N.*; Magilligan, Francis J.; Renshaw, Carl E.: <b>TIMESCALES OF RESPONSE TO A CATASTROPHIC FLOOD: QUANTIFYING "EVENT" AND "POST-EVENT" EFFECTS TO ASSESS STREAM RECOVERY FOLLOWING TROPICAL STORM IRENE</b> |
| 45-2 | 8:30 AM | Yellen, Brian*; Steinschneider, Scott: <b>GRADUAL RECOVERY FROM FLOOD DISTURBANCE RECORDED IN SEDIMENT CORES</b>  |

- |       |          |   |
|-------|----------|---|
| 45-3  | 8:50 AM  | Cook, Timothy L.*; Snyder, Noah P.; Paradis, Kay; Oswald, W. Wyatt: <b>EROSIONAL IMPACTS OF TIMBER HARVEST AND EXTREME HYDROLOGICAL EVENTS IN A HIGH-RELIEF MAINE WATERSHED</b>                             |
| 45-4  | 9:10 AM  | Grote, Todd*; Springer, Gregory S.; Thurkettle, Sara A.; Dyer, Jamie: <b>FLOODS AND PALEOFLOODS IN THE GREENBRIER RIVER BASIN, WEST VIRGINIA</b>  |
| 45-5  | 9:30 AM  | Ladlow, Caroline*; Woodruff, Jonathan D.; Cook, Timothy L.; Baranes, Hannah E.; Kanamaru, Kinuyo: <b>A FLUVIAL-DEIVED FLOOD DEPOSIT DATING TO THE KAMIKAZE TYPHOONS IN KAWAHARA, JAPAN</b>                  |
|       | 9:50 AM  | <b>BREAK</b>  |
| 45-6  | 10:05 AM | Toomey, Michael*; D'Entremont, Nicole; Armstrong, Emma; Cronin, Thomas; Donnelly, Jeffrey: <b>HURRICANE FREQUENCY NEAR CHESAPEAKE BAY DURING THE PAST MILLENNIUM</b>  |
| 45-7  | 10:25 AM | David, Gabrielle C.L.*; Hamill, Daniel D.; Morgan, Michael J.: <b>BRIDGING SCIENCE AND MANAGEMENT: INVESTIGATING THE ORDINARY HIGH WATER MARK IN NORTHEAST STREAMS</b>                                      |
| 45-8  | 10:45 AM | Gartner, John D.*; Hatch, Christine E.; Larsen, Isaac J.: <b>PREDICTING GEOMORPHIC FLOOD HAZARDS AND SENSITIVE ECOLOGIC AREAS USING A UNIFORM, REPEATABLE, PROCESS-BASED DELINEATION OF RIVER CORRIDORS</b> |
| 45-9  | 11:05 AM | Collins, Mathias J.*: <b>FLOOD SEASONALITY IN THE NORTHEAST UNITED STATES: CHARACTERIZATION AND TRENDS</b>  |
| 45-10 | 11:25 AM | Baranes, Hannah*; Woodruff, Jonathan; Talke, Stefan; Ray, Richard: <b>INTERANNUAL VARIATION IN EXTREME WATER LEVEL PROBABILITIES IN THE GULF OF MAINE</b>   |

# SESSION NO. 46

## T19. Detrital Mineral Constraints on Appalachian-Caledonide Tectonics

8:00 AM, Holiday Inn - Portland by the Bay, Massachusetts Room

Douglas N. Reusch, David P. West Jr., Justin V. Strauss and Dwight Bradley, Presiding

- |      |         |   |
|------|---------|---|
| 46-1 | 8:00 AM | White, Shawna E.; Waldron, John W.F.*; Dunning, G.R.; DuFrane, S. Andrew: <b>PROVENANCE OF THE NEWFOUNDLAND APPALACHIAN FORELAND BASINS: IMPLICATIONS FOR TECTONICS OF THE LAURENTIAN MARGIN</b>  |
| 46-2 | 8:20 AM | Karabinos, Paul*; Crowley, James L.: <b>STRATIGRAPHIC, TECTONIC, AND PALEOGEOGRAPHIC CONSTRAINTS ON THE ACADIAN OROGENY FROM DETRITAL AND IGNEOUS ZIRCON DATING OF ROCKS FROM THE CONNECTICUT VALLEY-GASPE BASIN IN MASSACHUSETTS AND VERMONT</b>     |
| 46-3 | 8:40 AM | Pollock, Stephen*: <b>COMPOSITIONAL VARIATION IN EARLY PALEOZOIC SANDSTONES FROM NORTHERN MAINE</b>   |
| 46-4 | 9:00 AM | Cartwright, Samuel F.A.; West, David P.*: <b>DEPOSITIONAL AGES AND SEDIMENT PROVENANCE OF MULTIPLE LITHOTECTONIC BELTS IN SOUTH-CENTRAL MAINE: CONSTRAINTS FROM DETRITAL ZIRCON GEOCHRONOLOGY</b>   |
| 46-5 | 9:20 AM | Ludman, Allan*; Aleinikoff, John N.; Devlin, Bill: <b>INTERPRETING DETRITAL ZIRCON PROVENANCE IN THE CONTEXT OF REGIONAL STRATIGRAPHIC AND TECTONIC MODELS: AN EXAMPLE FROM LATE ORDOVICIAN-EARLY DEVONIAN COVER ROCKS ON GANDERIA, EASTERN MAINE</b> |
| 46-6 | 9:40 AM | van Rooyen, Deanne*; Barr, Sandra M.; White, Chris E.: <b>DETRITAL ZIRCON GEOCHRONOLOGY IN GANDERIAN AND AVALONIAN TERRANES OF CAPE BRETON ISLAND AND SOUTHERN NEW BRUNSWICK, CANADA: CHALLENGES AND OPPORTUNITIES</b>                                |

**SESSION NO. 47****T20. Geology of the Grenville Orogeny and Adirondack Mountains**

8:00 AM, Holiday Inn - Portland by the Bay, Vermont Room

Michelle Markley and Michael L. Williams, Presiding

- 47-1** 8:00 AM Suarez, Kaitlyn A.\*; Williams, Michael; Grover, Timothy W.; Jercinovic, M.J.; Pless, Claire R.: **IN-SITU ZIRCON AND MONAZITE GEOCHRONOLOGY FROM COMPOSITIONALLY DISTINCT LAYERS IN A SINGLE MIGMATITIC PARAGNEISS SAMPLE LOCATED IN THE EASTERN ADIRONDACK MOUNTAINS, NY**
- 47-2** 8:20 AM Toraman, Erkan\*; Chiarenzelli, Jeffrey R.: **THE LONGEVITY OF THE CARTHAGE-COLTON SHEAR ZONE: INSIGHTS FROM MULTIPHASE U-PB GEOCHRONOLOGY, TI THERMOCHRONOMETRY, AND TRACE ELEMENT GEOCHEMISTRY**
- 47-3** 8:40 AM Chiarenzelli, Jeffrey\*; Regan, Sean P.; Valentino, David; Toraman, Erkan: **THE SHAWINIGAN OROGEN IN THE ADIRONDACKS AND LINKAGE TO AMCG PLUTONISM**
- 47-4** 9:00 AM Aleinikoff, John N.\*; Walsh, Gregory J.: **NEW SHRIMP U-PB EVIDENCE FOR MULTIPLE AGES OF ANORTHOSITE EMPLACEMENT, MARCY MASSIF, ADIRONDACKS, NY**
- 47-5** 9:20 AM Indares, Aphrodite\*: **SYNOROGENIC METAMORPHIC AND MAGMATIC PATTERNS IN THE CENTRAL GRENVILLE PROVINCE (QUEBEC)**
- 47-6** 9:40 AM Makovsky, Kyle A.\*; Samson, Scott D.; Moecher, David P.: **MAGMATISM DURING GRENVILLE (1.14-1.05 GA) OROGENESIS: DID SOME OF EARTH'S HOTTEST GRANITOID FORM BY MELTING OF CHEMICALLY PRIMED CRUST? EVIDENCE FROM TI CONTENTS AND HF ISOTOPES IN ZIRCON**
- 47-7** 10:00 AM Groulier, Pierre-Arthur\*; Indares, Aphrodite; Dunning, Greg; Moukhsil, Abdelali: **RECORD OF ARC DYNAMICS IN THE MESOPROTEROZOIC LAURENTIAN MARGIN, CENTRAL GRENVILLE PROVINCE (QUEBEC)**
- 47-8** 10:20 AM Shah, Anjana K.\*; Taylor, Ryan D.; Walsh, Gregory J.; Phillips, Jeffrey D.: **IRON-OXIDE APATITE DEPOSITS OF THE EASTERN ADIRONDACKS, NY, ILLUMINATED USING AEROMAGNETIC, AERORADIOMETRIC, AND GEOCHEMICAL SAMPLE ANALYSIS DATA**

**SESSION NO. 48****T23. Simulation, Visualization, and Statistical Tools for Environmental Data Analysis**

8:00 AM, Holiday Inn - Portland by the Bay, Connecticut Room

Andrew Reeve, Presiding

- 48-1** 8:00 AM Tesin, Emilio\*; Soule, Dax; Crone, Tim: **USING COMPUTER VISION TO QUANTIFY BACTERIAL CONGLOMERATE CONCENTRATION IN THE WATER COLUMN WITHIN A HYDROTHERMAL VENT FIELD**
- 48-2** 8:20 AM Larson, Cecilia R.\*; Langenfeld, Betony; Flood, Clara Margaret; Schmidt, Amanda H.: **SPATIAL ANALYSIS OF UNCONVENTIONAL GAS INFRASTRUCTURE LOCATION AND EMISSIONS IN RELATION TO PUBLIC SCHOOLS IN WASHINGTON COUNTY, PA**
- 48-3** 8:40 AM Saunders-Shultz, Che Pablo\*; Martini, Anna M.: **ATMOSPHERIC MIXING MODELS OF FUGITIVE METHANE EMISSIONS FROM SHALE GAS DEPOSITS**
- 48-4** 9:00 AM Karimi, Bobak\*: **PATTERN ANALYSIS AND RECOGNITION IN NATURAL SYSTEMS: A CASE FOR PERSISTENT HOMOLOG**
- 48-5** 9:20 AM Reeve, Andrew S.\*; Slater, Lee; Comas, Xavier; Glaser, Paul H.: **USING WAVELETS TO IDENTIFY HYDRAULIC HEAD ANOMALIES ASSOCIATED WITH METHANE EBULLITION EVENTS**

**MORNING POSTER TECHNICAL SESSIONS****SESSION NO. 49****D6. Igneous Petrology (Posters)**

8:00 AM, Holiday Inn - Portland by the Bay, Casco Bay Hall

Authors will be present from 9 to 11 AM

Booth #

- 49-1** 1 Murray, Allyson N.\*; Fuorrry, Donald T.; Severs, Matthew J.; Webber, Jeffrey R.; Moskalski, Susanne: **PETROGENESIS AND MAGMATIC RELATIONSHIPS OF CRETACEOUS LARAMIDE IGNEOUS ROCKS OF SOUTHEAST ARIZONA**
- 49-2** 2 Langschultz, James\*; Castle, Evan; Appaluccio, Elizabeth; Severs, Matthew J.; Moskalski, Susanne: **INVESTIGATING THE ORIGIN OF LAMPROPHYRE DIKES IN THE BEEMERVILLE COMPLEX, SUSSEX COUNTY, NEW JERSEY**
- 49-3** 3 Andronikides, Alex\*; Longpre, Marc-Antoine: **TEXTURE AND COMPOSITION OF OLIVINE AND PLAGIOCLASE CRYSTALS FROM THE 2011 ERUPTION OF AXIAL SEAMOUNT: IMPLICATIONS FOR MAGMATIC PROCESSES AT A MID-OCEAN RIDGE VOLCANO**
- 49-4** 4 Carbone, Gabriel M.\*; Schrader, Christian M.; Boroughs, Scott; Wolff, John A.: **PETROLOGIC CORRELATIONS TO EXPAND VOLUME ESTIMATES OF THE MIOCENE COUGAR POINT TUFF, YELLOWSTONE HOT SPOT TRACK**
- 49-5** 5 Kaelin, Samuel T.\*; Walowski, Kristina: **EXPLOSIVITY OF PLEISTOCENE CINDER CONES IN THE LASSEN REGION: INSIGHTS FROM INTEGRATED TEXTURAL AND GEOCHEMICAL ANALYSIS**
- 49-6** 6 Taylor, Kaitlin C.\*; Charney, Allison Beth; Steinen, Randolph: **PETROGENESIS OF LAMPROPHYRES IN THE WALLINGFORD QUADRANGLE**
- 49-7** 7 McGarr, Jeffery Tyler\*; Dietsch, Craig: **MINERALOGY OF GRANITIC PEGMATITES FROM THE SISCOIT GRANITE, STAMFORD AND POUND RIDGE 7.5 MINUTE QUADRANGLES, SOUTHWESTERN CONNECTICUT**
- 49-8** 8 Meader, Forrest\*; Gibson, David: **PETROGRAPHY AND GEOCHEMISTRY OF THE TWIN LAKES GRANODIORITE, CENTRAL SAWATCH RANGE, COLORADO**
- 49-9** 9 Charney, Allison Beth\*; Peluso, Jessica; Abbott, Henry; Steinen, Randolph: **ORIGIN OF COLUMNS IN WEST ROCK RIDGE DIABASE: COOLING CRACKS OR TECTONIC JOINTS**
- 49-10** 10 Dyer, Matthew P.\*; Fleming, Thomas H.: **CHEMICAL COMPOSITION OF INTRUSIVE ROCKS FROM THE FAIR HAVEN HEIGHTS AND FOXON REGIONS, HARTFORD BASIN, CONNECTICUT**
- 49-11** 11 Lippitt, Rebecca\*; Frey, Holli M.; Manon, Matthew R.F.: **CRYSTALLIZATION CONDITIONS OF THE TUMALO TUFF, BEND PUMICE, AND SHEVLIN PARK TUFF NEAR SOUTH SISTER, OR**
- 49-12** 12 Brock, Sean\*; Gibson, David: **EMPLACEMENT LEVELS OF DEVONIAN I-TYPE GRANITOIDS OF THE PISCATAQUIS MAGMATIC BELT, CENTRAL AND WESTERN MAINE**

**SESSION NO. 50****D8. Paleontology & Paleocology (Posters)**

8:00 AM, Holiday Inn - Portland by the Bay, Casco Bay Hall

Authors will be present from 9 to 11 AM

Booth #

- 50-1** 13 Feldman, Howard R.\*; Belowich, Talia J.: **A PALEOBIOGEOGRAPHIC COMPARISON BETWEEN MEDITERRANEAN IBERIAN TRIASSIC FAUNAS AND THOSE OF THE SEPHARDIC PROVINCE**
- 50-2** 14 Fish, Rebecca\*; Buynevich, Ilya V.: **TRIASSIC FISH TALE: QUANTIFYING THE GEOMETRY OF UNDICHTNA TRACES (LOCATONG FORMATION, CARNIAN, SE PENNSYLVANIA)**

- 50-3 15 Huxley, Robert\*; Knell, Michael J.; Weinbaum, Jonathan: **USE OF MICROVERTEBRATE FOSSILS IN DETERMINING DEPOSITIONAL ENVIRONMENT OF THE SONSELA MEMBER, CHINLE FORMATION, ARIZONA**
- 50-4 16 Wizevich, Michael C.\*; Kisluk, Isabelle; Reichard-Flynn, Willow R.; Keebler, Abby; Evans, Shannon N.; Simpson, Edward: **FLUVIAL ARCHITECTURE OF EXHUMED AND INVERTED PALEOCHANNELS OF THE EARLY CRETACEOUS CEDAR MOUNTAIN FORMATION OF EAST-CENTRAL UTAH**
- 50-5 17 Every, Madeline\*; Rascoe, Sean; Silbert, Zachary; Harrison, Sara; Vitevitch, Carl; Harrington, Patrick; Westman, Daniel; Adams, David; Ebert, James R.: **ORIENTATION OF CEPHALOPODS AS PALEOCURRENT INDICATORS IN THE GREEN VEDDER MEMBER, MANLIUS FORMATION, NEW YORK STATE**
- 50-6 18 Rettew, Eleanor\*; Marrone, Thomas; Makarius, Gregory; Szawiel, Alexander; Harsha, Gwenn; Eldred, Jarod; Morlang, Dylan; Ebert, James R.: **ORIENTATION OF GASTROPODS AS PALEOCURRENT INDICATORS IN THE GREEN VEDDER MEMBER, MANLIUS FORMATION, NEW YORK STATE**
- 50-7 19 Hyatt, James A.\*; Drzewiecki, Peter; Getty, Patrick: **PHOTOGRAMETRIC ANALYSES OF: (1) CROSS-CUTTING RELATIONSHIPS BETWEEN *EUBRONTES* TRACKS AND BEDDING, AND (2) MORPHOLOGIES OF UNIDENTIFIED TRACE FOSSILS AT DINOSAUR STATE PARK, CT**
- 50-8 20 Bora, Erick T.\*; Drzewiecki, Peter A.: **REINTERPRETATION OF THE SEDIMENTOLOGY AND STRATIGRAPHY OF THE JURASSIC EAST BERLIN FORMATION AT DINOSAUR STATE PARK, ROCKY HILL, CT**
- 50-9 21 Toscanini, Marcello J.\*; Getty, Patrick; Cullen, James L.: **SIZE VARIATION OF *ANOMOEPUS* TRACKS IN THE PORTLAND FORMATION AT DINOSAUR FOOTPRINT RESERVATION, HOLYOKE, MA**
- 50-10 22 Bailey, Richard H.\*; Galli, Kenneth G.: **DEPOSITIONAL MECHANISMS AND PALEOENVIRONMENTS OF LAMINATED FINE GRAINED FACIES IN THE EDIACARAN BOSTON BAY GROUP**
- 50-11 23 Malanoski, Cooper M.\*; Leone, Tiffany C.; McRoberts, Christopher: **CRINOID STEREOM MICROSTRUCTURE AND CARBONATE DIAGENESIS IN THE LOWER DEVONIAN, BECRAFT FORMATION FROM NEW YORK**

**SESSION NO. 51*****T13. River Corridor Processes and Related Decision Making (Posters) (GSA Energy Geology Division; GSA Geology and Society Division; GSA Hydrogeology Division)***

8:00 AM, Holiday Inn - Portland by the Bay, Casco Bay Hall

Authors will be present from 9 to 11 AM

Booth #

- 51-1 24 Connelly, Caitlin\*; Hanel, Devin; Hong, Paul; Keeley, Casey; Wiebe, Miranda; Hay, Carling C.: **THE EFFECTS OF DAM REMOVAL ON SEA LEVEL AND THE MEKONG RIVER REGION AS A PROXY FOR CLIMATE-SENSITIVE COMMUNITIES**
- 51-2 25 Andonie, Elizabeth\*; McGeown, Max; Verheyden, Anouk: **ORGANIC POLLUTION IN URBAN AND RURAL STREAMS IN THE SCHENECTADY-SCHOHARIE REGION OF UPSTATE NEW YORK**
- 51-3 26 Bernstein, Alec\*: **ADDRESSING CLIMATE CHANGE UNCERTAINTIES IN THE INTERNATIONAL JOINT COMMISSION'S RIVER BASIN MANAGEMENT MANDATES: THE ST. CROIX RIVER CASE STUDY**
- 51-4 27 Bajracharya, Prashanta\*; Jain, Shaleen; Coker, Dan; Smith, Sean M.C.: **UNDERSTANDING HYDROLOGIC, GEOLOGIC, AND CLIMATE CONTROLS ON WETLAND WATER STORAGE: A DIAGNOSTIC STUDY**
- 51-5 28 Fields, Jordan\*; Renshaw, Carl E.; Magilligan, Francis J.: **RIVER RECOVERY AND BEDFORM EVOLUTION IN A NEW ENGLAND STREAM POST-DAM REMOVAL**

- 51-6 29 Marke, John D.\*; Peck, John A.: **CONTINUED MONITORING OF THE GEOMORPHOLOGICAL AND SEDIMENTOLOGICAL CHANGES TO THE MIDDLE CUYAHOGA RIVER, OHIO, AS A RESULT OF TWO DAM REMOVALS**
- 51-7 30 Olsen, Christian\*; Lightbody, Anne; Smith, Sean M.; Gold, Arthur J.: **USING RESERVOIR SIZE, WATERSHED CHARACTERISTICS, AND SEDIMENT TRANSPORT PROXIES TO ESTIMATE IMPOUNDED SEDIMENT VOLUME AND DOMINANT GRAIN SIZE AT DAMS IN NEW ENGLAND**
- 51-8 31 Schloss, Ralph\*; Sullivan, Alison; Walley, Benjamin; Kanauer, Nicholas; Kensell, Michael; Nesel, Rebecca; Serowik, Caitlin; Sorensen, Mary; Weiman, Christopher D.; Stroup, Justin; Valentino, David W.: **MONITORING SUBSURFACE WATER FLOW THROUGH AN EARTHEN DAM USING ELECTRICAL RESISTIVITY, RICE CREEK FIELD STATION, OSWEGO, NEW YORK**

**SESSION NO. 52*****T15. Reconstructing Past Climate from the Geologic Record of Ice Sheets and Mountain Glaciers (Posters)***

8:00 AM, Holiday Inn - Portland by the Bay, Casco Bay Hall

Authors will be present from 9 to 11 AM

Booth #

- 52-1 32 Mattas, Laura Alexandra\*; Strand, Peter D.; Putnam, Aaron E.; Lindsay, Benjamin P.; Radue, Mariah J.; Zhou, Weijian; An, Zhisheng: **A <sup>10</sup>BE CHRONOLOGY OF MORAINES DEPOSITED DURING THE LOCAL LAST GLACIAL MAXIMUM IN THE SHALULI SHAN, SOUTHEASTERN TIBETAN PLATEAU, SICHUAN PROVINCE, CHINA**
- 52-2 33 Miles, Maraina\*; Hall, Brenda L.; Denton, George H.: **RECONSTRUCTING THE BEHAVIOR OF THE LAND-TERMINATING WALCOTT GLACIER SINCE THE LAST GLACIAL MAXIMUM IN THE ROYAL SOCIETY RANGE, ANTARCTICA**
- 52-3 34 Walther, Tess L.\*; Hall, Brenda L.; Denton, George H.: **RECONSTRUCTION OF KOETTLITZ GLACIER IN THE MCMURDO SOUND REGION, ANTARCTICA DURING THE LAST GLACIAL MAXIMUM AND TERMINATION**
- 52-4 35 Reahl, Jocelyn N.\*; Bergmann, Kristin D.; Cantine, Marjorie D.: **LINKING SEDIMENTARY TEXTURES TO NEOPROTEROZOIC CLIMATE DYNAMICS**
- 52-5 36 Rubin, Paul A.\*: **SUBGLACIAL KARST DEVELOPMENT IN EAST-CENTRAL NEW YORK STATE**
- 52-6 37 Rubin, Paul A.\*: **STRUCTURAL CONTROL ON CAVE DEVELOPMENT IN A FOLD-THRUST BELT**

**SESSION NO. 53*****T16. Insights on the Ongoing Dynamics of Northeastern North America from Geology and Geophysics (Posters)***

8:00 AM, Holiday Inn - Portland by the Bay, Casco Bay Hall

Authors will be present from 9 to 11 AM

Booth #

- 53-1 38 Ebel, John E.\*: **A DETAILED GRAVITY SURVEY OF THE NEWBURYPORT, MASSACHUSETTS AREA LOOKING FOR THE 1727 EARTHQUAKE FAULT**
- 53-2 39 Hillenbrand, Ian W.\*; Williams, Michael L.: **A GEOLOGIC DATABASE FOR NEW ENGLAND: A NEW TOOL FOR ACCESSING, ANALYZING, AND VISUALIZING GEOLOGIC DATA**
- 53-3 40 Salazar, Emma L.\*; Schroeder, Timothy; Amidon, William H.: **STABLE ISOTOPE ANALYSES OF POST-RIFTING CALCITE VEINS IN THE LAKE CHAMPLAIN BASIN: A RECORD OF TECTONIC REJUVENATION?**
- 53-4 41 Meehan, Kimberly C.; Bartlett, Kimberly\*; Kowalski, Cody; Lash, Gary G.; Bembia, Paul; Bembia, Paul: **CO-OCCURRENCE OF MICROSPHERULES AND CONCRETION BEDS IN DEVONIAN SHALE BEDS OF WESTERN NEW YORK**

- 53-5 42 Murray, Phoebe F.\*; James, Caroline K.; Walker, Jeff: **ALTERATION MINERALOGY IN PILLOWS AND INTERPILLOW BRECCIA, TALCOTT BASALT, MERIDEN, CT, USA**
- 53-6 43 Cooper Boemmels, Jennifer\*; Crespi, Jean; Fleming, Thomas H.: **EARLY CRETACEOUS MAGMATISM IN WESTERN VERMONT AND EASTERN NEW YORK: TIMING, GEOCHEMISTRY, AND ROLE IN THE POSTRIFT EVOLUTION OF THE EASTERN NORTH AMERICAN MARGIN**
- 53-7 44 Buchanan, J. Wesley\*; Severson, Allison R.; Kuiper, Yvette D.; Long, Maureen D.: **AN UPDATED MODEL FOR THE TECTONIC EVOLUTION OF THE SOUTHEASTERN NEW ENGLAND APPALACHIANS ALONG THE LATITUDE OF MASSACHUSETTS**
- 53-8 45 Starace, Andrew\*: **THE GEOLOGY OF SPLIT ROCK FALLS**

## Booth #

- 54-1 46 Hollocher, Kurt\*; Van Nostrand, Maria; Robinson, Peter; Walsh, Emily O.: **IGNEOUS GEOCHEMISTRY OF THE BLÅHØ NAPPE OF THE MIDDLE ALLOCHTHON, NORWEGIAN CALEDONIDES: A DEEPLY SUBDUCTED SEGMENT OF ROCKS GEOCHEMICALLY SIMILAR TO THOSE EXPOSED IN THE STØREN GROUP OF THE UPPER ALLOCHTHON**
- 54-2 47 Barr, Sandra M.\*; Johnson, Susan C.; Dunning, Greg R.; van Rooyen, Deanne; White, Chris E.; Park, Adrian F.: **NEW U-PB ZIRCON AGES FROM THE CALEDONIAN HIGHLANDS, SOUTHERN NEW BRUNSWICK, CANADA: IMPLICATIONS FOR MAGMATIC EVOLUTION IN AVALONIA**
- 54-3 48 Bunyon, Enock Q.\*; Schoonmaker, Adam: **GEOCHEMICAL STUDY OF LIKELY CAMBRIAN OR ORDOVICIAN AGE ROCKS OF THE AVERY BROOK FORMATION AND AN UNNAMED TONALITE NEAR CAUCOMGOMOC LAKE, NORTHERN MAINE**

**SESSION NO. 54*****T18. Peri-Gondwanan Terranes and Their Origins: What Do We Really Know? (Posters)***

8:00 AM, Holiday Inn - Portland by the Bay, Casco Bay Hall

Authors will be present from 9 to 11 AM

# Index of Authors



How to use the indexing system:

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

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

Example: Andronikides, Alex ..... 7-4\*

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

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

\*denotes presenter



## A

Abbott, Dallas 38-5  
Abbott, Dallas H. 38-6\*  
Abbott, Henry 49-9  
Abbott, Henry W. 9-5\*  
Abbott, Mark B. 5-2, 5-4  
Adams, David 50-5  
Aleinikoff, John N. 1-7, 12-6, 46-5, 47-4\*  
Alexander, Jane 4-4\*  
Allaart, Lis 37-2  
Alldred, Mary 11-3, 14-2, 19-3\*  
Almer, Heather 2-5  
Amidon, William H. 7-5, 53-3  
Amir-Lin, Erika 34-6\*  
Amri, Isma 39-11  
An, Zhisheng 37-5, 52-1  
Anderson, Arthur 15-7  
Anderson, Hannah 43-2\*  
Anderson, Walter A. 13-1\*, 28-1, 28-2  
Andonie, Elizabeth 51-2\*  
Andronikides, Alex 7-4\*, 49-3\*  
Appaluccio, Elizabeth 49-2  
Aragon, John C. 38-10  
Aragón Oreggo, Maria Fé 10-1, 18-3\*  
Arcone, Steven 36-2  
Armstrong, Emma 45-6  
Asmerom, Yemane 7-3  
Aspey, Alexandria R. 20-11  
Augenstein, Alyson 19-10  
August, Pete V. 19-10  
Avelar Flores, Alex 39-5  
Avery, Emma L. 19-1\*  
Avila Sanchez, Jennifer 4-4  
Ayotte, Joseph D. 24-9  
Ayuso, Robert A. 1-7

## B

Babb, Ivar 35-3\*  
Babcock, Esther 37-10  
Bafumo, David 19-5\*  
Bagby, Michael 20-12\*  
Bailey, David G. 21-4  
Bailey, Richard H. 50-10\*  
Bajracharya, Prashanta 51-4\*  
Baker, Gregory S. 41-12  
Baldauf, Paul 41-12  
Balingier, Thomas 27-16  
Balliet, Morgan 39-9\*  
Balogh-Brunstad, Zsuzsanna 14-4\*, 14-5  
Banik, Tenley J. 23-2, 23-4\*  
Baranes, Hannah 43-4, 45-10\*  
Baranes, Hannah E. 45-5  
Barber, Donald C. 4-10  
Barnes, Melissa 27-16  
Barr, S.M. 26-9  
Barr, Sandra M. 16-1\*, 16-2, 16-3, 26-1, 26-6, 26-7, 46-6, 54-2\*  
Barrett, Lauren 9-12\*, 9-13  
Bartlett, Kimberly 53-4\*  
Battifarano, Oriana K. 9-10, 34-2, 34-3\*

Becker, Naomi A. 21-7\*  
Bedaso, Zelalem K. 27-3  
Belanger, Bryce K. 7-5\*  
Belaval, Marcel 24-9, 34-5  
Belkin, Harvey E. 1-2  
Belowich, Talia J. 50-1  
Bembia, Paul 53-4  
Benediktsson, Ivar Örn 42-2  
Benimoff, Alan 39-4  
Bennett, Hayley I. 19-9, 19-12\*  
Beno, Carl J. 2-1  
Bergmann, Kristin D. 52-4  
Berke, Melissa A. 11-8  
Berman, Mary Jane 15-1  
Bernstein, Alec 51-3\*  
Besancon, James 9-7, 9-10\*, 34-2, 34-3  
Bettke, Lindsay N. 29-1\*  
Bhajan, Liam 9-7\*, 34-2  
Bhattacharyya, Prajukti 23-1\*  
Biela, Kimberley 21-8, 21-9\*  
Bierly, Aaron D. 9-1\*  
Bierman, Paul R. 13-3, 13-4, 13-5, 18-1  
Binkhorst, Gordon K. 34-9  
Bird, Broxton W. 20-11  
Birdsall, Courtney 19-13\*  
Biscaye, Pierre E. 37-12  
Biskup, Ksawery J. 7-7  
Blauss, Joseph 8-4\*  
Bleeker, Wouter 3-6, 31-1  
Bloch, Roger B. 32-5\*  
Blumenthal, Alex 27-5  
Bobik, Theodore R. 14-9\*  
Boettner, Madison 19-2\*  
Bogue, Benjamin L. 39-12\*  
Bookwala, Kamal 7-1\*  
Bora, Erick T. 50-8\*  
Boroughs, Scott 49-4  
Borrelli, Jonathan J. 19-3  
Borrelli, Mark 4-3\*, 4-5, 4-7  
Bory, Aloys 37-12  
Bosbyshell, Howell 40-1\*  
Bothner, Wallace A. 1-8\*  
Boucher, Brandon 21-5  
Boulger, Erin 27-8\*, 27-11  
Boutt, David F. 27-4, 34-5  
Brabander, Daniel J. 20-1, 34-8  
Bradley, D.C. 16-5  
Bradley, Dwight 26-4\*, 38-2  
Bradley, Raymond S. 5-5  
Braithwaite, Brendan Robert 11-5\*  
Brandes, David 36-3, 41-14  
Braun, Duane D. 8-1\*, 13-3\*  
Brock, Sean 49-12\*  
Broman, Bonnie 31-3  
Brouillette, Christopher 15-7  
Browning-Hanson, Joseph 32-1\*  
Bruce, Charles 8-10\*  
Brugger, Keith A. 37-4\*  
Brunstad, Keith A. 20-12  
Bryant, Nolen Belle 20-1\*  
Bryce, Julia G. 24-9  
Buchanan, J. Wesley 53-7\*

Bunyon, Enock Q. 54-3\*  
Burchsted, Denise 36-4  
Burgess, Jerry L. 21-7  
Burkhart, Patrick A. 41-12  
Burney, David 23-3  
Burton, William C. 1-2\*  
Bush, Mark 5-2  
Bute, Sophia 10-3\*  
Buynevich, Ilya V. 14-12\*, 15-1\*, 19-7, 19-8, 41-1, 41-2\*, 41-3, 41-4, 41-5, 50-2  
Buzeta, Rachel Kristine 27-3\*  
Byers, Colton W. 41-12

## C

Caffee, Marc W. 13-4  
Calentti, Manlio J. 39-2\*  
Callanan, Jennifer R. 14-1  
Campbell, Seth 36-2, 37-1  
Cantine, Marjorie D. 52-4  
Cao, Wentao 39-1  
Carbone, Gabriel M. 49-4\*  
Cardace, Dawn 14-3\*  
Carley, Tamara L. 23-2\*, 23-4, 23-6, 42-1  
Carlisle, Ian D. 24-9\*  
Carrigan, Emily 19-9, 19-12  
Cartwright, Samuel F.A. 46-4  
Casey, Patti 24-2  
Castañeda, Isla S. 5-5  
Castiblanco, Ursula D. 17-3\*  
Castle, Evan 49-2  
Cavagnaro, David B. 32-4\*, 37-7  
Cerling, Thure E. 2-1  
Cerrato, R.M. 35-2  
Chan, Marjorie A. 2-1\*  
Chang, Clara 20-7\*  
Charney, Allison Beth 49-6, 49-9\*  
Charnock, Robert 26-11  
Chaves, Elize 20-10  
Chen, Christine Y. 5-2\*, 5-4, 20-2  
Cheney, John T. 40-2  
Chesler, Aaron 37-11\*  
Chiarenzelli, Jeffrey 40-5, 47-3\*  
Chiarenzelli, Jeffrey R. 47-2  
Chipman, Jonathan W. 37-7  
Cho, Sun A. 20-7  
Choi, Chong Seok 41-5  
Chormann, Alaina G. 7-3\*  
Chowdhury, Shafiu H. 11-9  
Christy, Penelope M. 17-6\*, 27-9  
Cilia, Elizabeth 19-9, 19-12  
Cipar, John J. 38-3\*  
Claesson, Stefan 4-2  
Coble, Matthew 12-1  
Coble, Matthew A. 38-1  
Coder, Bailey 27-16  
Cohen, Annie P. 40-2\*  
Cohen, Michael 19-4  
Cohen, Sophie 27-5\*  
Coker, Dan 51-4  
Cole, Matthew C. 21-3\*  
Cole-Dai, Jihong 37-11

Collins, Mathias J. 36-1, 45-9\*  
Comas, Xavier 48-5  
Comstock, Jeff 24-2  
Congdon, Robert 18-5  
Connelly, Caitlin 51-1\*  
Connors, Mary Elizabeth 23-6\*  
Conrey, Richard M. 21-4\*  
Cook, Alden C. 22-1  
Cook, Timothy L. 5-6, 45-3\*, 45-5  
Cooper Boemmels, Jennifer 53-6\*  
Corbett, Lee B. 13-3, 13-4, 13-5, 18-1\*  
Corbin, Nancy 2-5  
Cornell, Sean R. 4-9  
Coughenour, Christopher 43-1\*  
Crespi, Jean 53-6  
Crone, Tim 48-1  
Cronin, Thomas 45-6  
Croteau, Jennifer A. 19-10\*  
Crowley, James L. 12-2, 46-2  
Cruz-Urbe, Alicia M. 3-2, 21-8, 21-9  
Cullen, James L. 50-9  
Cunningham, Dickson 30-4\*, 30-5  
Cunningham, Maxwell 37-6\*  
Curran, H. Allen 15-1, 19-8  
Curtin, Tara M. 20-6  
Cushman, Elizabeth M. 14-8, 14-11

## D

D'Ambrosia, Abigail R. 7-6  
D'Entremont, Nicole 45-6  
Daigneault, Adam 25-7  
Daku, Rachel 27-16  
Dalbo, Brian 27-10\*, 27-12  
Daly, Julia 28-2\*  
Darling, Robert S. 31-5  
DaSilva, Michael 7-7  
Davi, Nicole 7-8  
David, Gabrielle C.L. 45-7\*  
Davis, P. Thompson 13-3, 13-4, 13-5  
Davis, Timothy 14-9  
Deasy, Ryan T. 1-4\*  
Degen, Austin 7-7\*, 7-8  
Del Turco, Andrew 39-5  
Delligatti, Michael 19-15\*  
DeNatale, Douglas 34-6  
Dent, Eliza 14-10\*  
Denton, George H. 37-5, 37-9, 52-2, 52-3  
Desianti, Nina 7-7  
Dethier, David P. 34-10  
Dethier, Evan N. 45-1\*  
Devlin, Bill 46-5  
Devlin, W.J. 1-3\*  
Devlin, William 1-2  
Diamond, Joseph E. 29-1  
Dickson, James L. 37-10  
Dickson, Stephen M. 4-2\*, 35-6\*  
Dietsch, Craig 1-1\*, 16-7, 49-7  
Dillon, Peter 9-7, 34-2  
Dineen, Robert J. 13-10\*  
Disney, Jane 2-3, 10-1  
Dobbs, Kerby M. 35-6

Dokken, Robert 26-2  
Domack, Cynthia R. 17-2, 17-3, 17-5  
Donnelly, Jeffrey 45-6  
Dooley, John 24-5  
Dorais, Michael J. 1-8, 16-4\*  
Douds, Ashley S.B. 12-3  
Doughty, Alice M. 37-7  
Dow, Samantha 20-9  
Dowey, Colin 10-2\*  
Drzewiecki, Peter 30-1\*, 50-7  
Drzewiecki, Peter A. 50-8  
du Toit, Charl D. 21-2\*  
Duffy, Kelsey L. 40-10\*  
DuFrane, S. Andrew 26-2, 46-1  
Dunn, Richard K. 8-7\*  
Dunn, Steven R. 33-3, 33-4  
Dunning, G.R. 26-5, 46-1  
Dunning, Greg 47-7  
Dunning, Greg R. 54-2  
Dyer, Jamie 45-4  
Dyer, Matthew P. 49-10\*

## E

Ebel, John E. 38-3, 53-1\*  
Ebert, James R. 17-1\*, 27-6, 50-5, 50-6  
Eckert, Craig 12-3  
Economos, Rita C. 23-2  
Edwards, Lawrence 5-2  
Egan-Anderson, Eli 11-7  
Ekberg, Mike 27-3  
El Kadiri, Khalil 39-11  
Eldred, Jarod 50-6  
Elick, Jennifer M. 27-16\*  
Enache, Mihaela 7-7  
Erikson, Johan P. 18-4\*  
Ernsberger, Henry 28-3\*  
Eusden, J. Dykstra Jr. 32-3\*  
Evans, Alexandra 36-4\*  
Evans, Dave 3-6, 31-1  
Evans, Kathryn 18-6  
Evans, Mark A. 9-5, 17-6, 39-10, 39-12, 39-13, 40-9, 40-10, 40-11, 40-12  
Evans, Robert 17-6  
Evans, Shannon N. 50-4  
Evans, Stephanie C. 18-6\*  
Every, Madeline 50-5\*

## F

Faehnrich, Karol 32-6  
Falster, Alexander U. 3-3, 3-4, 3-5  
Fang, Yanan 20-7  
Fansler, Jenny 18-6  
Farnsworth, Wesley R. 37-2  
Farrell, Anna 2-3\*, 10-1  
Feldman, Howard R. 50-1\*  
Feng, He 39-6, 40-6\*  
Fennelly, Patrick E. IV 9-8\*  
Fernandez, Alejandra M. 8-3  
Ferraro, Carrie 44-3\*  
Ferris, David 37-1, 37-11  
Fiege, Adrian 23-6  
Fields, Jordan 51-5\*  
Filo, Rachel 24-5  
Finkelstein, David B. 20-6  
Finkenbinder, Matthew S. 20-11  
Fish, Rebecca 41-5, 50-2\*  
Fitzgerald, Eliza J. 11-1\*  
Flannery, Kelly E. 11-7\*  
Fleisher, P. Jay 13-9\*  
Fleming, Thomas H. 49-10, 53-6  
Flint, Juliana M. 11-3\*  
Flood, Clara Margaret 48-2  
Flood, Roger D. 35-2\*  
Ford, Austin T. 17-5\*  
Ford, Heather 38-10  
Forrester, Jodi A. 7-8  
Forster, Taylor 19-13  
Fortin, Marc-Antoine 37-8  
Foust, Joshua 41-10, 41-11\*  
Fowler, Brian K. 13-5\*  
Fox, Lydia K. 20-3\*  
Franzi, David A. 8-8, 8-9, 8-10  
Fratian, Mihai 19-9, 19-12  
Frazer, Ryan E. 1-8  
Fredrick, Kyle C. 9-15\*  
Freeman, Gary 3-3  
Frey, Holli M. 10-3, 49-11  
Frieman, Richard 41-9  
Fuorry, Donald T. 49-1

## G

Gale, Marjorie 10-2  
Gallardo Garcia Freire, Patricio 9-14\*, 25-3  
Galli, Kenneth G. 50-10  
Gao, Haiying 38-4, 38-9, 38-10  
Gardner, Kevin 25-8, 36-4  
Gartner, John D. 45-8\*  
Gaschnig, Richard 21-1, 21-2  
Gates, Alexander E. 31-4  
Gelwick, Katrina D. 14-10  
Gerbi, Christopher C. 22-1, 39-6\*, 39-7, 40-6, 40-7  
Germanoski, Dru 36-3\*, 41-14  
Gervais, Felix 33-1, 33-2  
Getty, Patrick 50-7, 50-9  
Geyer, Alan W. 19-4\*  
Gibson, David 16-3\*, 49-8, 49-12  
Gibson, Sahra 9-6\*, 18-3  
Gilbert, Lisa A. 6-4\*, 39-3  
Gillikin, David P. 7-3, 19-9, 19-12  
Gilotti, Jane A. 12-1\*, 38-1  
Ging, Alexander 24-3\*, 27-4  
Glaser, Paul H. 48-5  
Gleason, Jessie A. 24-5, 24-8  
Glose, Thomas J. 9-8  
Glumac, Bosiljka 15-1  
Gnivecki, Perry L. 15-1  
Goehring, Brent M. 37-7  
Gold, Arthur J. 25-8, 51-7  
Goldhagen, Gillian 38-10  
Goldstein, Steven L. 37-12  
Gomby, Gary 44-1\*  
Gomez, Julianne 27-16  
Goodwin, David H. 19-9, 19-12  
Gorbey, Devon 7-1  
Gordon, Charles 8-8\*  
Gordon, Ryan P. 24-9  
Grannan, Lawrence Lloyd 11-10\*  
Gray, Connor 27-8, 27-11\*  
Gray, K. 33-6  
Greenwood, Scott 36-4  
Griffin, Colin G. 30-6\*  
Griffith, Alden 34-8  
Griffiths, Michael L. 7-7, 7-8  
Grigg, Laurie D. 5-1  
Griggs, Carol B. 8-2\*, 37-3\*  
Grimm, Lucas 9-12, 9-13\*  
Griswold, Frances R. 43-4\*  
Grote, Todd 45-4\*  
Groulier, Pierre-Arthur 47-7\*  
Grover, Timothy W. 47-1  
Guest, Emily 39-1\*  
Guevara, Victor 40-4\*

## H

Håkansson, Lena 37-2  
Hall, Brenda L. 37-8, 52-2, 52-3  
Hall, Sarah R. 2-3, 9-6, 9-14, 10-1, 18-3, 25-3, 37-8\*, 44-2  
Hallen, Christopher P. 9-12, 9-13, 27-8, 27-10, 27-11, 27-12  
Halsor, Sid P. 20-11  
Halsted, Christopher T. 13-4\*  
Hamby, Jeffrey 41-4  
Hamill, Daniel D. 45-7  
Hamilton, Nathan D. 15-2\*, 15-6\*  
Handley, Michael 19-14, 37-11  
Hanel, Devin 51-1  
Hanson, Lindley S. 8-4  
Harmon, Natalie 21-8, 21-9  
Harms, Tekla A. 40-2  
Harrington, Patrick 50-5  
Harris, Jonathan 7-8, 14-1  
Harrison, Matthew 27-5  
Harrison, Sara 50-5  
Harsha, Gwenn 50-6  
Hartford, Danielle 42-3\*  
Hartzell, Brittney 2-5  
Haslam, Sylvie M. 8-3\*  
Hatch, Christine E. 45-8  
Hatfield, Rob 5-2, 5-4  
Hay, Carling C. 19-2, 43-2, 51-1  
Hay, John 21-4  
Hazen, Matthew 14-1  
He, Tammy X. 26-11  
Hege, Arianna 11-9\*  
Helfrich, Autumn L. 27-10, 27-12\*  
Helmke, Martin F. 19-4  
Henkel, Brian 9-14, 25-3\*

Henry, Emilie A. 7-2\*  
Hepburn, J. Christopher 26-10\*, 26-11  
Herman, Greg 9-3, 24-5  
Heyer, Mark 8-9\*  
Higgins, Mark A. 34-9\*  
Higgins, Pennilyn 28-4\*  
Hillenbrand, Ian W. 30-3\*, 53-2\*  
Hitzelberger, Michael 24-3, 27-4\*  
Hluchy, Michele M. 2-4\*  
Hodge, James 39-7\*  
Hodge, James L. 39-6  
Holden, Mark 34-1\*, 34-4  
Hollister, Kayla V. 9-11\*  
Hollocher, Kurt 10-3, 54-1\*  
Holm-Denoma, Christopher S. 12-2  
Holyoke, Caleb III 39-14  
Holzer, Margaret 44-3  
Hon, Rudi 9-7, 34-2\*  
Hon, Rudolph 9-10, 34-3  
Hong, Paul 51-1  
Honsberger, Ian W. 3-6\*, 31-1\*  
Hooke, Roger LeB. 13-2\*  
Hopeck, John 34-1, 34-4\*  
Horton, J. Wright Jr. 1-9  
Hosseini Shakib, Iman 25-8\*  
Hough, Brian 40-3, 41-9  
Howley, Jennifer A. 37-7  
Hoy, Donald 3-2  
Hrynck, Gabriel 15-7\*  
Hubeny, J. Bradford 8-4, 20-1, 20-8  
Hudson, W. Donald Jr. 28-1\*  
Hughes, Brendan 27-7\*  
Hung, Caroline 39-3\*  
Hunt, Matthew 29-2\*  
Hurrey, Colin 41-3  
Huxley, Robert 50-3\*  
Huybers, Kathleen 20-2  
Hyatt, James A. 50-7\*

## I

Iaccarino, Dominique 27-13\*  
Ibanez-Mejia, Mauricio 21-6  
Iervolino, Ashley 7-4  
Ikehara, Ken 19-11  
Indares, Aphrodite 47-5\*, 47-7  
Ingólfsson, Ólafur 37-2  
Introne, Douglas S. 37-1  
Iversen, Andrew J. 20-2\*

## J

Jackson, Margaret S. 37-7\*  
Jacobi, Robert D. 12-3\*  
Jain, Shaleen 25-7, 51-4  
James, Caroline K. 53-5  
Jayawickreme, Dushmantha H. 11-10  
Jercinovic, M.J. 47-1  
Johnson, Scott E. 22-1\*, 39-6, 39-7, 39-8, 40-6, 40-7  
Johnson, Susan C. 16-2\*, 54-2  
Jordan, Brennan T. 18-7\*, 23-4, 23-5\*  
Joseph, Melissa 11-2\*

## K

Kaelin, Samuel T. 49-5\*  
Kaiser, Adam 19-15  
Kalakay, Thomas 39-5  
Kanamaru, Kinuyo 45-5  
Kanamatsu, Toshiya 19-11  
Kanauer, Nicholas 51-8  
Kane, Evan O. 24-7  
Kaplan, Michael R. 37-6, 37-12  
Karabinos, Paul 46-2\*  
Karig, Daniel E. 13-11\*  
Karimi, Bobak 27-2, 39-9, 41-10, 41-11, 48-4\*  
Karmolinski, Milanka 19-7  
Kavanagh-Lepage, Charles 33-1\*  
Keebler, Abby 50-4  
Keeley, Casey 51-1  
Keh, Oliver 21-4  
Kelley, Alice R. 15-8\*  
Kelley, Joseph 35-4\*  
Kelly, Evan 27-6  
Kelly, Meredith A. 37-7  
Kenna, Timothy C. 19-15  
Kensell, Michael 31-4\*, 51-8  
Keohane, Timothy 19-2  
Keyworth, Amy J. 24-7\*  
Kim, Jonathan J. 24-2\*, 27-4, 30-2, 34-5\*

Kinney, Sean T. 1-5, 16-5, 20-7, 38-2\*  
Kisluk, Isabelle 27-9, 50-4  
Kjellman, Sofia 37-2  
Klepeis, Keith 30-2  
Klinges, Keri 41-5  
Knapp, Leah 40-3\*  
Knapp, Samuel A. 8-6  
Knell, Michael J. 50-3  
Knox, Kyle 15-5  
Knox, Madison 30-4, 30-5  
Knudstrup, Renee 20-8  
Knuepfer, Peter L.K. 25-2  
Knyfd, Kaytlynn 7-8\*  
Koch, Megan M. 32-6\*  
Kodama, Kenneth P. 14-10  
Koester, Alexandria J. 13-4  
Koffman, Bess 19-14, 36-2, 37-11, 37-12\*  
Kolkas, Mossbah 27-15\*  
Kominoski, Sara 39-4\*  
Koons, Peter O. 25-9  
Kopczanski, Karen A. 15-1, 19-8, 41-2, 41-3, 41-4, 41-5  
Kopfer, Brandon 27-19\*  
Korsgaard, Niels J. 37-2  
Kosminska, Karolina 38-1\*  
Kovaleski, Alexandra J. 27-14\*, 40-12\*  
Kowalski, Cody 53-4  
Kramer, Henry D. 41-12\*  
Kraun, Benjamin 4-2, 35-6  
Kreutz, Karl J. 37-1\*, 37-11, 37-12  
Krezdorn, Kyle Matthew 4-9\*  
Kromer, Bernd 8-2  
Kuiper, Yvette D. 12-2\*, 26-10, 26-11\*, 38-10, 53-7  
Kumagai, Aya 18-3  
Kunk, Michael J. 1-9\*

## L

Laabs, Benjamin 7-5  
Labat, Gaëlle Morgane 33-2\*  
Ladlow, Caroline 45-5\*  
Lamb, Trevor 15-7  
Langenfeld, Betony 48-2  
Langschultz, James 49-2\*  
LaPat, Ashley 41-4  
Larsen, Isaac J. 45-8  
Larsen, Silje 24-1, 24-6\*  
Larson, Cecilia R. 48-2\*  
Lash, Gary G. 53-4  
Laurie, Isabella 43-2  
Lawrence, Kira T. 7-1, 7-2  
Leach, Peter A. 15-4\*  
LeBivic, Rejanne 25-1  
Lee, Madison 20-7  
Lee, Rachel 40-3, 40-13, 41-9  
Lee, Shinae 1-3  
Legare, Bryan 4-3  
Lehmann, Sophie B. 5-4  
LeNoir, James 5-6\*  
Lentz, David R. 3-2  
Leonard, Aaron 21-1\*  
Leone, Tiffany C. 50-11  
Levin, Vadim 38-5, 38-7\*, 38-8  
Levitt, Joseph P. 24-1\*  
Lewis, Reed S. 21-1, 21-2  
Li, Cong 38-4\*  
Li, Yiran 38-7, 38-8\*  
Lightbody, Anne 25-5\*, 25-8, 51-7  
Lindsay, Benjamin P. 52-1  
Lippert, Peter C. 2-1  
Lippitt, Rebecca 49-11\*  
Livoti, Dominic 30-5\*  
Loeffler, Adam 8-7  
Long, Maureen D. 38-9, 38-10\*, 53-7  
Longpre, Marc-Antoine 49-3  
Loubsky-Lonergan, Emma 20-6\*  
Löwngren, Sara 9-6, 10-1, 18-3, 25-3  
Lowry, Christopher 9-8, 9-11  
Lubenow, Brady L. 24-5  
Ludman, Allan 12-5\*, 46-5\*  
Luo, Yan 26-2  
Lyons, Kathryn 19-7, 19-8\*, 41-5\*

## M

Ma, Qian 27-17\*  
Maas, Kendra 10-4, 34-9  
MacHattie, Trevor G. 26-6  
MacLennan, Scott A. 16-5, 38-2  
Magdon, Irene 5-1\*

Magilligan, Francis J. 36-5, 36-6\*, 45-1, 51-5  
 Maiorano, Gabriella 41-4  
 Makarius, Gregory 50-6  
 Mako, Calvin A. 40-4  
 Makovsky, Kyle A. 47-6\*  
 Malanoski, Cooper M. 31-5\*, 50-11\*  
 Mana, Sara 42-3  
 Manon, Matthew R.F. 21-3, 49-11  
 Marek, Rudolph S. 11-4\*  
 Marenco, Pedro J. 4-10  
 MARK, Samuel 20-11, 43-3  
 Marke, John D. 51-6\*  
 Markley, Michelle 33-3, 33-4\*  
 Marrone, Thomas 50-6  
 Marschall, Horst 21-8, 21-9  
 Martin, Alexander C. 41-2  
 Martinez, Francisco J. 1-1  
 Martinez-Sacristan, Hernando 27-20\*  
 Martini, Anna 27-13  
 Martini, Anna M. 48-3  
 Maruszczak, Alex D. 23-3  
 Marvinney, Robert G. 26-8, 28-1  
 Masetti, G. 35-5  
 Massonne, Hans-Joachim 39-1  
 Mathur, Ryan 12-3  
 Mattas, Laura Alexandra 52-1\*  
 Matthes, Jaclyn H. 34-8  
 Mattison, Peter 13-5  
 Mattison, Rebecca 13-5  
 Maxwell, Brandon 40-13  
 May, Amanda 27-1\*  
 Mayer, Katherine 27-16  
 McAleer, Ryan J. 1-2, 1-9, 1-10\*, 1-11, 12-6  
 McAvoy, Z. 35-5  
 McCandless, Stephen J. 19-5  
 McCarthy, Francine M.G. 20-8  
 McClary, Kristin J. 26-11  
 McClelland, Bill 12-1  
 McClelland, William C. 32-6, 38-1  
 McCormack, Bryan 4-3  
 McCormick, Michael J. 3-2\*  
 McFarland, Samantha 4-3, 4-7\*  
 McFarlane, Christopher R.M. 21-5\*  
 McGarr, Jeffery Tyler 49-7\*  
 McGee, David 5-2, 5-4, 20-2  
 McGeown, Max 51-2  
 McHugh, Cecilia M.G. 19-11, 19-15  
 McKenzie, Jeffrey M. 37-8  
 McKenzie, Marion A. 42-2\*  
 McMahon, Ryan 27-14, 39-10\*  
 McRoberts, Christopher 50-11  
 Meader, Forrest 49-8\*  
 Meehan, Kimberly C. 53-4  
 Menke, William 38-5\*, 38-6, 38-7  
 Meriaux, Anne-Sophie 37-8  
 Meriney, William 27-16  
 Merrill, Thorn K. 32-3  
 Mersch, Arthur 1-10, 1-11\*  
 Michard, André 12-2  
 Michel, Andrew 16-7\*  
 Miles, Maraina 52-2\*  
 Milinic, Bojan 4-9  
 Miller, Calvin F. 23-2, 23-4  
 Miller, Madelyn G. 29-1  
 Millette, Patricia 6-3  
 Millette, Patricia M. 6-1\*  
 Mills, A.J. 26-5\*  
 Mistikawy, Justin 33-7\*  
 Mitchel, Connor 20-9\*  
 Moecher, David P. 47-6  
 Mogk, David 39-5  
 Moiyallah, Morrison K. 41-2  
 Monecke, Katrin 20-1, 20-8  
 Moning, Alicia 16-1  
 Moore, McCain 19-11\*  
 Morgan, Michael J. 45-7  
 Morlang, Dylan 50-6  
 Moroz, Gabriela 10-1\*, 18-3  
 Morris, Daniel 27-16  
 Morrison, R. 35-5  
 Moskalski, Susanne 19-13, 49-1, 49-2  
 Moss, Cheryl Johnson 13-8\*  
 Moukhsil, Abdelali 47-7  
 Moumou, Abdelhak 39-11\*  
 Mount, Gregory J. 41-8  
 Mount, Jake 27-16  
 Muller, Otto H. 17-4\*  
 Munroe, Jeffrey S. 7-5  
 Muntz, Alexa L. 40-11\*  
 Murdoch, Melissa A. 40-1

Murphy, Ian 40-9\*  
 Murray, Allyson N. 49-1\*  
 Murray, Justin 27-16  
 Murray, Phoebe F. 53-5\*  
 N  
 Nagel-Myers, Judith 17-4  
 Nakileza, Robert 37-7  
 Nathan, Rebecca 14-5\*  
 Neale, Shannon 1-1  
 Nelson, Wendy R. 21-7  
 Nesbitt, Ian M. 36-2\*  
 Nesel, Rebecca 20-4\*, 20-5, 51-8  
 Newcomb, Andrew 25-4\*  
 Newcombe, Hannah 20-8\*  
 Newsom, Bonnie 15-8  
 Newton, Robert M. 8-5\*, 13-6\*  
 Neyedley, Kevin 26-6  
 Nichols, Floyd 11-8\*  
 Nielsen, Martha 34-7\*  
 Niller, Kurt A. 32-3  
 Nikitina, Daria 15-5\*, 19-4  
 Nislow, Keith 36-6  
 Nitsche, Frank 19-15  
 Nixon, Troy 7-8  
 Nizamoff, James 3-3  
 Nogueira, Xavier Rojas 41-4\*  
 Nordyke, Alexandra 24-3  
 Norris, Tyler 41-6\*  
 O  
 O'Connor, Keith 11-8  
 O'Hara, Heidi 19-9\*, 19-12  
 Oakley, Adrienne J. 4-9  
 Oakley, Bryan A. 4-1\*, 4-8, 19-5, 19-10  
 Ogata Bernstein, Jake 4-10\*  
 Olsen, Amanda Albright 14-7\*  
 Olsen, Christian 51-7\*  
 Olsen, Paul E. 1-5\*, 16-5, 20-7, 38-2  
 Ordnung, Ryan 10-4\*  
 Osterberg, Erich C. 37-1, 37-11  
 Oswald, W. Wyatt 45-3  
 Otto, Daniel R. 40-14\*  
 Ouimet, William B. 11-6, 11-7, 20-9  
 Oyewumi, Oluyinka 9-5, 27-9\*, 27-14  
 O'Sullivan, Paul 32-3  
 P  
 Padilla, Abraham De Jesus 23-2  
 Panthi, Jeeban 24-4\*  
 Papaioannou, Eva 44-3  
 Paradis, Kay 45-3  
 Parfitt, Benjamin 21-4  
 Park, Adrian F. 54-2  
 Park Boush, Lisa E. 15-1  
 Patton, Katherine 15-7  
 Paul, John R. 18-3  
 Pazzaglia, Frank J. 14-10  
 Pearson, Adam Jeffrey 29-2  
 Pearson, D. Graham 26-2  
 Peate, David W. 23-3\*  
 Peck, John A. 8-12, 27-19, 51-6  
 Pekar, Stephen F. 7-4  
 Pelletier, Alison R. 41-15\*  
 Peluso, Jessica 49-9  
 Peterman, Emily M. 39-2  
 Peters, Colen R. 44-5\*  
 Peters, Stephen C. 14-10  
 Peterson, Laura C. 7-2  
 Phillips, Jeffrey D. 47-8  
 Piasecki, Frank 8-6  
 Pidgeon, Jarret William 33-6\*  
 Pinke, Brian 41-14\*, 42-1  
 Pinsky, Malin 44-3  
 Pipala, James 25-1\*  
 Pizzuto, James 25-1  
 Plasket, Thomas Z. 41-2  
 Pless, Claire R. 47-1  
 Poland, Ruth 2-3  
 Pollock, Jeffrey C. 26-7\*  
 Pollock, Stephen 26-8, 46-3\*  
 Polyak, Victor J. 7-3  
 Pope, Gregory 14-1  
 Portnoy, Samantha 30-2\*  
 Potapova, Marina 7-7  
 Potter, Noel L. 37-9\*  
 Powers, Michael 15-5, 19-4  
 Price, Seth 20-10  
 Principato, Sarah M. 8-11, 42-2

Pringle, Crystal 19-6\*  
 Procopio, Nicholas A. III 24-5, 24-8\*  
 Putnam, Aaron E. 37-5, 37-9, 37-11, 52-1  
 Putnam, David 26-8  
 Q  
 Quesnell, Timothy J. 8-6\*  
 R  
 Racela, Jason 34-10  
 Radue, Mariah J. 52-1  
 Ramezani, J. 1-8  
 Raphael, Jordan 7-8  
 Rascoe, Sean 50-5  
 Ray, Richard 45-10  
 Rayburn, John A. 29-1  
 Rddad, Larbi 9-3, 31-2\*, 39-11  
 Reahl, Jocelyn N. 52-4\*  
 Reault, Shannon 41-1\*, 41-2  
 Rec, Abigail F. 8-11  
 Reed, Madison 27-16  
 Rees, Garret 19-4  
 Reeve, Andrew S. 48-5\*  
 Regan, Sean P. 33-7, 47-3  
 Reichard-Flynn, Willow R. 50-4  
 Renshaw, Carl 36-5  
 Renshaw, Carl E. 45-1, 51-5  
 Retelle, Michael J. 37-2  
 Rettew, Eleanor 50-6\*  
 Reusch, Douglas N. 32-4, 32-5  
 Reynolds, Alex 27-6\*  
 Richardson, Justin B. 11-1, 11-4, 11-5, 14-6\*  
 Richmond, Nick 25-9\*  
 Ricker, M.C. 11-2  
 Rickerich, Sam F. 4-2  
 Riley, Dillon 41-4  
 Rivers Cole, Jennifer S. 27-18\*  
 Robbins, Gary 10-4  
 Robbins, Gary A. 34-9  
 Roberts, Gillian K. 17-2\*  
 Robinson, Peter 32-2, 54-1  
 Rockafellow-Baldoni, Megan 24-5  
 Rodbell, Donald T. 5-2, 5-4\*, 43-3  
 Roemmele, Christopher 6-2\*, 18-2\*  
 Rogers, Kurt 8-7  
 Rohr, Nicole 19-10  
 Romanowicz, Edwin 34-5  
 Rosen, Madison Liliith 33-3\*  
 Ross, Jenna 20-10\*  
 Rossi, Rebecca K. 36-5\*  
 Rothenberger, Megan 36-3  
 Rouillard, Alexandra 37-2  
 Rowley, Nicholas 6-3\*  
 Roy, Samuel G. 25-7\*, 25-9  
 Rubin, Paul A. 52-5\*, 52-6\*  
 Ruellan, Etienne 12-2  
 Ruger, Edward C.V. 42-1  
 Rupper, Summer B. 20-2  
 Russell, James M. 37-7  
 Russo, Nicholas 9-4\*  
 Ryan, Peter 27-4, 34-5  
 S  
 Salacup, Jeffrey M. 5-5  
 Salazar, Emma L. 24-3, 53-3\*  
 Sambuu, Oyungerele 37-5  
 Samson, Scott D. 47-6  
 Sanchez, Heather 27-16  
 Sandeman, H. 3-6, 26-5, 31-1  
 Sarkar, Chiranjeeb 26-2  
 Sauerzopf, Aubrie 41-5  
 Saunders-Shultz, Che Pablo 48-3\*  
 Savarese, Michael 15-1  
 Savidge, Sabrina 11-2  
 Saylor, Patrick 19-14  
 Schaefer, Joerg M. 37-5, 37-6, 37-9  
 Schaney, Christopher 41-8  
 Scheer, Austin 9-9\*  
 Schloss, Ralph 51-8\*  
 Schmidt, Amanda H. 48-2  
 Schmidt, Calla M. 18-3  
 Schmidt, Keegan L. 21-2  
 Schmitkons, Jonathan P. 20-10, 27-5  
 Schmitt, Axel K. 23-2  
 Schoene, Blair 16-5, 38-2  
 Schofield, David I. 26-2  
 Schomacker, Anders 37-2\*  
 Schoonmaker, Adam 54-3

Schrader, Christian M. 31-3, 49-4  
 Schroeder, Timothy 24-3, 27-4, 34-5, 53-3  
 Schwartz, Roseanne 37-5, 37-9  
 Schweigel, Taylor 12-3  
 Scott, Jeremy 14-1\*  
 Seeber, Leonardo 19-11  
 Selden, Rebecca 44-3  
 Serowik, Caitlin 31-4, 51-8  
 Serpe, Jessica 41-3  
 Servali, Andrea 38-7  
 Setera, Jacob 16-5, 38-2  
 Severs, Matthew J. 49-1, 49-2  
 Severson, Allison R. 53-7  
 Sha, Jingeng 20-7  
 Shah, Anjana K. 3-7, 47-8\*  
 Shakun, Jeremy D. 13-3, 13-4, 13-5, 37-7  
 Sharretts, Tyler L. 41-8\*  
 Shayegan, Maria 41-3  
 Sheraden-Cox, Leafia 20-1  
 Sherif, M.I. 25-1  
 Shteynman, Leah 42-1\*  
 Shumchenia, Emily 35-1\*  
 Siebach, Jacob A. 23-3  
 Siegel, Donald 44-4\*  
 Siggaard-Andersen, Marie-Louise 37-2  
 Silbert, Zachary 50-5  
 Silveira Meyers, Joao 4-9  
 Simblaris, Harry 24-9  
 Simmons, William B. 3-3\*, 3-4, 3-5  
 Simon, David 25-5  
 Simpson, Edward 50-4  
 Singer, Jared W. 21-4  
 Skaggs, Elizabeth R. 25-2\*  
 Slack, John F. 3-1\*, 32-4  
 Slater, Lee 48-5  
 Slovinsky, Peter A. 4-2  
 Smail, Nathan 40-4  
 Smisko, William 27-5  
 Smith, Jason J. 18-5\*  
 Smith, Sean M. 25-4, 25-5, 51-7  
 Smith, Sean M.C. 9-6, 25-7, 25-8, 25-9, 36-2, 51-4  
 Smith, Theresa L. 4-3, 4-5\*  
 Smith-Tripp, Sarah M. 34-8\*  
 Snyder, Noah P. 5-6, 36-1\*, 45-3  
 Sobel, Ilana B. 8-11\*  
 Solar, Gary S. 30-6  
 Solari, Nhia M. 20-1  
 Sombini dos Santos, Gabriel 16-1  
 Song, Bo Ra 22-1, 39-8\*, 40-7  
 Song, Boyoung 14-8, 14-9, 14-11  
 Song, Won Joon 22-1, 40-7\*  
 Sorensen, Mary 20-4, 20-5\*, 51-8  
 Soule, Dax 48-1  
 Sparacio, Christopher A. 14-9, 14-11  
 Spatola, Sofia 14-8\*, 14-11  
 Spayd, Steve 24-5\*, 24-8  
 Spiegel, Jonathan 3-5\*  
 Spiess, Arthur 15-3\*, 15-8  
 Spigel, Kevin M. 5-7\*  
 Spigel, Lindsay 41-7\*  
 Spindler, Rich 11-3  
 Springer, Gregory S. 45-4  
 Springston, George E. 8-7  
 St. Martin, Kevin 44-3  
 Stansfield, Billy 11-6\*  
 Stanton, Bruce 2-3, 10-1  
 Starace, Andrew 53-8\*  
 Stark, Colin 37-6  
 Starr, Joel 12-3  
 Steinen, Randolph 30-1, 49-6, 49-9  
 Steinen, Randolph P. 1-5  
 Steinman, Byron A. 20-11  
 Steinmann, David 7-7  
 Steinschneider, Scott 45-2  
 Stellas, Michael J. 30-1  
 Stephens, Mark 2-5  
 Stewart, E.M. 1-6\*  
 Stoddard, Wilbur 27-9  
 Stone, Joshua S. 21-8\*, 21-9  
 Stoner, Joseph 5-2  
 Stoner, Joseph S. 5-4  
 Stotts, Stephanie 25-1  
 Strand, Peter D. 37-5\*, 52-1  
 Strasser, Michael 19-11  
 Strauss, Justin V. 16-5, 32-2, 32-4, 32-6, 38-2  
 Strock, Kristin E. 20-3  
 Stroiteleva, Yelena 24-5  
 Stroup, Justin 20-4, 20-5, 51-8  
 Sturchio, N.C. 25-1  
 Suarez, Kaitlyn A. 47-1\*



Sullivan, Alison 51-8  
 Sullivan, Walter A. 22-2\*  
 Surrusco, Steven 31-3\*  
 Swanger, Kate M. 37-10\*, 41-15  
 Swanson, Mark T. 40-8\*  
 Swisher, Sierra E. 8-12\*  
 Szawiel, Alexander 50-6

## T

Tal, Irit 5-2  
 Talke, Stefan 45-10  
 Tapia, Pedro 5-2  
 Taylor, Anthony 43-1  
 Taylor, Kaitlin C. 49-6\*  
 Taylor, Ryan D. 3-7\*, 47-8  
 Teegarden, Gregory J. 18-4  
 Tesin, Emilio 48-1\*  
 Tetreault, Troy N. 14-2  
 Thatcher, Diana L. 7-3  
 Thomas, Christopher D. 39-14\*  
 Thomas, Elizabeth K. 9-11  
 Thomas, Margaret A. 30-1, 30-3  
 Thompson, M.D. 26-9\*  
 Thompson, Peter J. 32-2\*  
 Thompson, Woodrow B. 8-5, 13-3  
 Thornburg, Jesse D. 14-8, 14-9, 14-11\*  
 Thornton, Hannah 39-9  
 Thorson, Robert M. 20-9, 25-6\*  
 Thurkettle, Sara A. 45-4  
 Tift, William 5-3\*  
 Tissot, Francois L.H. 21-6  
 Tollerton, Victor P. 17-2, 17-3, 17-5  
 Tompkins, Hannah G.D. 21-6\*  
 Tompkins, Makayla M. 14-2\*  
 Toomey, Michael 45-6\*  
 Toraman, Erkan 33-5, 47-2\*, 47-3  
 Torres, Natalie 41-9\*  
 Toscanini, Marcello J. 50-9\*  
 Town, Caleb Forrest 16-5\*, 38-2  
 Truhlar, Allison 25-7  
 Tunstead, Rob 7-7

## U

Ukstins, Ingrid 42-1  
 Usami, Kazuko 19-11

## V

Valentino, David 47-3  
 Valentino, David W. 31-4, 40-5, 40-13\*, 51-8  
 Valentino, Joshua 40-13  
 Valero-Garces, Blas Lorenzo 5-2  
 Valletta, Rachel D. 37-10  
 Van Hoesen, John 30-2  
 Van Horn, Ryan M. 8-6  
 Van Nostrand, Maria 54-1  
 van Rooyen, Deanne 16-1, 16-2, 16-3, 26-7, 46-6\*, 54-2  
 van Staal, Cees R. 12-4\*, 26-1\*  
 van Vliet, Netta 44-2\*  
 Van Tongeren, Jill 38-2  
 Varney, Madeline R. 4-8\*, 19-10  
 Vasylenko, Klavdiya 19-7\*  
 Vel, Senthil S. 22-1, 39-8  
 Venn, Cynthia 9-12, 9-13, 27-8, 27-10, 27-11, 27-12  
 Verheyden, Anouk 51-2  
 Vickers, Anthony 37-7  
 Viète, Daniel R. 21-7, 26-3\*, 32-1  
 Visser, Nicholas 27-16  
 Vitale, Sarah A. 11-7  
 Vitevitich, Carl 50-5

## W

Wagoner, Laureen 21-4  
 Wake, Cameron P. 37-1  
 Waldron, John W.F. 26-2\*, 32-4, 46-1\*  
 Walk, Erica 41-3\*  
 Walker, Becca 18-3  
 Walker, Jeff 40-14, 53-5  
 Wallace, Kristi L. 19-14  
 Walley, Benjamin 51-8  
 Walowski, Kristina 49-5  
 Walsh, Emily O. 54-1  
 Walsh, Greg J. 12-6  
 Walsh, Gregory J. 1-7\*, 1-11, 3-7, 47-4, 47-8  
 Walters, Jesse B. 21-8, 21-9  
 Walther, Tess L. 52-3\*  
 Wanamaker, Alan D. Jr. 7-3, 19-9, 19-12  
 Wang, Chunzeng 3-2, 26-8\*

Ward, L. 35-5\*  
 Wargo, James 30-5  
 Warner, Travis B. 12-3  
 Webber, Jeffrey R. 39-5\*, 49-1  
 Webber, Karen L. 3-4\*  
 Weber, Ellen C. 20-11\*  
 Weeden, Lori 2-2\*  
 Weidhaas, Nicholas 5-2  
 Weiman, Christopher D. 40-5\*, 51-8  
 Weinbaum, Jonathan 50-3  
 Weinstein, Nathan D. 41-2  
 Weiss, Jake Daren 39-13\*  
 Wells, Annika 43-3\*  
 Wells, Mark 37-11  
 West, Andrew 31-3  
 West, David P. Jr. 40-4, 46-4\*  
 Westerman, David S. 16-6\*  
 Westman, Daniel 41-13\*, 50-5  
 Wetzel, Rose 27-16  
 Whisner, Jennifer 2-5\*, 11-2  
 Whisner, S. Christopher 2-5  
 White, Abby 27-6  
 White, Chris E. 16-1, 16-2, 26-6\*, 26-7, 46-6, 54-2  
 White, Christopher E. 26-1  
 White, Shawna E. 46-1  
 Whiteman, Nicholas R. 4-6\*  
 Whiteside, Jessica H. 1-5  
 Wholey, Heather 15-5  
 Wiebe, Miranda 19-2, 43-2, 51-1  
 Wieman, Scott T. 34-10\*  
 Wigger, Natalie E. 7-6\*  
 Wiley, Katharine 42-1  
 Willan, Christopher G. 12-3  
 Williams, Garnet J. 33-5\*  
 Williams, Michael 47-1  
 Williams, Michael L. 33-7, 38-4, 39-5, 53-2  
 Wilson, John R. 41-14  
 Winckler, Gisela 37-12  
 Winner, Lucas 27-16  
 Winski, Dominic 37-1, 37-11  
 Winsor, Kelsey 37-10  
 Wintsch, R. 1-4  
 Wintsch, R.P. 1-3, 12-6\*  
 Wintsch, Robert P. 1-7, 30-3  
 Wiskemann, Leanne 41-2  
 Wizevich, Michael C. 27-7, 50-4\*

Wizner, Ryan 14-1  
 Wobus, Reinhard A. 39-3  
 Wolff, John A. 49-4  
 Woltner, Katie E. 9-2\*  
 Wong, Tyler 41-5  
 Woodard, Stella C. 7-1  
 Woodruff, Jonathan 45-10  
 Woodruff, Jonathan D. 43-4, 45-5  
 Woods, Arielle 5-2, 5-4  
 Wright, Stephen F. 8-6, 13-7\*  
 Wysocki, Ryan 27-2\*

## X

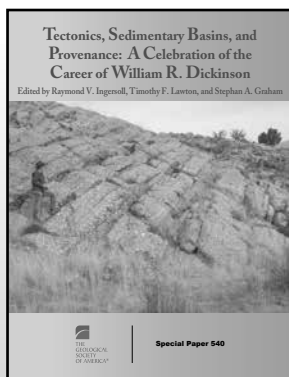
Xie, Zhenxin 38-8

## Y

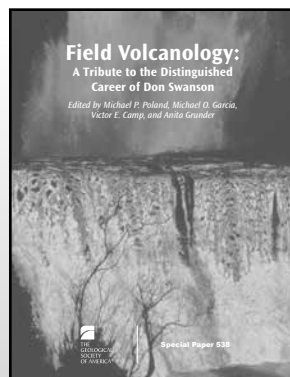
Yanchuck, Michael 41-10\*, 41-11  
 Yang, Ming 27-17  
 Yang, Xiaotao 38-4, 38-9\*, 38-10  
 Yang, Yueheng 27-17  
 Yates, Martin G. 3-2  
 Yavuzcetin, Ozgur 23-1  
 Yellen, Brian 45-2\*  
 Yoder, Meg 19-14\*  
 Young, Richard A. 13-12\*, 22-3\*

## Z

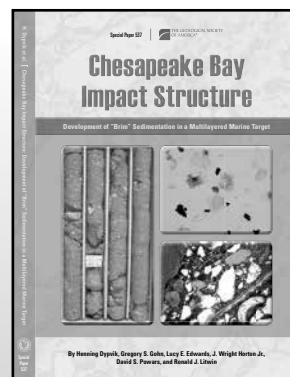
Zagorevski, Alexandre 12-4  
 Zarnoch, Chester 19-3  
 Zhao, Boyang 5-5\*  
 Zhao, Han 27-17  
 Zhao, Zhidan 27-17  
 Zhou, Weijian 37-5, 52-1  
 Zimmerman, Susan R.H. 37-7  
 Ziolkowski, Lori A. 11-8  
 Zubaydov, Murodjon 9-3\*



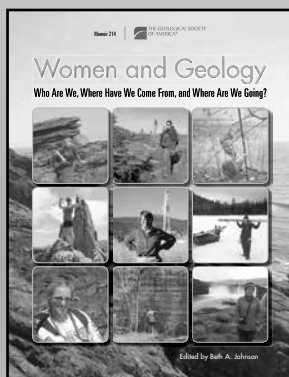
**Tectonics, Sedimentary Basins, and Provenance: A Celebration of the Career of William R. Dickinson**  
*edited by Raymond V. Ingersoll, Timothy F. Lawton, and Stephan A. Graham*  
 SPE540, 757 p., ISBN 9780813725406  
 \$99.00 | member price \$70.00



**Field Volcanology: A Tribute to the Distinguished Career of Don Swanson**  
*edited by Michael P. Poland, Michael O. Garcia, Victor E. Camp, and Anita Grunder*  
 SPE538, 458 p., ISBN 9780813725383  
 \$60.00 | member price \$42.00



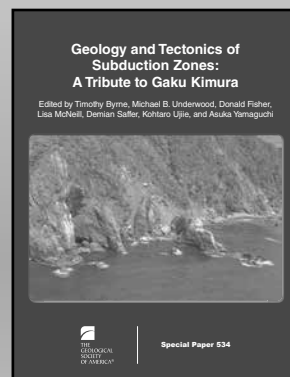
**Chesapeake Bay Impact Structure—Development of “Brim” Sedimentation in a Multilayered Marine Target**  
*by H. Dypvik, G.S. Gohn, L.E. Edwards, J.W. Horton Jr., D.S. Powars, and R.J. Litwin*  
 SPE537, 68 p., ISBN 9780813725376  
 \$38.00 | member price \$26.00



**Women and Geology: Who Are We, Where Have We Come From, and Where Are We Going?**  
*edited by Beth A. Johnson*  
 MWR214, 128 p., ISBN 9780813712147  
 \$60.00 | member price \$42.00



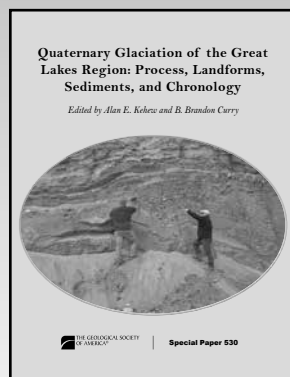
**Museums at the Forefront of the History and Philosophy of Geology: History Made, History in the Making**  
*edited by Gary D. Rosenberg and Renee M. Clary*  
 SPE535, 348 p., ISBN 9780813725352  
 \$89.00 | member price \$62.00



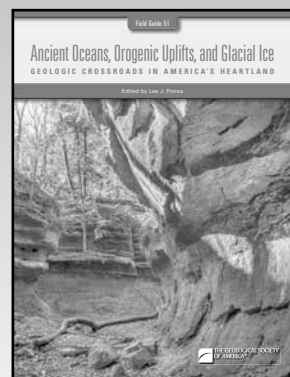
**Geology and Tectonics of Subduction Zones: A Tribute to Gaku Kimura**  
*edited by T. Byrne, M.B. Underwood, D. Fisher, L. McNeill, D. Saffer, K. Ujiie, and A. Yamaguchi*  
 SPE534, 215 p., ISBN 9780813725345  
 \$40.00 | member price \$28.00



**Paleozoic Stratigraphy and Resources of the Michigan Basin**  
*edited by G. Michael Grammer, William B. Harrison III, and David A. Barnes*  
 SPE531, 339 p., ISBN 9780813725314  
 \$60.00 | member price \$42.00



**Quaternary Glaciation of the Great Lakes Region: Process, Landforms, Sediments, and Chronology**  
*edited by Alan E. Kehew and B. Brandon Curry*  
 SPE530, 244 p., ISBN 9780813725307  
 \$42.00 | member price \$30.00



**Ancient Oceans, Orogenic Uplifts, and Glacial Ice: Geologic Crossroads in America's Heartland**  
*edited by Lee J. Florea*  
 FLD051, 433 p., ISBN 9780813700519  
 \$64.00 | member price \$45.00

<http://rock.geosociety.org/store/>

# CODE OF CONDUCT AT GSA EVENTS



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

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

## Expected Behavior

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

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

## Procedures to be followed in an emergency situation:

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

## Unacceptable Behavior includes but is not limited to:

- Harassment, intimidation, or discrimination.

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

Examples of unacceptable behavior include but are not limited to:

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

## Consequences of Unacceptable Behavior

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

## Reporting Unacceptable Behavior

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

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

# Add New Layers to Your Quaternary Research

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

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

**BETA**  
Beta Analytic  
[www.radiocarbon.com](http://www.radiocarbon.com)