



National Association of Geoscience Teachers
Southeastern Section Newsletter
Summer-Fall 2017

Inside:

President's message p. 2
SE GSA teacher field Trip p. 3
Meeting calendar p. 4
FOSSIL Project roadshow webinar p. 5
State news in geoscience education p. 5
Your state representatives p. 17

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geogiarocks.us/nagt

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www.geosociety.org

US Geological Survey
www.usgs.gov

Earth Science Week
www.agiweb.org
www.earthscienceworld.org
www.earthsciweek.org

Winter-Spring 2018

Newsletter Deadline:

February 15, 2018. Please
send news items to Bill at
bill@geogiarocks.us
or to your state rep by Feb. 1.

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President's message

by Frank Forcino, SENAGT president

Hello Southeastern Geoscience Educators!

I was fortunate to take on the position of president of SENAGT this past March. As I begin my fourth year of living in the Southeast, it excites me to be able to contribute to my community with the aid of the broad reach of NAGT. I am also starting my second year as the Science Education Program Director at Western Carolina University. Here, I am working to prepare students to teach in the secondary science classroom. My goal is to ensure young teachers have both the content knowledge and the pedagogical skills to face the challenges of today's high schools.

I first want to offer my support, along with that of SENAGT, to all K12 educators in the region. If there are any resources you think SENAGT might be able to offer, please do not hesitate to contact me. Furthermore, one of my primary goals as president of SENAGT is to get more Earth science educators involved in the section. I want SENAGT to be a valued resource for teachers in times of need. Hopefully, continuing our traditions at the Southeastern Section Geological Society of America conference will draw in additional K12 participants. This coming year we are once again offering an excellent field trip geared toward advancing the geologic knowledge of K12 teachers. However, I welcome new ideas on how to broaden our outreach to K12 educators.



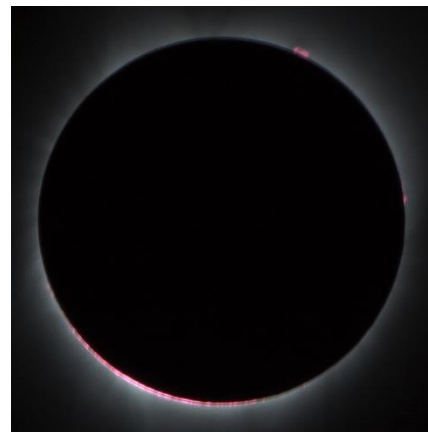
Above: Crescent shadows, 10 minutes before totality at McMinn County Central High, TN, which was very hospitable to a couple of hundred observers from throughout the US and Canada. The spaces between a tree's leaves acted as pinhole projectors of the sun's image. Image by Bill Witherspoon

In terms of news from the southeast, the most exciting event to take place over the summer was the total solar eclipse. I had the pleasure of being on the only North Carolina university campus in the path of totality. The excitement on campus leading up to the eclipse was palpable. Although it fell on the first day

of the Fall term, classes were canceled between 1pm and 3pm to allow students, faculty, and staff to experience this once in a lifetime scientific phenomenon. It was amazing to see so many people excited about a scientific event.

From a personal perspective, my expectations were blown away during the 2 minutes and 13 seconds the moon completely blocked out the sun. The calming darkness that engulfed the daytime sky was mesmerizing. The 360° sunset sent shivers down my spine. I hope that we as science educators are able to use the excitement our students felt during the eclipse to further their scientific engagement.

Right: *NASA image of an eclipse at totality showing “Baily’s beads,” caused by lunar topography* [ed. note: I saw this color through binoculars and wondered what it was – did you?]



Finally, to those of you interested in serving SENAGT, we are in need of a new vice president and secretary of the section. Since I began my term as president, the VP position has been vacant. Our secretary, Eleanor Gardner, has (unfortunately for us, but excitingly for her) taken a new position outside of the Southeast. These open SENAGT officer positions are fantastic opportunities for anyone interested in promoting science education and supporting Earth science teachers.

Here's looking forward to another exciting and successful year,

Frank Forcino

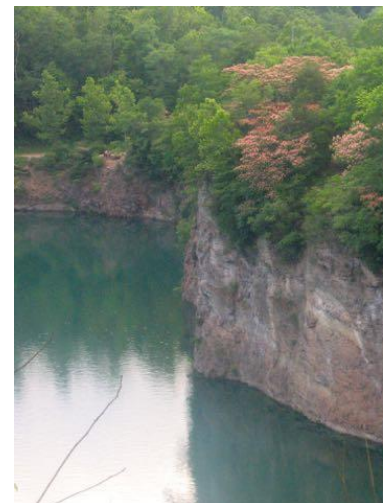
NAGT-Sponsored Field Trip for Teachers at SEGSA, April 14

by Michael Gibson, NAGT Tennessee Co-State Representative

Michael Gibson (UT Martin) and Don Byerly (Emeritus UT Knoxville) will be leading the SENAGT-sponsored teacher field trip, “Lessons From Limestone: How to Teach All Sciences with Limestone” for the Southeastern GSA meeting in Knoxville next spring. Participants will learn why limestone is ideal for teaching cross-disciplinary STEM subjects of biology, chemistry, and physics, along with history and culture. The trip will address Next Generation Science Standards related to chemical reactions, biological evolution, geochemical cycles, economic and environmental impact, and limestone’s historical importance to the fine arts.

Highlights of the trip include visits to an Ordovician limestone quarry just off Hwy 61 exit, a fossiliferous Ordovician field exposure in Raccoon Valley, a visit to the Tennessee Marble Company quarry and to the Meade Quarry if time permits.

Right: *An abandoned quarry in the Holston “Marble” (Limestone) at Fort Dickerson Park in Knoxville.* (image by Bill Witherspoon)



Limestone, a nearly ubiquitous sedimentary rock, provides many lessons about Earth's Systems (geosphere, hydrosphere, atmosphere, and biosphere), including the geochemical, hydrologic, and rock cycles. Additionally limestone is ideal for teaching cross-disciplinary STEM subjects of biology, chemistry, and physics, along with history and culture through its uses in society. It is a readily available commodity to teachers and students, thus is an ideal material for budget-strapped STEM education.

This field trip and accompanying materials address *Next Generation Science Standards* (NGSS) including: using fossils to develop concepts of paleoecology and evolution; using limestone to reconstruct ancient geography (including plate tectonics); the relevance of limestone to our society as a building stone, medical uses, and as a potential hazard associated with karst (caves and sinkholes), including where, how and why limestone forms. Five cross-disciplinary content standards will be addressed in the proposed guidebook paper and during field instruction: (1) enhancement of the understanding of chemical reactions, (2) biological evolution, (3) geochemical cycles, (4) economic and environmental societal impacts, and (5) historical importance and fine arts use of limestone to society.

Limestone formations are important archives of biotic and abiotic Earth history, provide valuable economic resources, and can sometimes be the cause of environmental hazards. Deposits around the world provide data for reconstructing global climate change and recreating Earth's changing paleoecology throughout geologic time, including human history. As a sink for carbon, carbonate rocks are Earth's main long-term antidote to global warming.

The anticipated cost is \$35 per person in addition to meeting registration for SEGSA and includes: Transportation, field guide, additional handouts, water and other cold drinks. Lunch will probably be at a fast food establishment and responsibility of the participant. For more information visit the [GSA meetings website](#).

[ed. note: As in past years, SENAGT will likely offer funding for a limited number of K-12 teachers to defray the SEGSA meeting and SENAGT-sponsored fieldtrip registration costs. Check the [SENAGT website](#) after October 1 for, funding permitting, a link to the application form.]

Meeting Calendar

Most recently reported dates of past or future meetings

National Science Teachers Association and Affiliates		
Area	Latest date on web site	City
National	Mar. 15-18, 2018	Atlanta
Eastern	Oct. 5-7, 2017	Baltimore
Southern	Nov. 30 – Dec. 2, 2017	New Orleans
Alabama	Mar. 7-8, 2017	Birmingham
Florida	Oct. 19-21, 2017	Orlando
Georgia / NSTA Nat'l	Mar. 15-18, 2018	Atlanta
Louisiana/ NSTA S	Nov. 30 – Dec. 2, 2017	Baton Rouge
Mississippi	Oct. 29-31, 2017	Biloxi
North Carolina	Oct. 19-20, 2017	Greensboro
South Carolina	Nov. 8-10, 2017	Columbia
Tennessee	Nov. 9-11, 2017	Murfreesboro
Geological Societies		
Organization (Area)	Latest date on web site	City
GSA (National)	Oct. 22-25, 2017	Seattle
GSA (Southeastern)	Apr. 12-13, 2018	Knoxville
GSA (South Central; incl. LA)	Mar. 12-13, 2018	Little Rock
Alabama Geological Society	Nov. 16-18, 2017	Oxford-Anniston
Carolina Geological Society	Nov. 3-5, 2017	Roxboro, NC
Georgia Geological Society	Oct. 6-8, 2017	Carrollton

FOSSIL Project Announcement

by Eleanor Gardner, SENAGT Secretary

A new webinar series is upcoming from the National Science Foundation funded project called FOSSIL (Fostering Opportunities for Synergistic STEM with Informal Learners):

FOSSIL Roadshow Webinar Series

The FOSSIL Project is excited to announce that throughout the Fall 2017 semester, webinars focusing on fossil identification and modeled after PBS' "Antiques Roadshow" will be offered. Experts and amateurs will interact live during webinars themed around topics such as trilobites, mysterious fossils of Texas, and more! This is a great opportunity for students to learn about paleontology and geology, and webinar attendees can ask the experts questions in real time. **Webinars run from 7-8pm Eastern time.** Joining in on a webinar is easy: just navigate to <http://idigbio.adobeconnect.com/room> on the designated date and time, click "Enter as a Guest," and type your name. You may access the webinar via personal computer or via smartphone/tablet with the AdobeConnect app.

September 20: Trilobite Identification with the Cincinnati Dry Dredgers

October 19: Mysterious Fossils of Texas with the Dallas Paleontological Society

November 15: Cretaceous Fossils of New Jersey with the Delaware Valley Paleontological Society

December 13: TBD

Learn more at www.myfossil.org.

Questions? Contact the new FOSSIL Project Coordinator, Sadie Mills, at SadieMMills@gmail.com.

State News in Geoscience Education

[Ed. note – beginning this issue, event announcements include the date in the caption, and generally appear in chronological order. **Some events are as early as early September**, and this will help you see them quickly. If you would like to contribute state news to the next newsletter, please send your geoscience education information and pictures to your state representative, before February 1, using the e-mail address at the end of this newsletter.]

Alabama (submitted by David C. Kopaska-Merkel, Geological Survey of Alabama, State Representative)

SEEPS

The Second Annual Meeting of the Southeastern Evolutionary Perspectives Society took place in Tuscaloosa, Alabama, on February 10-11. An electrifying keynote address was delivered by Patricia Kelley (University of North Carolina, Wilmington), during which she impersonated both Charles and Emma Darwin. The Third Annual Meeting is scheduled for February 8-10 in Savannah, Georgia, and will feature a keynote address by Robert McCauley (Emory University). The meetings are preceded by events for children and teachers. <http://seepsociety.weebly.com/2018-meeting.html>

University of West Alabama

Rindsberg honored

Andrew K. Rindsberg was promoted from Associate Professor to Professor at the University of West Alabama. He and James Lamb, both paleontologists, are the two geology faculty employed by UWA.

UWA to bring international event to US in 2019

The International Ichnofabric Workshop, which meets every couple of years and emphasizes sedimentologic and stratigraphic aspects of ichnology, will meet at the University of West Alabama in Livingston, Alabama, in May 2019, probably with three days of talks and a four-day field trip in or near Alabama. This will be the first time that the conference has been held in the United States since 1993. If you would like to be involved in planning this conference or leading a field trip stop, please contact Andy Rindsberg (arindsberg@uwa.edu).

Right: *Andrew K Rindsberg (right) and Carlos Carvalho*. Photo credit: *Ichnia* 2016.



ALLELE lectures

The University of Alabama's long-running series of lectures on evolution continues this year (beginning in the fall) with presentations on many subjects that have evolutionary components. Past lectures can be listened to on iTunes U. You can find information about recent and upcoming lectures here: <http://evolution.ua.edu/>. There are generally six per academic year. These lectures are all free and open to the public.

Fossils of the Black Belt teacher workshop Oct. 17

The Geological Survey of Alabama, Discovering Alabama, the Birmingham Paleontological Society, the Alabama Geological Society, the University of West Alabama, and the Museum of the Black Belt, are collaborating once again to put on a one-day paleontology field workshop for teachers. Last year, we focused on biostratigraphy and lithostratigraphy. This year (October 17, 2017), we return to the same large Cretaceous outcrop to study taphonomy and fossil preservation. Anyone interested can email me, or visit the workshop's Facebook page: <https://www.facebook.com/Fossils-of-the-Black-Belt-690641810945830/>.

University of South Alabama

The Department of Earth Sciences at the University of South Alabama continues to promote geoscience education at the community and public school levels. USA faculty gave multiple public lectures on their research at regular meetings of the Mobile Rock and Gem Society throughout 2016-17. Additional lectures on mass extinctions in the rock record ("Five ways the Earth is trying to kill you!") were delivered to groups in Mobile, Fairhope and Gulf Shores. A talk on the Geology of Star Trek was presented to science fiction fans prior to the showing of Star Trek 2: Wrath of Khan in celebration of the 50th year of the Star Trek franchise. USA student groups were also active in service activities.

Members of the Geology Club participated in the GEMS event (Girls Engaged in Mathematics and Science) in November and will soon be finished with their Alabama Rocks! project that will equip all public schools in USA's service area with comprehensive rock kits and supporting information to promote geology education. Not to be outdone, students in the USA Chapter of Sigma Gamma Epsilon (USA-SGE), the Earth sciences Honors Society) have finished assembling their Alabama Minerals boxes that will complement the Alabama Rocks! project. USA-SGE students were aided in their work by the Mobile Rock and Gem Society, and a major donation from Lowes Home Improvement.

The Outstanding Earth Sciences Teacher in Alabama for 2017 was Virginia Hall, who teaches at Mary G. Montgomery School in Semmes. This is the second year in a row that a Mobile County public school teacher was recognized for geoscience education in the state.



Douglas W. Haywick (right) with his student, Sam Barber. Photo courtesy of Kat Moody.

The University of South Alabama Department of Earth Sciences is undergoing major changes in personnel. Lecturer Diana Sturm has retired, but will continue to teach online geology classes for the department. It will be the first time that online geology courses will be available through USA. She will teach two classes this fall, one a section of GY 112 (Earth history) and the other, a new course on dinosaurs.

Associate Professor Douglas Haywick is retiring from the geology faculty. He will retain emeritus status and access to the labs in order to continue his research in the state. Will Jackson, previously employed by the Geological Survey of Alabama, is replacing him.

Thanks to Douglas W. Haywick and Andrew K. Rindsberg for contributing to this report.

Florida (submitted by Kim Cheek, State Representative and Eleanor Gardner, SENAGT Secretary)

Florida teachers in New Mexico with GABI-RET

In July, many Florida teachers, along with teachers from California, participated in the Florida Museum of Natural History's GABI-RET project activities at Ghost Ranch in New Mexico. The teachers learned about the *Coelophysis* quarry, the area's stratigraphy and paleogeographic context, and conducted some fieldwork in partnership with FLMNH paleontologists. To learn more about the GABI-RET project, visit <http://gabiret.com>.



FOSSILs for teachers

The FOSSIL Project at the Florida Museum of Natural History hosted a professional development workshop called "FOSSILs for Teachers" on August 2-5, 2017. Thirty K-12 teachers and fossil club members from around the United States, and one teacher from India, came to Gainesville, FL, for intense paleontology & biology lesson planning using fossils. The club members provided specimens that supplemented those provided by FLMNH, thereby creating fossil kits for each teacher's classroom. Teachers and fossil club members worked together to craft lesson plans over the 4-day

period, with the workshop culminating in poster presentations by each group. Everybody also enjoyed fossil collecting in a local Gainesville creek after the workshop ended. The teachers will implement the lesson plans over the coming school year and report back about successes and areas for improvement. The FOSSIL Project team is working on writing up a journal manuscript detailing the event and how others can implement similar programs.

Below: five participants present a lesson plan at the conclusion of "FOSSILs for Teachers"



Astronomy Observing Nights Beginning Sept. 1

For anyone in Northeast Florida, Jacksonville's University of North Florida astronomy club hosts observing nights on a regular basis, weather permitting. These are free and open to the public. The event begins at 8:00pm with a 30 min. talk in the main lobby of Building 50 (Science and Engineering). Participants then take the elevator to the roof to view the night sky through telescopes. Parking is available in the Arena parking garage. Upcoming events are:

Sept. 1st: Recording the Great American Solar Eclipse (a recap with photos and videos from the Aug. 21st eclipse); Sept. 22nd: TBD; October 20th: Orionids Meteor Shower; November 17th: Leonids Meteor Shower

National Fossil Day Nov. 3-4

Join Florida Museum of Natural History, Gainesville, for a two-day celebration in honor of National Fossil Day!

Nov 3, 4:00-5:45pm, UF Harn Museum of Art auditorium: public lecture on incredible fossil invertebrates from Dr. Jonathan Hendricks of the Paleontological Research Institution (Paleontological Society distinguished lecturer).

Nov 4, 10am-3pm, Florida Museum of Natural History exhibits hall: Meet paleontologists from across the state of Florida, learn about the state's rich fossil history, and participate in family-friendly activities like a fossil dig and screen wash.

Learn more at <https://www.myfossil.org/events/2017-09/> . For more Florida Museum events, such as a lecture on fascinating foraminifera (!), check out the calendar at <https://www.floridamuseum.ufl.edu/calendar/>.

Georgia (submitted by Katy Smith and Christy Visaggi, Co-State Representatives)

Decatur Book Festival Sept. 3-4

On Sunday September 3 (5:00-5:45 PM), the 11th Annual AJC Decatur Book Festival presents Dr. Anthony Martin, discussing his book *The Evolution Underground: Burrows, Bunkers, and the Marvelous Subterranean World*. [Ed note: This is “the largest independent book festival in the country and one of the five largest overall. Since its launch, more than 1,000 world-class authors and hundreds of thousands of festival-goers have crowded the historic downtown Decatur square...” There is a terrific science track each year, and for the third time, Emory University ichnologist Tony Martin has received the coveted honor of presenting a book talk (most likely a DBF record).]

Information on this and other science authors can be found here:

<https://www.decaturookfestival.com/sessions/index/track:582b6d32c4667e242c342c1c>

National Association of Black Geoscientists Sept. 6-9

Atlanta will be the location of the annual meeting for the National Association of Black Geoscientists as well September 6-9, 2017, at Georgia State University. Students curious about careers in geosciences are strongly encouraged to attend. Christy Visaggi welcomes the opportunity to help seek sources of funding to get students to the meeting, so please don't hesitate to contact her (see Past President contact info., p. 1). See [here](#) for more information about this exciting conference and note that membership is only \$10 for students and \$25 for teachers: <http://www.nabg-us.org/>.

Georgia Geological Society Oct. 6-18

Georgia Geological Society will gather for its 51st annual meeting and fieldtrip in Carrollton October 6-8. Clint Barineau (Columbus State University) and Jim Tull (Florida State University) will lead “A Taconic Backarc and Arc Terrane in the Southern Appalachians: Correlating Geologic Units of the Blue Ridge and Western Inner Piedmont of Georgia and Alabama.” Friday night events include a social and trip preview lecture hosted by the Geology Department at the University of West Georgia. On Saturday and Sunday, the trip will explore evidence that rock units of the area formed on the Laurentian (North American) plate as part of a paired backarc-arc system, similar to that of the modern Japanese arc and backarc system on the western margin of the Pacific basin. On Saturday Oct. 10, the trip will visit the area west of Carrollton, between Tallapoosa and Franklin. On Sunday the trip will move northeast to the area around Dallas, concluding with picnic lunch and the brief business meeting. More information will be posted at [this link](#) by September 1. [submitted by Bill Witherspoon, GGS President]

STEM Forum Oct. 23-24

The STEM/STEAM Forum will once again be held in Athens, GA, on October 23-24 this year. Visit the Georgia Department of Education website for more details: <http://stem.wpgadoe.org>.

georgiarocks.us walk Nov. 4: On Saturday, November 4, Georgia ForestWatch will host “Geology and Natural Communities Walk” led by Bill Witherspoon and Leslie Edwards at Zahnd Natural Area (near Cloudland, GA) [ed note: Leslie (lead author of [Natural Communities of Georgia](#)) and I (co-author of [Roadside Geology of Georgia](#)) will visit a rock town as well as turtlebacks and mushroom rocks along the escarpment, discussing the underlying geology and how it helps determine habitats for plants and animals.] RSVP and details when available: <http://georgiarocks.us/events/index.htm#Events>

National Science Teachers Association Mar. 15-18, 2018

Georgians are very excited to be the location of the annual conference for the National Science Teachers Association this coming year! Join us March 15-18, 2018, for a meeting that's all about “Science on My Mind” in downtown Atlanta (<http://www.nsta.org/conferences/national.aspx>). Highlighted conference strands include 1) Focusing on Evidence of 3D Learning, 2) Imagining Science as the Foundation for STEM, 3) Reflecting on Access for All Students, and 4) Comprehending the Role of Literacy in Science. Because the national conference is in Georgia this year, GSTA will not be held in February, so I encourage you to jump on this exciting opportunity to convene with 10,000+ fellow

educators passionate about science!

SENAGT participated in two geology field trip proposals for the meeting, 1) a Mar. 15 walking tour of Midtown Atlanta (building stone and an outcrop of folded gneiss) led by Bill Witherspoon and Bill Waggener, and 2) a Mar. 16 car caravan to Stone Mountain led by Pamela Gore and Bill Witherspoon. Watch the NSTA website and the Winter-Spring SENAGT newsletter for details.

Georgia Geographic Alliance

Finally, stay tuned to events and opportunities from the Georgia Geographic Alliance (<http://georgiageography.org/>) such as renting the Giant Traveling Map of GA, earning recognition through our Teacher Feature series, becoming certified as a National Geographic educator, and more! You can find GGA on Facebook as well (<https://www.facebook.com/georgiageography/>).

Louisiana (Submitted by Wendy Demers, State Representative)

Wetlands Youth Summit Sep. 9; Register by Sep. 1

The South Louisiana Wetlands Discovery Center is hosting the annual Wetlands Youth Summit on Saturday, September 9th. The Wetlands Youth Summit aims to bring young leaders together to discuss various challenges and potential solutions for gulf coast communities. The agenda and registration forms can be found at <http://slwdc.org/programs/wys/>. Registration forms are due Friday, September 1.

NSTA Conference Nov. 29- Dec. 2

New Orleans will be the site for NSTA's fall Area Conference, November 29 – December 2, 2017. Strands focus on: Inspiring Our Young Learners, Integrating Science Education for ALL, and Innovating Science Education for Tomorrow. Registration is now open.

Louisiana Student Science Standards

A cadre of Louisiana K-12 educators, state science leaders, and school administrators recently drafted new **Louisiana Student Science Standards** for K-12 students. Particular attention was paid to crafting relevant environmental standards that address pertinent state issues. Louisiana Science Teachers Association (LSTA) is offering free 4-hour Louisiana Student Science Standards trainings throughout the state regions to support educators in adapting the new standards.

State PAEMST Finalists named

Five Louisiana educators have been named State Finalists for the Presidential Awards for Excellence in Mathematics and Science Teaching (PAEMST). The Presidential Award is the nation's highest honor for U.S. K-12 mathematics and science teachers. The National Science Foundation (NSF) on behalf of The White House administers the awards program. The finalists are:

Steve Babcock, Louisiana State University Laboratory School, Baton Rouge, LA
Jed Pitre, Thibodaux High School, Thibodaux, LA
Ann Robichaux, Vandebilt Catholic High School, Houma, LA
Elizabeth Vance, Cope Middle School, Bossier City, LA
Tabitha Vu, Dutchtown High School, Geismar, LA

Louisiana educators enjoyed summer learning in Maryland, Panama, Iceland

Ann Robichaux, teacher at Vandebilt Catholic High School, is constantly seeking opportunities to better herself as an educator. She was chosen to participate in this summer's [Maury Project](#) of the American Meteorological Society. Ann spent 2 weeks at the Naval Academy in Annapolis, Maryland where she was one of twenty-four teachers from around the country to attend this prestigious professional development. The Maury Project is designed to give science teachers and science supervisors an in-depth study of various oceanographic and meteorological subjects including waves, tides, density and wind-driven oceanographic circulations and ocean- atmosphere interactions.

In July, three Louisiana teachers, **Jeanell Sullivan** (Lusher HS), **Jodi Sanchez** (Lusher MS), and **Katie Adler** (East Jefferson HS) accompanied Dr Sunshine Van Bael from Tulane University to do research in Gamboa, Panama along the Panama Canal, in a program of the Smithsonian Tropical Research

Institute (www.stri.org). The team was in Panama for two weeks, and will develop lesson plans about the rainforest. All lesson plans will be linked to discovery, ecology, and conservation of tropical forest biodiversity.

NAGT State Rep **Wendy DeMers** was one of 21 participants from across the US who spent 7 days in July hiking and experiencing Iceland's geologic wonders. Participants, led by a geologically-trained local Icelander, were treated to cultural, educational, geological, and gastronomical venues.

Right: *Wendy Demers with basalt and glacier in Iceland.*



Mississippi (Submitted by Renee Clary, Mississippi State University, State Representative)

Mississippi State University



Earth Day: The Dunn-Seiler Museum, in partnership with Gaining Ground Sustainability Institute of Mississippi, sponsored a competition to promote awareness about the environmental damage caused by the large amount of cardboard that the US discards, without reusing or recycling it. Mississippi K-12 students submitted creative solutions with cardboard, including an electric guitar, a bat box, and a Smart Phone projector! Winning entries are on display at the Dunn-Seiler Museum at Mississippi State University.

Left: *MSU Graduate students Brendan Lomago and Randi Robison staff the Geosciences Earth Day table on MSU's campus. Winning entries submitted by Mississippi students were on display.*

National Fossil Day: The Dunn-Seiler Museum will again sponsor an art and story competition for National Fossil Day, which focuses upon prehistoric Mississippi fish. The contest information can be found on the Dunn-Seiler website:

<http://www.geosciences.msstate.edu/dunn-seiler-museum/news-and-events/>

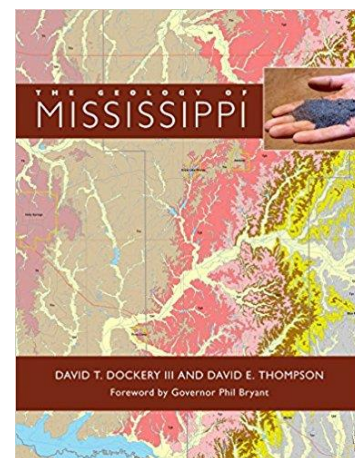
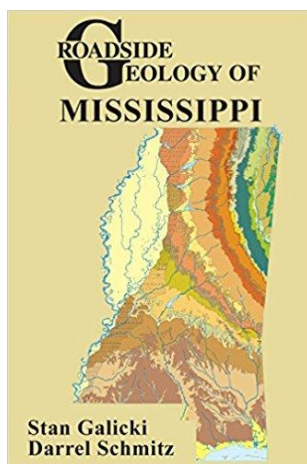
Fossil Extravaganza, Oct. 11: The Dunn-Seiler Museum will host a public Fossil event for National Fossil Day. The Dunn-Seiler will offer tours, refreshments, and fossil activities on October 11, 2017, from 5:00 – 7:30 PM.

Mississippi Geology Classroom Resources

Dr. Stan Galicki (Millsaps College) and Dr. Darrel Schmitz (Mississippi State University) recently published the *Roadside Geology of Mississippi*, which outlines great sites to find fossils, as well as the location of Mississippi's extinct volcano. (Spoiler alert: It's buried in the subsurface beneath the

Mississippi Coliseum in Jackson!) This user-friendly book makes a welcome classroom addition.

Another recently published book provides an in-depth geological resource of the state: Department of Environmental Quality's Dr. David Dockery and Dr. David Thompson recently published *The Geology of Mississippi*.



North Carolina (submitted by Randy Bechtel, N.C. Geological Survey, State Representative)

Environmental Educators of N.C. Conference Sep. 29-Oct. 1 - www.eenc.org/conference

September 29 - October 1, 2017, join us at the Agapé Camp and Conference Center in Harnett County, N.C. Enjoy a weekend full of professional development, networking, learning, and field experiences that will help you expand your knowledge of Environmental Education and resources in N.C. and beyond - www.eenc.org/conferenceschedule .

Want to know more about Environmental Education? Visit the N.C. Office of Environmental Education website - www.eenorthcarolina.org .

North Carolina Science Teachers Association Professional Development Institute (NCSTA-PDI) Oct. 19-20

The North Carolina Science Teachers Association Professional Development Institute (NCSTA-PDI) – www.ncsta.org - will be held on October 19-20, 2017 at the Koury Convention Center in Greensboro, N.C. Conference registration is open for exhibitors.

The theme this year is "Modeling STEM: Ingenuity at Work!" improving science knowledge with three strands:

Strand 1: "Mastering science material through technology and innovation" will consist of promoting the best science classroom practices through technology.

Strand 2: "Science review & test-taking strategies: break through to excellence" will focus on improving learning content material.

Strand 3: "The science of design: Modeling past, present and future" will provide teachers with ways to incorporate different representations of science through hands-on learning.

We will also be offering our annual Literacy Workshop and a Share-a-thon.

Carolina Geological Society Annual Meeting and Field Trip Nov. 3-5
carolinageologicalsociety.org/

Headquarters: Hampton Inn, Roxboro, NC - November 3-5, 2017

"Ramping Through the Piedmont: The Hyco Shear Zone and associated hanging wall rocks in north-central North Carolina.

"The one-and-a-half-day field trip will examine the geometry, kinematics, timing, and significance of the Hyco shear zone and the geology of associated hanging wall rocks of the Carolina terrane between Yanceyville, NC, and Virgilina, VA. The Hyco shear zone is a major mid-crustal thrust that places Neoproterozoic Gondwanan arc rocks of Carolina on Ordovician rocks of the Milton-Chopawamsic arc, formed on the Gondwanan side of Iapetus. The shear zone formed during the Carboniferous collision of North America with Africa, a stage in the formation of the supercontinent Pangea."

The North Carolina Science Festival Apr. 1-30, 2018 www.ncsciencefestival.org

The 2018 NC Science Festival is going to be bigger than ever before, now with a full month of science from April 1st - 30th!

The theme for the 2018 Festival is the "science of food and drink." Not all events need to adhere to the theme. Organizations looking for event ideas or interested in proposing an event can contact ncscifest@unc.edu to consult with Festival staff.

The Festival, a celebration of science, technology, engineering and math (STEM) and its impact on North Carolina, is the largest science festival in the nation and the first to encompass an entire state. In 2017, the two-week long Science Festival had a presence in all 100 N.C. counties! The NCSF had 240,139 participants and 850 events at schools, museums, community centers, libraries, parks and other venues. Two astronauts, 5,218 volunteers and 2,743 STEM professionals contributed to its success.

The North Carolina Science Festival is an initiative of Morehead Planetarium and Science Center.

In Memoriam

On a sad note, North Carolina lost one of its foremost Earth science teachers and science education advocates. Fred L. Beyer passed away May 23, 2017. Fred was a leader in the process to get the Earth/Environmental Science Course adopted as a required course for graduation from N.C. high school. From the NCSTA website: "Fred's untimely death has left us with a hole in our hearts and in the organization. There is no way we can provide the level and quality of support that will match the example Fred has set. We can only hope that the efforts of many of us can combine to positively influence the science instruction of the children across North Carolina in a way that would make Fred proud! We will surely miss Fred Beyer!"



I encourage you to read more about Fred's work at <https://www.ncsta.org/fred-beyer/>

Puerto Rico (State Representative position open)

South Carolina (submitted by Gwen Daley, State Representative)

Greetings from the Palmetto State! I would like to start this news blurb with a request that you consider nominating an outstanding colleague for a Governor's Award or the NAGT OEST award.

The South Carolina Academy of Science (SCAS) co-sponsors South Carolina's four annual Governor's Awards for contributions in science research and science awareness (<http://scacademysci.org/govaward>). The list of recipients is impressive, but sadly contains few geoscientists. Carol Jantzen (Savannah River National Laboratory) won the Governor's Award for Excellence in Scientific Research in 2016 and Brian Powell was awarded the Governor's Young Researcher Award for Excellence in Scientific Research in 2014. I did not find any other geoscientists on a list of recipients reaching back to 1985. There seems to be reluctance among South Carolina Earth scientists and Earth science educators to nominate their peers for awards, including our own NAGT Outstanding Earth Science Teacher (OEST) award (<https://nagt.org/nagt/awards/oest.html>). Please consider nominating your outstanding colleagues for an award this year, and every year! A little recognition and appreciation goes a long way.

Meetings and Events

Sustainable Resort Development Conference Sep. 6-8

The University of South Carolina-Beaufort will host the Second Charles E. Fraser Sustainable Resort Development Conference from September 6th-8th at Sea Pines Plantation Golf Club, Hilton Head Island (http://uscb.edu/academics/academic_departments/professional_programs/hospitality_management/fraser-sustainable-resort-conference/index.html). The conference will

focus on sustainable development of coastal resources with the goal of “[hosting] a public conversation among community leaders, scientists, managers, and government officials that explores the sustainable future for our Coastal Community.”

Beach Sweep/River Sweep Sep. 16

South Carolina Sea Grant is hosting a Beach Sweep/River Sweep on the morning of September 16th. For more information see: <http://www.dnr.sc.gov/bsrs/index.html>

Carolina Geologic Society Nov. 3-5 [Roxboro, NC; see North Carolina news above – ed.]

South Carolina Science Council Nov. 8-10

The South Carolina Science Council (SC)² will hold its annual meeting November 8th-10th in Columbia. There will be a wide range of workshops and presentations on various science education subjects. When more information becomes available, it will be posted at <http://www.scscience.org/sc2-conference>.

News and Resources

Envirothon

The 2017 South Carolina Envirothon (Conservation at the Core) was held on a soggy May 5th at the Sandhill Research and Education Center (<http://www.dnr.sc.gov/education/Envirothon/index.html>). Congratulations to Spartanburg High School’s Team A (first place) and Team B (third place) as well as Spartanburg Day School’s SDS Griffins (second place) for besting 13 other teams in this annual competition.

State Museum, Aquarium

The South Carolina State Museum has a new exhibit entitled “Savage Ancient Seas” which spotlights a variety of magnificent sea monsters from Earth’s past (<http://scmuseum.org/ancientseas/field-trips/>). They have also developed standard-appropriate programs for K-12 classes for this new exhibit. In addition, they offer a free hands-on program for third graders on trace fossils. Down in Charleston, the South Carolina Aquarium now has 5th-8th grade standard-appropriate programs on Earth history, including the rocks and fossils of South Carolina (<http://curriculum.scaquarium.org/landing/5-8-earth-history/>)

Ground Water Newsletter

The South Carolina Department of Natural Resources (SC-DNR) hydrology office is now producing a monthly newsletter about ground water monitoring and modeling in the state (<http://www.dnr.sc.gov/water/hydro/gwnews.html>). This is new, with the first newsletter produced in April 2017, highlighting major new research projects and data collection efforts.

Coastal Information Network resource page

The South Carolina Coastal Information Network resource page (<http://www.sccoastalinfo.org/search-resources/>) now links a wide variety of articles, guides, and other publication on coastal community resilience, flooding, and other resources ranging from a Congaree National Park ranger singing “The Flood Factors Song” (highly recommended) to emergency preparedness e-books. The collection dates back to 2007 and appears to be actively maintained.

Hurricane Matthew web resource

The South Carolina Department of Natural Resources has produced an interactive online exposition of the impact of Hurricane Matthew in South Carolina (<https://scdnr.maps.arcgis.com/apps/MapJournal/index.html?appid=2ac87a4a698c4e26902c1babbdba871b>), similar to the website on the devastating flooding event of 2015. The interactive maps and commentary combine scientific, political, and other information about the physical, economic, and long-term effects of the storm.

Stream Assessment web resource

The South Carolina Stream Assessment project (co-sponsored by the SC-DNR and Clemson University) has compiled and organized stream data collected between 2006 and 2011 with the goal of creating interactive models to help guide conservation planning (<http://54.204.4.5/scsa>). The project includes interactive maps showing the relationships between streams, landscapes, and ecosystems and well as conservation planning models.

Publications About South Carolina Earth Sciences

The Tulane University Library made a searchable archive of the full run of the Tulane Studies in Geology and Paleontology (<http://library.tulane.edu/journals/index.php/tsgp>) available in June. This journal published important papers in geology and (especially) paleontology of the Gulf and Atlantic coastal plains from 1962-1997, including many about South Carolina geology and paleontology.

Hill, J.C. 2016. Iceberg ploughmarks on the upper continental slope, South Carolina. Geological Society, London, Memoirs 46: 271-272. (<http://mem.lyellcollection.org/content/46/1/271>)

Jeffrey M. Schrag. 2017. Naturally occurring radium (Ra) in home drinking-water wells in the Sandhills region of South Carolina, USA: Can high concentrations be predicted? *GeoHealth* 1: 138-150. (<http://onlinelibrary.wiley.com/doi/10.1002/2017GH000069/full>)

Kerry McCarney-Castle, Tristan M. Childress, and Christian R. Heaton. 2017. Sediment source identification and load prediction in a mixed-use Piedmont watershed, South Carolina. *Journal of Environmental Management* 185: 60-69.

(<http://www.sciencedirect.com/science/article/pii/S0301479716308209>)

Morgan, K.L.M., 2017. Winter 2016, Part A—Coastal oblique aerial photographs collected from the South Carolina/North Carolina border to Assateague Island, Virginia, February 18–19, 2016: U.S. Geological Survey Data Series 1029, <https://doi.org/10.3133/ds1029>. (<https://pubs.er.usgs.gov/publication/ds1029>)

Stephen E. MacAvoy, Nicole Cortese, Jonathan Cybulski, Aleta A. Hohn, and Stephen A. Macko. 2017. Sources of stable isotope variation among stranded Western Atlantic dolphins (*Tursiops truncatus*) in North Carolina. *Marine Mammal Science* doi:10.1111/mms.12425. (<http://onlinelibrary.wiley.com/doi/10.1111/mms.12425/full>)

Tennessee (submitted by Michael A. Gibson, University of Tennessee at Martin, and Ann E. Holmes, University of Tennessee at Chattanooga, Co-State Representatives)

Tennessee Science Teachers Association (Nov. 9-11)

The Tennessee Science Teachers Association (TSTA) will hold its annual meeting in Murfreesboro, Nov. 9-11, 2017. Information about the meeting and registration are available at: <http://www.tsta.wildapricot.org/>.

Tennessee Academy of Science Annual Meeting (November 10, 2017).

The annual meeting of the Tennessee Academy of Science will be held on the UT Martin campus November 10, with a field trip to Reelfoot Lake schedules for Saturday November 11. The academy has a geoscience section and welcomes submissions and also has an education section that accepts earth science pedagogy and history. For more information about the meeting visit: www.tennacadofsci.org, or contact Dr. Sandy Mehlhorn (smehlhorn@utm.edu). Abstract deadline is Sept. 29th.

2nd Annual Earth Science Week at the Discovery Park of America, Oct. 7-13.

The Discovery Park of America has made Earth Science Week in October an official week-long event permanently and coordinates events for the public and regional schools with the Department of Agriculture, Geosciences, and Natural History at UT Martin. The 2017 celebration will include a Mineral, Rock and Fossil Identification Day (Saturday October 7th) that will include fossil shows by local amateur collectors and a teacher workshop (Wednesday afternoon, Oct. 11th) that will focus on middle school

earth science curriculum needs along with a guided tour of the natural history displays that includes facilitating the teachers developing their own educational programs using the park's displays. Friday October 13th, National Map Day, is highlighted with a Facebook challenge with prizes being geologic maps of the winner's local school district. For more about the geology exhibits and programs at the Discovery Park of America visit: <http://www.discoveryparkofamerica.com/>.

Science Saturday at the Discovery Park of America.

Science Saturday continues at the The Discovery Park of America in Union City for the 2017-18 academic year, after a successful inaugural year. One Saturday a month a different science is highlighted with demonstrations and activities designed by professors and student groups from UT Martin. Last year ten Saturday programs were run, serving several hundred kids and families, primary middle school age. Two geoscience programs were run. Dr. Stan Dungan (UT Martin) demonstrated volcanic eruptions using a 55 gallon container that erupts several meters into the air. It was quite a crowd pleaser and quite the crowd soaker! In October, coinciding with Earth Science Week, the Saturday program focused on fossils. Tennessee's newest dinosaur find, a Cretaceous hadrosaur jaw belonging to the genus *Lophorothon*, was unveiled to the public. Plans are underway for more programs for the 2017 series, which will include a collaboration on geochemistry demonstrations for October. For more about the geology exhibits and programs at the Discovery Park of America visit: <http://www.discoveryparkofamerica.com/>.

University News

Newly appointed **University of Tennessee Knoxville** Department Chair Michael McKinney shares that they have two new faculty members beginning this Fall. **Dr. Iftekhar Alam** joins the program as post-doc in geophysics and **Dr. Nick Dygert** assumes the mineralogist position in the program.

The **University of Tennessee at Martin** also reports two new faculty members beginning this Fall. **Dr. Angela Van Boening** comes to the program from Texas A&M as the program's "hard rock" geologist (structure, mineralogy, igneous and metamorphic). Dr. Van Boening's research combines geology and cognitive science, specifically how geology undergraduates use gestures to convey information and illustrate ideas when they are describing and explaining geologic features, concepts, and processes. Her work has pedagogical implications for geoscience education in our region and she is currently setting-up a video laboratory to continue this research. Tennessee native **Audrey Pattat**, who earned her B.S. in geology from Tennessee Tech and a M.S. from Texas Tech, returns to West Tennessee as UT Martin's introductory laboratory instructor and coordinator. Ms. Pattat brings with her experience with Mississippian Eastern Highland Rim geology and the Ogallala formations of the mid-continent.

Coon Creek Science Center.

The Coon Creek Science Center, located in McNairy County begins its Fall programming. The site is the home of the Late Cretaceous Coon Creek Formation, which contains hundreds of fossil species, including the State Fossil of Tennessee (*Pterotrionia thoracica*), mosasaurs, sharks, bivalves, gastropods, turtles, and much more (<http://www.memphismuseums.org/coon-creek-science-center/>). Groups are encouraged to attend and can receive programs through the Pink Palace Museum, located in Memphis. For more information on day programs or to schedule a visit contact: <http://www.memphismuseums.org/>. Though a long-standing agreement with UT Martin, university groups can arrange overnight visits. For information on overnight university visitation, contact Michael Gibson at UT Martin (mgibson@utm.edu; 731.881.7435).

UT Martin Selmer Center Coon Creek Fossil Lab.

UT Martin runs a satellite campus in Selmer, TN approximately 30 miles from the Coon Creek Fossil Site. UTM is establishing a climate-controlled fossil lab at the Center that will house collections and library resources for school use and public outreach in support of the work done at the fossil site itself, which does not have climate control. The new facility will also have access to distance learning. The lab should be fully operational by Fall 2018.

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