



National Association of Geoscience Teachers
Southeastern Section Newsletter
Summer-Fall 2015

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WWW . . .

NAGT

www.nagt.org

SE-NAGT

geogiarocks.us/nagt
(note new address)

Geological Society of America

www.geosociety.org

US Geological Survey

www.usgs.gov

Earth Science Week

www.agiweb.org

www.earthscienceworld.org

www.earthsciweek.org

Winter-Spring 2016

Newsletter Deadline:

**February 15, 2016. Please
send news items to Bill at**

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President's message

by Christy Visaggi, SENAGT president

Hello everyone! I'm delighted to write you all for the first time as President of SENAGT since I stepped into the role last March as part of activities in Chattanooga during the Southeastern Geological Society of America (SEGSA) meeting. As a paleontologist, and advocate of place-based education, I'm delighted to first report on events sponsored jointly by SENAGT and the Paleontological Society related to education on evolution including challenges, resources, and strategies of particular interest to our region.

SEGSA 2015



First, Patricia Kelley (Distinguished Lecturer on Evolution) and yours truly co-chaired a session on **Teaching Evolution in the Southeast**. Over 60 professionals and students attended the 16 presentations. The comments below from a participant survey reflect the diversity of offerings, as well as desire for mutual respect between science and religion.

"Really enjoyed hearing about the different 'forms' of creationism and the effect of putting belief on a continuum."

"It became very clear that the biggest obstacle seems to be that people think they have to choose between God and science and in most instances that is not the case."

"Schwimmer's presentation on transitional fossils provided clear and concise talking points to discredit the 'no transitional fossil' comments."

"I had never been to the Scopes Museum, and had not intellectually pursued any information on it. I enjoyed the historical perspective."

"The Creation vs. Evolution discussion...made me reevaluate how I approached the whole discussion...One can believe in any religion you want and also understand the gradual change of organisms over time."

"It was interesting to see more of the research side on the 'why' behind a lot of our students' thoughts."

"I enjoyed 'Teaching Evolution Through 'Other Voices' In Video Multimedia and Video Tutorials'."

The companion field trip **Evolution and the Evidence around Dayton, Tennessee**, co-led by our newsletter editor and two past SENAGT presidents, had 13 participants. One individual summed up the experience this way: *"Just being able to simply stop along the road (at a specific location, of course), dig in the bank that is high up on a mountainside and collect fossils that could only come from the sea floor was about as direct of evidence as you can give to cause thought in people. Seeing the distribution of evidence up and down the geological record simply puts an end to the 'young Earth' ideas in my mind."*

See more below in the Tennessee news on geoscience education.

Funding from SENAGT and the Paleontological Society helped defray costs for eight K-12 teachers to attend the session and/or field trip. Watch for an upcoming announcement for potential funding to attend SENAGT-sponsored sessions and field trip at the 2016 SEGSA meeting in Columbia, SC, March 31-April 1, 2016. See South Carolina news below for more about the two proposed sessions and the field trip. Topics to be covered include evolution, climate, and environmental education.

SENAGT Leadership

On a related note, I'm happy to announce that because of increasing interest in education initiatives in the region, a formal liaison position has been established by SEGSA to aid in communication with SENAGT. We welcome Paige Flores as the new SEGSA Education Chair!

Furthermore, I'm pleased to report that over the last year we have welcomed several new SENAGT state representatives in Florida, Georgia, and Mississippi! Kathlyn Smith is an Assistant Professor of Geology and Museum Curator at Georgia Southern University. Mississippi State University is home to both Renee Clary, Associate Professor in Geology and Geoscience Education, and Adam Skarke, Assistant Professor in Geology. Finally, Kim Cheek is an Assistant Professor of Science Education at the University of North Florida. Please see your state news to learn more about activities near you and feel free to share information on any events in your area that may interest our membership with them!

In addition, during the SEGSA meeting, we elected Blair Tormey, Professional Geologist and Coastal Research Scientist in the Program for the Study of Developed Shorelines at Western Carolina University, as the new VP for SENAGT.

More recently, Eleanor Gardner, FOSSIL Project Coordinator at the Florida Museum of Natural History, has accepted nomination as our new section Secretary. Watch for Secretary election details in a forthcoming email from me. We're excited for all of this new interest!

Get Involved!

If that then leaves you wondering, wow, so much is going on, can I get involved as well? The answer is... YES! We are very interested in having more of our members lead, contribute to, and participate in our events, especially our students and K-12 educators. Alternatively, if you have ideas as to what you would like to see SENAGT offer you as a member, please let us know so we can work toward better serving you! One of our goals in the near future is to expand our presence online by starting a Facebook group so that we can share regional news and educational resources more frequently. If you are interested in helping with this initiative, or in recruiting new members, nominating or judging OEST awards, or aiding in other ways, drop us a line. We look forward to hearing from you!

Earth Science Week

Lastly, please let us know if you have events to promote near you for Earth Science Week (ESW) coming October 11-17, 2015. Don't forget that you can order a free ESW Toolkit for materials and ideas on how to celebrate in your own classroom from the following website. <http://www.earthsciweek.org/>

Happy start of the school year to all of you! Keep doing the great work that you do.

Cheers,
Christy C. Visaggi

FOSSIL-DPS Mini-conference October 12-13

by Eleanor Gardner, FOSSIL Project Coordinator and SENAGT Secretary nominee

The FOSSIL Project and the Dallas Paleontological Society (DPS) are excited to announce a two day mini-conference taking place October 12 & 13, 2015 in Dallas, TX. The mini-conference will feature field trips, townhall-style discussions, breakout topical sessions, and renowned vertebrate paleontologist Paul Sereno as the keynote speaker. This event is open to all amateur/avocational paleontologists, fossil enthusiasts, and professional paleontologists and will occur just prior to the Society of Vertebrate Paleontology annual meeting in Dallas.

You might be wondering, what is the FOSSIL Project? FOSSIL stands for *Fostering Opportunities for Synergistic STEM with Informal Learners*. Based at the Florida Museum of Natural History, and with funding from the National Science Foundation, FOSSIL is cultivating a networked community for amateur and professional paleontologists to collaborate in learning, science, and outreach. The goals of FOSSIL include building a national “social paleontology” network, providing opportunities to engage in training and development, conducting outreach to K-12 as well as underserved audiences, contributing to the growing digitized collections in natural history museums, and researching how best to effectively engage the public with scientific data.

The FOSSIL community currently consists of 36 different fossil clubs and societies, such as the Dallas Paleontological Society, from across the United States. We invite all fossil groups and individual fossil enthusiasts to become a part of this community. A great introduction would be to attend the joint FOSSIL/DPS mini-conference on Oct 12 & 13.

The mini-conference will feature the following events:

- Oct 11: Optional pre-meeting field trip to North Sulphur River
- Oct 12 (AM): Optional tour of Southern Methodist University’s Schuler Museum of Paleontology
- Oct 12 (12PM): Introduction (light lunch provided)
- Oct 12 (1 PM): Fossil legislation townhall discussion with BLM representative and Senior Paleontologist Scott Foss and Amateur/Avocational representative Linda McCall (President, North Carolina Fossil Club)
- Oct 12 (2PM): Presentation on National Fossil Day by NPS Senior Paleontologist Vincent Santucci
- Oct 12 (3PM): Breakout Topical Sessions
- Oct 12 (5PM): Dinner on your own
- Oct 12 (7PM): Reconvene before DPS monthly meeting
- Oct 12 (7:30PM): “Feathered Dinosaurs” lecture by University of Chicago professor Paul Sereno
- Oct 13 (AM): field orientation presentation
- Oct 13 (most of day): field trip – Jacksboro and Mineral Wells Fossil Park (boxed lunches provided)
- Oct 13 (7:30PM): SVP special public lecture by William Tsutsui, “Chasing Godzilla”

Please note that travel, lodging, and all other associated costs are the responsibility of each attendee. For more information, including logistical details, please visit <http://www.myfossil.org/october-2015-mini-conference-dallas/>. To register for the mini-conference, please contact the FOSSIL Project Coordinator, Eleanor Gardner, at fossil@fimnh.ufl.edu or (352)-273-1936.

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. 31–Apr. 3, 2016	Nashville
Eastern	Nov. 12–14, 2015	Philadelphia
Southern	Nov. 6-8, 2014	Orlando
Alabama	Feb. 16-17, 2016	Birmingham
Florida	Oct. 22-24, 2015	Tallahassee
Georgia	Feb. 4-6, 2016	Stone Mountain
Louisiana	Nov. 9-11, 2015	Baton Rouge
Mississippi	Oct. 25-27, 2015	Jackson
North Carolina	Nov. 12-13, 2015	Winston-Salem
South Carolina	Nov. 4-6, 2015	Columbia
Tennessee	Mar. 31–Apr. 3, 2016	Nashville

Geological Societies		
Organization (Area)	Latest date on web site	City
GSA (National)	Nov. 1-4, 2015	Baltimore, MD
GSA (Southeastern)	Mar. 31- Apr. 1, 2016	Columbia, SC
GSA (South Central; incl. LA)	Mar. 21-23, 2015	Baton Rouge, LA
Georgia Geological Society	Oct. 9-11, 2015	Cartersville
Carolina Geological Society	Oct. 23-25, 2015	Columbia, SC

State News in Geoscience Education

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, Co-State Representative)

The big news this year is that the state Department of Education has written new K-12 science standards. The first public draft was a huge step into non-science, but I and many others contributed numerous comments, and a revised draft was much improved. We await a final decision.

University of Alabama

Graduate student Michelle Gannon worked with the Tuscaloosa Magnet School most weeks in geoscience-related education outreach. MS student Christine Bassett will take over this from Michelle this year. Graduate students Christine Bassett and Joanna Clark participated in the AWESome partnership with Arcadia Elementary once a week last year.

Faculty (Natasha Dimova, Alberto Perez Huerta, and Yuehan Lu) along with several graduate students (Michelle Gannon, Alexandra Nicosia, Taylor Payne and others) led three events in the Alabama Science Olympiad on UA's campus. Faculty members Deborah Keene and Fred Andrus evaluated K-12

science standards.

University of West Alabama

Tim Chowns (University of West Georgia) and Andrew Rindsberg (University of West Alabama) led a field trip to explore the stratigraphy, paleontology, ichnology, and mining history of the Silurian Red Mountain Formation from Bessemer, Alabama, to Chattanooga, Tennessee. In the process, they proved that a two-day field trip is still viable. The guidebook has been published, along with the other guidebooks of SE GSA field trips led out of Chattanooga, as:

Chowns, T.M., & Rindsberg, A.K., 2015, Stratigraphy and depositional environments in the Silurian Red Mountain Formation of the southern Appalachian basin, USA, in Holmes, A.E., ed., *Diverse Excursions in the Southeast: Paleozoic to Present: Geological Society of America Field Guide*, no. 39, p. 95-143.

The University of West Alabama (Livingston) hosted the annual meeting of the Alabama Academy of Sciences, and its Junior Academy (where high school students present their research). There has been little geology presented in this venue in recent years, though it would seem to represent an opportunity, particularly for students.

University of South Alabama

In the Fall of 2015, student members of USA's chapter of Sigma Gamma Epsilon (the Earth sciences honors society) will begin their K-12 community service project providing mineral kits to all public schools in the University's 7 county service area. Quality mineral kits will be assembled at the university under the direction of chapter president Kourtney Crutcher. Instructional videos designed to help teachers in using the minerals will also be made and distributed with the kits. In total, the student group expects to distribute more than 100 kits to all middle and high schools in the service area within the next year or so. Rock kits highlighting Alabama's rich geology will also be distributed at this time.

Geology students and faculty also participated in the regional Science Olympiads held at Springhill College, and provided interesting events for the GEMS (Girls Engaged in Math and Science) meeting all of which were held in the Spring 2015 semester.

Acknowledgments

Andrew K. Rindsberg (UWA), Fred Andrus (UA), Doug Haywick (USA).

Florida (Welcome new State Representative: Kim Cheek)

CPALMS, the FL Department of Education portal for teachers has recently developed a set of problem-based learning for STEM education. There are activities for elementary, middle, and high school. Many have a geoscience, astronomy, or climate science focus. You can find them at this website.

<http://www.cpalms.org/Public/ResourceCollection/Preview/59>

Georgia (Welcome new State Representative: Katy Smith)

Geology at Decatur Book Festival

The Decatur Book Festival will be held on September 4-6, 2015, in Decatur, GA. Beth Shapiro, author of *How to Clone a Mammoth: The Science of De-Extinction* will be presenting on Sunday, September 6, from 1-2 pm. Alexandra Witze and Jeff Kanipe, authors of *Island on Fire: The Extraordinary Story of a Forgotten Volcano that Changed the World*, will be presenting the same day from 2:30-3:15 pm [ed. note – I will have the honor of introducing Witze and Kanipe, and highly recommend their book as a great blend of history and geoscience.]. Additional information can be found at

<https://www.decaturbookfestival.com/>.

STEM Fest at Georgia Southern

Georgia Southern University, located in Statesboro, GA, will be hosting the third annual STEM Fest on Saturday, September 26, 2015, from 10 a.m. to 4 p.m. There will be more than 50 exploration stations this year, with opportunities for participants to blast off Alka-Seltzer rockets, learn about the Environmental Protection Agency, go on a mission with the Army, and dig for fossils!

STEM Fest is a free event with activities for K-12 students. More information can be found at <http://research.georgiasouthern.edu/stemfest/>

Georgia Geological Society will revisit Cartersville area with AEG [-contributed by ed.]

This year's annual Georgia Geological Society meeting and trip will be in Cartersville, October 9-11. GGS will be joined by members of the Association of Environmental and Engineering Geologists from throughout the southeast. The trip, which welcomes the public along with professionals and students, will examine the famous blue-quartz-bearing 1.1 billion year old Corbin Metagranite, visit the New Riverside Ochre (and barite) mine and a large 19th-century iron pit, examine puzzling structural fabric and a limestone outcrop within one of the southernmost exposures of the late Proterozoic Ocoee Supergroup, and look at evidence for the relative timing of the north-trending and east-west trending faults at the Cartersville recess of the Valley and Ridge/Blue Ridge-Piedmont boundary. Watch for trip details soon at <http://www.westga.edu/~ggsweb/> or the [Georgia Geological Society Facebook page](#).

Tellus Museum Hosted Fossil Event for Lunch and Learn

The Tellus Museum in Cartersville, GA, presented *Fascinating Fossils and the Stories They Tell*. This program was held on August 26, as part of their *Lunch and Learn* series. Geology Program Manager Kerry Cornwell shared stories on the fascinating fossils in the museum's fossil dig. Participants received a fossil goodie bag and fossil hunting certificate. Information on future *Lunch and Learn* events can be found at <http://tellusmuseum.org/museum-events/lunch-learn/>.

Louisiana (Submitted by Wendy Demers, state representative)

The Louisiana Association of Science Teachers will host its 2015 Joint Math and Science Conference, "*Enlightening Students, Empowering Teachers*" November 9-11 in Baton Rouge. For more information see <http://www.lsta.info>.

Mississippi (Submitted by Adam Skarke and Renee Clary, state representatives)

Mississippi State University

Center of Academic Excellence in Geospatial Science: The National Geospatial-Intelligence Agency (NGA) and the U.S. Geological Survey (USGS) have designated Mississippi State University as a Center of Academic Excellence (CAE) in Geospatial Sciences. NGA and USGS announced the designation at the GEOINT 2015 Symposium in Washington, D.C., on June 22nd.

According to NGA, the new pilot program is designed to keep America on the leading edge in the application and use of geospatial sciences for national security, military planning and operations, homeland security and disaster management, earth sciences, and global security issues in energy, health and the environment.

Earth Day: The Dunn-Seiler Museum at Mississippi State University, in conjunction with Gaining Ground Sustainability Institute of Mississippi, sponsored its fifth annual student creative recycling competition for Earth Day. Earlier competitions focused upon recycling plastic water bottles, plastic bottle caps, and telephone books, but the 2015 competition featured the re-use and recycling of Styrofoam.

Dr. Renee Clary, Director of the Dunn-Seiler Museum, was excited with the submissions: "We suspected students would find a use for foam packing peanuts, but we did not anticipate that students could find creative uses for computer packaging and recycled ice chests! We were extremely excited when teachers unloaded their students' entries at the museum."

Right: Yazoo County Middle School teachers, Ms. Tammie Bright and Ms. Tammie Franklin, unload student entries for the Earth Day contest.



Judges for the competition included Dr. David Hoffman (MSU Anthropology & Middle Eastern Cultures, and faculty sponsor of Students for a Sustainable Campus), Dr. Athena Owen Nagel (MSU Geosciences), and Mr. Jeremy Adams (Dunn-Seiler Museum).

Left: Dr. Athena Owen Nagel, Geosciences, judges the Styrofoam submissions.

Below: Winning entries on display at the MSU Geosciences Earth Day table, April 22, 2015.

Several students from Yazoo County Middle School, under the supervision of Ms. Tammie Bright, participated in the competition. Winners included:

- First Place: Kali Grace Cotton for a "StyroFarm"
- Second Place: Skylar Beliew for a Photo Frame
- Third Place: Kalyn Jefferson for a Vanity Set
- Receiving Honorable Mentions were
- Ben Pennington, for a Birthday Candy Arrangement
- Marinee Humphries, for a Decorative Fruit Basket Arrangement



National Fossil Day: The Dunn-Seiler Museum at Mississippi State University will be hosting an art and story competition for National Fossil Day, Wednesday, October 14. Event details are posted at: <http://geosciences.msstate.edu/museum.htm>

Mississippi Museum of Natural Science

Fossil Road Show: The public can explore Mississippi's fossil past through activities, investigations and games. Friday, October 9, 10 a.m. to 12 p.m. at the [Mississippi Museum of Natural Science](http://www.mississippimuseum.org), Jackson, MS. Interested visitors should check the MMNS calendar: <http://www.mdwfp.com/see-visit/events.aspx>

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

North Carolina Science Teachers Association Professional Development Institute (NCSTA-PDI)

The NCSTA-PDI will return to Winston-Salem this year **November 12-13, 2015 at the Benton Convention Center in Winston-Salem**. Registration is now open www.ncsta.org. The NCSTA has had its new website up and running for almost a year now. Take a few minutes to check it out www.ncsta.org.

N.C. Earth Science Teacher and Educator Awards

During the PDI, attend the award ceremony for the N.C. Outstanding Earth Science Teacher (OEST) and N.C. Outstanding Earth Science Educator (OESE). Visit the N.C. Geological Survey website (<http://portal.ncdenr.org/web/lr/512>) to see previous winners and find out more about the awards, including all of the generous sponsors.

- The 2015 NC OEST award winner is Ms. Rebekah Fuerst from Parkwood Middle School in Mecklenburg County.
- The 2015 NC OESE award winner is Ms. Joanna Wallace from Joyner Magnet Elementary School in Wake County.

N.C. Geological Survey website

The N.C. Geological Survey website has been undergoing an update and reorganization. Currently the website is being migrated to a new platform which will hopefully be unveiled this Fall. My focus is on the Geoscience Education section (formerly the Project Earth section), which can be found at: <http://portal.ncdenr.org/web/lr/earth-science-outreach>. Changes to the entire site are underway. Please contact me at Randy.Becht@ncdenr.gov with any questions or suggestions regarding the Geoscience Education website.

Puerto Rico (State Representative position open)

South Carolina (compiled by newsletter editor)

Carolina Geological Society

The 2015 Carolina Geological Society Annual Meeting and Field Trip will be based at the Embassy Suites Greystone in Columbia, SC, October 23-25, 2015. The Field Trip is titled, "Tectonic History of the Eastern Piedmont, South Carolina, or Alpine Tectonics Come Home to Roost in South Carolina." The trip will compare and contrast structural, metamorphic, and lithologic elements between the Charlotte "belt" rocks and Carolina terrane rocks ("slate belt") in the area north of Columbia. The trip will focus on mapping studies in three soon-to-be-published maps (1:24,000-scale). Descriptions of structural style and timing will be used to highlight differences between North Carolina and South Carolina eastern Piedmont terranes. Sunday's trip will be to the Lake Murray spillway, where another potential monkey wrench will be considered. Information is at http://www.carolinageologicalsociety.org/CGS/2014_Meeting.html.

South Carolina Science Council

Registration begins soon for the SC² 38th Annual Conference, November 4-6th 2015, at the Columbia Metropolitan Convention Center. Visit <http://www.scscience.org/sc2-conference>.

SENAGT-Sponsored Events at SEGSA in Columbia, March 31-April 1, 2016

SENAGT-sponsored theme sessions and a post-meeting field trip are in the offing for the southeastern section meeting of the Geological Society of America, in Columbia.

The theme session *Issues in Environmental and Climate Education*, proposed to GSA by Treasurer Pamela Gore and Newsletter Editor Bill Witherspoon, is described as follows:

“Scientific data show that climate change is occurring, and scientists overwhelmingly agree on its causes and consequences. However, climate change and other environmental issues are often surrounded by public misunderstanding and doubt. The role of educators is critical in teaching the science of how Earth systems are affected by human activities, the consequences of those changes, and what can be done to mitigate the changes. This session invites a fresh look at the challenges and achievements of environmental education.”

Frank Forcino of Western Carolina University and Rachel Salter of North Dakota State University have proposed *Evolution Teaching Practices and Data-rich Research*, described as follows:

“Evolution is the binding principle of all of biological and many geological sciences, yet teaching the subject continues to prove challenging and sometimes controversial. We invite presentations about lesson plans, activities, or other innovative means of conveying evolution and getting past cognitive biases or misconceptions. In addition, we welcome presentations about evidence-based, data-rich evolution education research.”

Watch the GSA web site at <http://www.geosociety.org/Sections/se/2016mtg/> for opportunities to submit an abstract for these two timely sessions.

SENAGT will cosponsor a GSA field trip on April 2, *Deep Time on the Congaree: an Educator Field Workshop*. Led by David Shelley, Education Coordinator of the Old-Growth Bottomland Forest Research and Education Center at Congaree National Park, and Bill Witherspoon, the trip is described as follows:

“Participants in this one-day field workshop (Saturday, April 2) will explore the geologic, biologic, and climate history of Congaree National Park and the Congaree River Valley at several time scales. These include 1 to 1000 year time scales for old-growth floodplain forest growth and anthropogenic climate change; 1000 to 10,000 year time scales for floodplain landscape features; 10,000 to 1 million year time scales for ice age climate change and terrace formation, and 10-100 million year time scales for exposed strata of the Upper Coastal Plain. Stops will also address deep time and evolution in relation to the local biodiversity. Participants will visit and hike in Congaree National Park and the SC Department of Natural Resources Congaree Bluffs Heritage Preserve; additional presentations and materials will round out the content. This trip is targeted towards K12 educators and others interested in thinking about time at varying scales. This Field Workshop is sponsored by the NPS Old-Growth Bottomland Forest Research and Education Center and the National Association of Geoscience Teachers, Southeastern Section, and complemented by theme session on “Issues in Environmental and Climate Education.”

As with the 2015 meeting, SENAGT anticipates having funds available to assist K-12 teachers interested in attending its theme session(s) and/or field trip. Contact bill@georgiarocks.us to be notified of the application process once it is in place later this fall.

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

University of Tennessee Chattanooga Reorganization

University of Tennessee at Chattanooga has reorganized some science departments by combining the Geology program with Biological and Environmental Sciences programs, forming a new department called Biology, Geology and Environmental Science. The physical location of the geology program in

Grote Hall 2nd floor has remained the same. Physics and Astronomy program has been added to the Chemistry department. Their physical location remains in Grote 2nd floor as well.
[ed. note: many kudos to UTC Geology for making it look easy for a small department to pull off hosting SEGSA. It has been done before, but it is always amazing to watch!]

Middle School Geology Outreach: Touching An Entire County

Martin Kohl of the Tennessee Geological Survey annually presents a hands-on program to middle school students in the Morristown, Tennessee region. Kohl explains, “If you only have the kids for 15 or 20 minutes, you are pretty limited in what you can cover, but basically I am trying to give them a foundation and context for an understanding of their world even if they never think about geology again. Equally important, I try to plant a seed of fascination with something as ‘boring’ and low-tech as rocks and resources. The one down side is that there is little time for two-way communication, in such a short time, and I have found that most ‘questions’ turn out to be attempts at sharing things that they have seen or someone in their family owns.”

The program provides the middle schoolers with a day-long field trip to a nearby large county park where the students visit various stops to learn about geologic processes and materials, broken-up to allow for a lunch break. The earliest iterations of the program ran for three days for all of the fourth grade classes in the county to participate. Each morning a new set of children are bussed in from their schools, where they assemble in a large picnic shelter for the introduction as to what to expect and to meet the presenters that will be at the various stops. Teachers shepherd the classes of 15 or so students from stop to stop. Horn blasts signal the time to move to a new “outcrop”. Besides geology there are two presentations on wildlife, an erosion demonstration, a talking tree, fisheries presentations with some trout in a portable aquarium, the manufacture of paper, and several others.

For example, when the group reaches Kohl’s station, he makes sure they understand that what we are talking about is “bedrock” and that it’s solid rock for miles and miles. In unison the students chant the names of the three basic rock types, which have labeled samples for them to study. Kohl stresses that the variety of bedrock is a function of where you are. The igneous rock tray includes scoria, a volcanic bomb, gabbro, and a broken piece of coarse-grained granite countertop, allowing Kohl to talk about minerals in their geologic context, their names, mineral cleavage, and the relationship of minerals to rocks. With the sedimentary rocks Kohl emphasizes sediment types, sedimentary environments, and the overwhelming abundance of fossils, not just as something confined to museums and picture books, but locally within the Morristown area. Even though the region does not contain metamorphic rocks, Kohl produces a weakly metamorphosed slate, with bedding and slaty cleavage visible. A student favorite is the silvery mica schist, which surprises them when they learn it represents shale, and before that mud and clay that was deposited as layers under water.

The next tray of rocks begins to put veins and such things as geodes into context and allows relationships to other Tennessee regions to be drawn. Thin calcite veins lead into some of Tennessee’s zinc ore breccias, one of which has some sparkly crystals visible in the open space. Kohl notes that it is about at this point he encounters the fact that nearly all students are unaware at their middle school age that zinc is a metal, so he now has the “teachable moment” to explain about zinc and its uses with a couple die cast toys, zinc castings, galvanized steel, and batteries. The highlight and memory maker for the kids comes when Kohl takes a Lincoln penny and rip it in two with a big wrench and pair of pliers to reveal the silvery zinc inside, which he then offers as a souvenir to two lucky students. Once Kohl tried having a student rip apart the penny using a wrench and a vise. In that case, the torn halves elicited little interest, allowing the somewhat disappointing conclusion that nothing reinforces like a flamboyant patriarchal demonstration of strength.

As Tennessee’s Official State Rock is limestone, Kohl demonstrates the acid test by dropping dilute hydrochloric acid on limestone, comparing it with a piece of similar-looking dolomite, and then talking about the bedrock in the park and how a geologist also can have trouble telling limestone and dolomite apart. There is a low outcrop of fine grained dolomite nearby in the park, so Kohl marches them over to and talk about how you can use observations such as the presence or absence of “elephant skin”

surface cracks on the rock and whether or not the acid easily fizzes to derive conclusions independently of preconceived ideas. The program has become a local staple for the middle school students and is easily emulated anywhere in the southeast. For more information about this program contact Martin Kohl (Martin.Kohl@tn.gov).

Geoscience Career Planning Session Planned for GSA Baltimore

Larry McKay, University of Tennessee, Knoxville Earth & Planetary Sciences and **Heather McDonald**, College of William and Mary, will be organizing a session of interest for geoscience majors for the 2015 GSA meeting in Baltimore, MD (Nov. 1-4, 2015) entitled: Topical Session T79 - Geoscience Career Planning in the Classroom and Beyond.

Geoscience graduates enjoy a wide variety of career opportunities, but many are unprepared for highly competitive job searches or the challenges they are likely to face in the workplace. This can impact graduates at all levels, from BS to PhD, and all geoscience market sectors, including consulting, engineering, petroleum, government service and academia. In most university/college geoscience programs (graduate or undergraduate), the curriculum contains little if anything on essential job search skills, like networking, writing CVs or application letters, preparing for interviews, negotiating, etc. Even once a graduate has obtained a desired position, they are often ill prepared for the non-scientific job-place challenges, which may include proposal writing, teaching, working within interdisciplinary teams, managing staff, balancing budgets and developing family/career balance. At universities/colleges where student career planning is an important part of the program, it is often carried out in extra-curricular venues, like individual mentoring by a faculty member, hosting recruiting visits by major employers, university-wide job fairs, referring students to workshops at conferences, career mentoring websites, etc. Job search or career development skills are rarely taught by geoscience faculty as for-credit university courses, even though success in student job placement is becoming increasingly important as a metric of geoscience program performance. The goal of this topical session is to explore the respective roles of academic institutions, employers and professional organizations, in helping prepare students for successful geoscience careers. Of special interest are presentations on development of university or college courses in geoscience undergraduate career planning, academic career planning and industry/university or government/university career training partnerships.

New Field Guide Resource Related to Scopes Trial

William D. Witherspoon (Decatur, GA), **Michael A. Gibson** (University of Tennessee at Martin) and **Don W. Byerly** (Emeritus from University of Tennessee Knoxville) co-lead a field trip entitled *Evolution and the evidence around Dayton, Tennessee* as part of the 2015 Southeastern Section of GSA meeting, held in Chattanooga. The overall purpose of the field trip, which drew schoolteachers and professors from throughout the southeast, was to add another dimension to the study of the famous Scopes Evolution Trial of 1925. As Dayton, TN is situated at the foot of the Cumberland escarpment and near Sequatchie Valley, it was a perfect



Participants of the 2015 “Evolution and the Evidence Around Dayton Tennessee” field trip pose for a picture outside the courthouse in Dayton, Tennessee.

field laboratory for understanding deep-time geology and fossils, if the 1925 participants had known to look! The irony of this famous trial occurring amidst such a geologically informative region provided the theme for the field trip. The participants visited the Dayton courtroom and viewed trial memorabilia, like most school groups would, but they also visited local outcrops spanning the Paleozoic to see firsthand

the abundant evidence for both geological and organic evolution, along with evidence of ancient environments from warm tropical seas to steamy fern forests, spanning two hundred million years of Earth history. The published field guide can now add a new scientific comparison for any field trip to this historic site.

University of Tennessee Martin Receives Scholarship Money to Benefit Needy Science Majors

The University of Tennessee at Martin has received a NSF grant entitled *Project UTM S-STEM*, which will provide 35 scholarships to science majors. The average award per student will be \$4,800, given to academically promising undergraduate students majoring in Chemistry, Engineering, Geology, Computer Science, and Mathematics. The framework of this project will provide the resources needed to recruit, support, and retain more students, including minorities and women, in STEM fields. Students with demonstrated financial need, as well the desire and capability to major in an underrepresented STEM field: Geology, Chemistry, Mathematics, Engineering, or Computer Science will participate as a cohort in a UTM STEM Academy to aide in their academic preparation and retention. Each summer for four years, the S-STEM Scholars will attend a two-week academic intensive course, collaboratively taught by all STEM disciplines that will review material from the previous year and introduce material students will see in the upcoming year. The academy will help to remedy areas S-STEM Scholars are struggling with and give them a jump-start on the upcoming year. As part of a learning community cohort, students will be provided both scholarly and social activities to support the S-STEM Scholars to persist in STEM and aid in career exploration. Extensive field trips will be planned each semester to industrial sites, universities, schools, and other areas specific to each of the disciplines represented along with monthly seminars or workshops. Each scholar will be expected to complete 40 hours (5 per semester) of service learning. In addition, the UTM Career Center will help with career opportunities in government, industry, research, academia and education through field trips, speakers, and career exploration. S-STEM Scholars will be encouraged to participate in research/projects with mentoring faculty to broaden their STEM experiences. The Project Team will also work with students to apply to internships, summer experiences, or REU programs.

2016 National Science Teachers Association Meeting, Nashville

The National Science Teachers Association National Conference will be held in Nashville at Music City Center, 2015 Fifth Avenue South, Nashville TN 37203 from March 31–April 3, 2016. This year's conference theme is *Science: Empowering Performance* and will contain focus sessions on the following strands: Setting the Stage: Scientific Literacy; Building the Band: Involving Community Stakeholders; Harmonizing Concepts: Integrating Instruction; and Stringing It All Together: Three-Dimensional Learning. For more information, visit <http://www.nsta.org/exhibitsadv/national2.aspx>.

An online Outstanding Earth Science Teacher (OEST) nomination form is now available at <http://nagt.org/nagt/programs/oest-nom.html>.

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