



National Association of Geoscience Teachers
Southeastern Section Newsletter
Winter-Spring 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

Fall-Summer 2015 Newsletter

Deadline:

August 15, 2015. Please send
news items to Bill at
bill@geogiarocks.us

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President's message

by David Kopaska-Merkel, SENAGT president

Welcome to the winter-spring SE NAGT newsletter, and my last as President of this organization. Christy Visaggi will take over at the Section business meeting in Chattanooga this March.

Business meeting March 20 in Chattanooga

Join us to meet over lunch March 20 at 11:30 at the Public House, 1110 Market Street, about a block northeast of the GSA meeting site. The cost will be \$15 per person, payable at lunch, and includes a fixed menu of multiple options (e.g., soup & salad, fried chicken salad, grilled cheese w/ fries, fish and veggies, etc.) plus soft drink and dessert. If you are interested in lunch (or just would like to share your input for SENAGT) please complete the form at the following link

https://docs.google.com/forms/d/1gF_gJ3KwheokY3bgKzHPQ7b2kHdEPIGmrsnerrkTOI/viewform

2016 SE GSA meeting

The meeting is in Columbia SC, 31 Mar-1 Apr., chair Venkat Lakshmi (vlakshmi@geol.sc.edu). We will have our next business meeting there, and if the past is anything to go by, we will sponsor one or more technical sessions or field trips. It is never too early to brainstorm about sessions or trips you might want to lead, or to participate in. This is something that I hope there will be time to discuss at the Chattanooga meeting.

Getting more involved in this Society

If you think it is time for you to take a leadership role in the section, please get in touch with me or Christy. I would love to talk to you about the responsibilities of the different jobs and anything else you may have questions about. If you, members of this section, want to get more involved in NAGT, but you don't think you're ready to become an officer, there are plenty of other things to do. For instance, you can become an alternate state representative; you can spend some time recruiting OEST nominees, or simply nominate them yourself. You can also recruit colleagues for the SE NAGT. We could use more members, and especially we could use more people active in supporting earth science education at the K-12 level. Anybody who wants to encourage high-quality earth science education for young people will be better able to accomplish that goal if they work with like-minded people, namely us.

Outstanding Earth Science Teacher award

The submission deadline for our section is not until May 1, and you can organize your state OEST program any way you like, provided that you choose a winner before May 1. We do get some nominations directly through the national website. This is a great way for teachers to find us, but it is important to be out there in the community, looking for good teachers who don't know who we are. My personal feeling is that starting early to look for nominees gets us more nominees. So, keep your eyes open. Encourage teachers to nominate themselves or each other. Nominate them yourself if you know enough about the quality of their work. This award is appreciated, by teachers and their principals, and every little bit of encouragement for educators helps. Also, if you've had good nominees in recent years who did not win, please ask them or their previous nominators to try again.

I have enjoyed serving the SE section as president (I have done it twice now) and, to paraphrase a public figure of yesteryear, rest assured that you will still have me to kick around for a long time to come.

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Chattanooga SEGSA Meeting

by Bill Witherspoon, SENAGT newsletter editor

The SENAGT-sponsored theme session, **Teaching Evolution in the Southeast**, attracted 16 papers and will run both [morning](#) and [afternoon](#) of Friday, March 20. It is described as follows:

“Teaching of evolution in the K-16 setting is controversial in the U.S., and particularly in the southeast, where religious views that may conflict with evolution are strong. This session will address challenges to teaching evolution in the southeastern U.S., as well as strategies for overcoming these challenges.”

The companion Saturday, March 21 field trip **Evolution and the Evidence around Dayton, Tennessee** has made and has room for one or two more participants. It is described as follows:

“Dayton, TN, less than 40 miles from Chattanooga, is the site of the 1925 conviction of John T. Scopes for teaching evolution in violation of a lately passed Tennessee state law. It also lies at the foot of the Cumberland escarpment, in an area well-suited for illustrating geological concepts. This trip is especially for teachers of middle school through undergraduate students, and will complement the theme session Teaching Evolution in the Southeast. Participants will visit the courtroom where the trial happened and an exhibit of trial memorabilia, and also will see rocks of many Paleozoic ages, examining the evidence of ancient environments from warm tropical seas to steamy fern forests, spanning two hundred million years of Earth history.”

Hope to see you at these events, and at the lunch meeting Friday (see President’s letter).

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. 12–15, 2015	Chicago
National 2016	Mar. 31–Apr. 3, 2016	Nashville
Eastern	Nov. 12–14, 2015	Philadelphia
Southern	Nov. 6-8, 2014	Orlando
Alabama	Mar. 3-4, 2015	Birmingham
Florida	Nov. 6-8, 2014	Orlando
Georgia	Feb. 2016	Peachtree City
Louisiana	Nov. 9-11, 2015	Baton Rouge
Mississippi	Oct. 19-21, 2014	Jackson
North Carolina	Nov. 6-7, 2014	Winston-Salem
South Carolina	Oct. 29-31, 2014	Myrtle Beach
Tennessee	Mar. 31–Apr. 3, 2016	Nashville

Geological Societies		
Organization (Area)	Latest date on web site	City
GSA (National)	Nov. 1-2, 2015	Baltimore
GSA (Southeastern)	Mar. 19-20, 2015	Chattanooga, TN
GSA (South Central; incl. LA)	Mar. 19–20, 2015	Stillwater, OK
Georgia Geological Society	Oct. 11 - 13, 2013	Dahlonega
Carolina Geological Society	Oct. 31- Nov. 2, 2014	Spartanburg, 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 and SENAGT President)

The big news this year is that the state Department of Education has written new K-12 science standards, which are briefly discussed below. At the time of writing, the draft standards have been reviewed by educators and scientists and they are in the process of revision (I hope!). Next time around I will be able to tell you whether cool and logical heads prevailed.

Universities

UA continues the long-running series of ALLELE lectures (<http://evolution.as.ua.edu/>) in 2015 with 3 speakers in the fall & winter of 2014-15 and 3 more speakers coming in the spring. The schedule for fall 2015 is not yet finalized. The free lectures are open to the public, but are seen mostly by the UA community. They are available at iTunesU (<https://itunes.apple.com/us/itunes-u/alabama-lectures-on-lifes/id404003891>), and most speakers are interviewed for Speaking Evolution (<http://www.speakingevolution.org>). Last fall's offerings included a talk on October 2 by Emory University ichnologist Anthony J. Martin on the same topic as his new book: *Dinosaurs without Bones: What Dinosaur Trace Fossils Tell Us about Evolution*.

UWA hosted noted paleontologist Gabriela Mángano (University of Saskatchewan) to speak on "The Trace-fossil Record of the Cambrian Explosion" at a Science Coffee Shop in Livingston on March 20. The event was funded in part by the Association for Women Geoscientists. See below for more UWA-sponsored activities.

Auburn University has introduced a field project component to introductory geology.

Introductory collegiate geosciences courses often present an array of unique and interesting issues that are challenging for teachers, and the solutions of how to best address these issues are seldom agreed upon. These introductory courses are often composed of a wide range of majors, and a majority of these are non-geoscience / non-science related. It is this diversity that generates many of the issues often faced by instructors when planning for these courses, the largest being how to structure introductory geoscience courses to meet the educational needs of those within the major while simultaneously reaching the non-science majors in such a way as to encourage an appreciation for the geosciences

In an attempt to balance these issues, an independent project-based activity, designed specifically with a field component, was introduced in spring 2014 in the Dynamic Earth courses at Auburn University. Recent successes with these project-based exercises suggest that hands on field-based activities for introductory level students not only worked well to reinforce the learning objectives, but also provided a unique perspective on types of fieldwork currently being conducted in the geosciences. This project-based activity was intended to replicate the experiences of a field geologist; with minor alterations, it could replicate any desired field within the geosciences. In this particular project, requirements were established in order to evaluate the performance of geoscience (geology) majors against non-geoscience /non-science majors. The results demonstrated that the non-geosciences /non-science majors performed equivalently to the geoscience majors. By raising the course standards and using hands-on fieldwork activities as a method for evaluation, it proved successful in narrowing the interest gap created by the diversities of majors and interests.

Project requirements were the following: locate five natural outcrops within the Auburn, AL area, photograph/sketch the outcrop, use GPS to map the location (cell phone app), identify rock type and apparent minerals when possible, identify metamorphic grade, and produce a basic area map that detailed the locations and rock types found at each. Students were directed and encouraged to work in groups in order to benefit from peer learning and for safety concerns. As to be expected, quality and accuracy varied from group to group. However, many students expressed that approaching an outcrop independently while having to rely solely on the skills they learned in class helped to solidify and tie together the various topics discussed in class.

This project was successful in getting the students out of the classroom and into the field, something usually reserved for non-introductory geoscience classes. This project demonstrated that the above tasks could be completed by an introductory non-science major to a moderate degree of accuracy. Accuracy could be improved with designed lectures that were strategically placed throughout the semester in order to boost project accuracy.

This project could be reproduced at any high school or university by adjusting the project goals; for example, substitute a grain size objective rather than metamorphic grade, identify fossils rather than rocks/minerals, or shift the focus to topics better suited for that particular geoscience class. The introductory students benefit from the field experience more than any specific learning objective. Field experiences should not be used exclusively for upper classmen, but should be viewed as beneficial experiences for our students at any level.

K-12 schools

Alabama COS – Science. The Alabama Department of Education finally came out with the new draft course of study for science in January 2015. People were given less than a month to review the course of study. Over the past 10 years the state Department of Education appears to have forgotten much of what it knew about science. Not only is the draft course of study drenched with pseudoscientific jargon, but fundamental principles of fact-based inquiry receive only lip service in many parts of the document. More shockingly, evolution is hardly mentioned anywhere, except in the context of variation within a species. The worm of creationism has slipped back into the apple on this teacher's desk. Many of the state's scientists have diligently written comments on the draft, and I hope that the final document will be largely purged of error.

Other institutions

The Geological Survey of Alabama, natural history museums around the state, Legacy (the state's environmental education organization), and other groups continue to host workshops and other activities, and produce science-education materials as in previous years.

The Geological Survey of Alabama, the University of West Alabama (including the Museum of the Black Belt), Discovering Alabama, the Alabama Geological Society, and the Birmingham Paleontological Society, are once again collaborating to put on a fossil field workshop for teachers this coming October (<https://www.facebook.com/pages/Fossils-of-the-Black-Belt/690641810945830>). Last year, the 18th annual teachers' workshop, Fossils of the Black Belt, was led by James P. Lamb (Black Belt Museum, BBM) at a privately owned fossil site near Selma to see fish and turtle specimens being unearthed from Cretaceous chalk before attendees collected fossils themselves. Other leaders were David C. Kopaska-Merkel (GSA) and Andrew K. Rindsberg (UWA). One participant found a brittle star, a starfish relative. Fossil brittle stars are quite rare, even though they are locally common today in the deep sea. The new specimen was donated to the BBM, and will be scientifically described.

The Alabama Geological Society (<http://alageolsoc.org/>) has hosted its 40th annual field trip and published its 40th field-trip guidebook. Most or all of the guidebooks are still in print and cover almost every part of the state. In December the Alabama Geological Society hosted a field trip led by T. Markham Puckett (UNA) and Andrew K. Rindsberg (UWA) with the assistance of Richard Statom, Richard Keyes, and Jim and Faye Lacefield, on Mississippian stratigraphy and paleontology of northwest Alabama. The Society's annual field trips are used for continuing education credits by many

licensed professional geologists; more than fifty people attended.

Legacy (legacyenved.org), Alabama's environmental education organization, hosts regional Envirobowl tournaments around the state, followed by a state championship. The Envirobowl features teams of high school students competing to demonstrate their prowess in recalling environmental facts. Legacy holds a variety of teacher workshops, which combine classroom and field study. Legacy also produces and distributes environmental education publications, and provides small grants to teachers, schools, and other organizations working to promote environmental education.

Acknowledgments:

Andrew K. Rindsberg (UWA), John Hawkins (AU).

Florida (State Representative: Paul Cutlip; no information submitted)

Georgia (State Representative: Gerald Pollack)

Congratulations Donna Governor, Georgia Outstanding Earth Science Teacher 2014

A high school Earth systems instructor and current president of Georgia Science Teachers Association, Dr. Governor is the 2007 Georgia Presidential Awardee for Excellence in Science Education. She writes, "For me, in Earth Systems it is incredibly important that students understand the processes that drive Earth's systems and how they are connected. On a typical day in my classroom you'd see me "lecture" for about 15 minutes, then present students with a hands-on activity that relates to the concept that lasts 30-40 minutes. On lab days, the activities are longer. Sometimes it's a lab, sometimes a technology application, and sometimes a simple experiment.

"What I enjoy most about teaching is finding new ways to present material and making connections. For example, I've developed a number of activities this year using real time data with smart phone apps... I've also found how important it is to tie physical science concepts to earth science –I've brought in solubility curves, phase change diagrams and an ever-present emphasis on energy transformations. I also incorporate science songs in my teaching and even did my dissertation as multiple case study research on using science songs for teaching."



SENAGT Secretary Pamela Gore presents the award to Donna at Georgia Science Teachers Association banquet.

Georgia Geographic Alliance (contributed by Christy Visaggi, SENAGT vice-president)

The [Georgia Geographic Alliance](#) has had an array of exciting opportunities for K-12 educators and students in recent months. Dr. Christy Visaggi of Georgia State University led a four day workshop sponsored by the Paleontological Society on Mapping Georgia Through Deep Time: Exploring Fossils and the History of Life. Teachers participated in field and lab lessons and collected their own specimens for the classroom. They learned how to make their own maps online through [MapMaker Interactive](#) provided by National Geographic. A mini-version of the place-based learning workshop was offered in early February at the Georgia Science Teachers Association annual meeting in Macon.

Furthermore, we're eager to promote our 2015 Urban Atlanta Geospatial STEM Academy for high school students in Georgia for this coming summer. It is a FREE week-long GIS and mapping experience in which students will receive their own tablet to keep after the end of the program! The deadline to apply is April 1 at <http://sites.gsu.edu/stemacademy>. Please feel free to help spread the word about this opportunity at your school or organization by distributing this PDF poster:

[STEM Academy.](#)

Finally, once again, GGA is offering \$500 INSPIRE awards for creative lesson planning on geographic education. Teachers in Georgia, see the following link for details and submit your proposal by March 20! <http://georgiageography.org/funding/>

Atlanta Science Festival (contributed by Christy Visaggi, SENAGT vice-president)

The Atlanta Science Festival is in its second year. Main Link: <http://atlantasciencefestival.org/>.

Events related to GSU:

Discovery Day: <http://atlantasciencefestival.org/events/event/995> (March 21 - Petit Science Center)

Hands-on activities to explore science, lab demos, a careers fair, films, and more! GSU Geosciences will be featuring rocks, minerals, and fossils of GA... maybe more. TBD.

Stone Mountain Hikes: <http://atlantasciencefestival.org/events/event/996> (March 21 - Stone Mountain)

GSU students will be leading hikes up Stone Mountain to share with families the geologic history of that landscape!

Urban Geocaching: <http://atlantasciencefestival.org/geocache> (Most of March - Across Atlanta)

This event runs through March and invite participants to use GPS coordinates to travel to key locations where science and technology are happening in our region. Once arriving at a STEM-tacular location and finding the hidden container ("cache"), participants will record their visits by stamps on a card that can be handed in at the end of the festival for a prize! More updates to come on the website soon.

Exploration EXPO: <http://www.atlantasciencefestival.org/expo> (March 28 - Centennial Park)

TONS of booths representing an array of STEM fields and organizations from the region. The GGA will feature place-based learning of natural resources in Georgia and interactive geospatial mapping applications on iPads as well as drone demonstrations!

georgiarocks.us (contributed by Bill Witherspoon, SENAGT newsletter editor)

The authors of *Roadside Geology of Georgia*, Pamela Gore and Bill Witherspoon, were exhibitors at both the first Georgia STEM Forum in Athens in November and at Georgia Science Teachers Association in Macon in February. We gave away hundreds of samples of blue-quartz-bearing, billion year old Corbin Metagranite, courtesy of the Vulcan Materials Bartow quarry near Cartersville, along with a QR code tag directing recipients to georgiarocks.us/corbin, a web page telling many cool stories about the rock.



Many copies of the book were sold, as well as Kids Rock!tm sets (georgiarocks.us/games), which are activities to self-teach identification of the local rocks and minerals of an area, designed for audiences Kindergarten through Adult.

As a retiree, I have been teaming up with biogeographer Leslie Edwards, first author of *Natural Communities of Georgia*, to give walks and talks highlighting the connection between geology and natural communities, and out of that collaboration we have been invited to give the keynote address for the Georgia Botanical Society's annual wildflower pilgrimage in Dahlonga in May. I have also brought geology workshops and programs to Georgia Mineral Society, Atlanta Audubon, the Sierra Club, and the Southern Appalachian Plant Society.



July 11-18 trip path plotted on Google Earth, from georgiarocks.us/California/itinerary.htm

Next on the schedule (see georgiarocks.us/events) is a March 12 talk, *California: Geology on the Edge*, based on the premise that California's present (along an active plate boundary) is a key to Georgia's past. As an announcement of the talk and the July 11-18 trip explains:

"Few visitors to the San Francisco Bay area realize its impact on the scientific revolution in geology less than 50 years ago. First, polymath K.J. Hsu showed that the Franciscan mélangé, a vast terrain of jumbled blocks of strange rocks, had formed beside deep-sea trenches where Pacific seafloor descended beneath adjacent North America. Then Tanya Atwater's PhD thesis used simple geometry to prove that North America overran Pacific sea-floor spreading sites, neatly explaining the San Andreas fault, the Sierra Nevada, and the volcanic Basin and Range landscape farther east. Atwater's recent animations help illustrate this slide show / Google Earth™ preview of a July 11-19 public nature trip from the Bay across the Sierra, offered by Dr. Bill Witherspoon."

Louisiana (State Representative: Wendy Demers; no information submitted)

Mississippi (Submitted by Adam Skarke and Renee Clary, Mississippi Representatives)

Mississippi's Outstanding Earth Science Teachers:

- **Dixie Houchen**, middle school science teacher at Pearl Junior High School, has been named the Mississippi Outstanding Earth Science Teacher for 2015!

Mississippi State University

Darwin Week: Free and open to all, daily events recognized the life and work of Charles Darwin. Scheduled events offered programming relevant to diverse audiences, highlighting some exciting new advances in science that have built upon Darwin's ideas and addressing such topics as the evolution of diseases and the importance of preserving biodiversity. Cosponsored by the Mississippi State University Department of Biological Sciences and Department of Geosciences.

- **Saturday February 7th:** Survival of the Fittest Dodgeball Tournament
- **Sunday February 8th:** Dr. Heather Jordan, "Bugs...In Bugs? Mysteries of *Mycobacterium ulcerans* and Buruli ulcer Disease."
- **Monday February 9th:** Microbiomes! Tea-Time with Matthew Brown, Janet Donaldson, Heather Jordan and Justin Thornton
- **Tuesday February 10th:** Dr. Brian Counterman, "Evolution's History Written on a Butterfly's Wing."
- **Thursday February 12th:** Dr. Michael Galaty, "Darwinian Evolution Gone Wild! Frontier Effects on Biological and Cultural Diversity." Cobb Reception, Darwin Birthday Celebration, Cobb Institute
- **Friday February 13th:** Science and Education Tea-Time, Harned Hall, with Nancy Reichert, Renee Clary, Ryan Walker and Aressa Coley



Earth Day: The Dunn-Seiler Museum, in partnership with Gaining Ground Sustainability Institute of Mississippi, is sponsoring a competition to promote awareness of the dangers of Styrofoam to the environment. Mississippi's K-12 students are invited to design a creative solution for Styrofoam that would otherwise be thrown away. **Entries are due April 16th, 2015.** The contest description can be found on the Dunn-Seiler Museum website at <http://geosciences.msstate.edu/museum.htm>

The 2014 Earth Day event focused on the waste generated by plastic water bottles. The Grand Prize winner of the 2014 event was the Fairview Attendance Science Club group entry. The club is sponsored by science teacher Sandra Whitt.

National Fossil Day 2014 was a successful event at Mississippi State University! The Fossil Extravaganza drew visitors from several states, and two new exhibits were unveiled during the event, including representative specimens from the Gainey collection, donated by Mrs. Nora Gainey in 2013.



Mississippi students participated in the Fossil Art and Story contest, which invited creative stories or artistic renditions of Mississippi's prehistoric life. At right, first prize winner Drew Walters stands beneath his drawing of Mississippi's state fossil—an Eocene whale.



Mississippi Gem and Mineral Society

56th Annual Gem, Mineral, Fossil, and Jewelry Show:

- **When:** February 28, 2015 - Saturday - 9:00 a.m. to 6:00 p.m. and March 1, 2015 - Sunday - 10:00 a.m. to 5:00 p.m.
- **Where:** Mississippi Trade Mart at the State Fairgrounds in Jackson, Mississippi
- **Information:** <http://missgems.org/page14.php>

Mississippi Museum of Natural Science

Fossil Road Show: See the museum's fossil collection and collector displays, and meet institutional exhibitors. Enjoy hands-on activities, a simulated fossil dig and an intro to scientific illustration. Bring a fossil for the staff to identify.

- **When:** Saturday, March 7, 10 a.m. to 3 p.m.
- **Where:** [Mississippi Museum of Natural Science](http://www.museumofnaturalscience.org/), Jackson
- **Cost:** Included with admission (\$4-\$6)

- **Contact Phone:** 601-576-600
- **From the press release:** Pack up your fossils and hit the road! Bring your fossil discoveries and get expert opinions about their ages and identities from our team of scientists at the 12th Annual Fossil Road Show. In addition to the Museum's fossil collection, there will be collector displays and institutional exhibitors. Enjoy hands-on activities, "fossil digs", and a scavenger hunt. So, go through your "rock boxes" and challenge our staff with your prehistoric oddities. Who knows what might turn up this year? There is no fee, other than regular Museum admission, to attend the event and reservations are not required.

Dinosaurs Land Of Fire And Ice (January 31, 2015 - May 3, 2015): This exhibit transports families back to the Cretaceous Period (145 - 65 million years ago), the time when dinosaurs last lived on earth. Children will go face-to-face with the prehistoric world. The dinosaur exhibit, created for children ages 3-10, will feature two distinct environments and a variety of activities. A Field Research Station allows children to step into the role of a paleontologist by uncovering fossils with brushes and creating drawings of the dinosaur environment using fossil rubbings and tracings! *Dinosaurs: Land of Fire and Ice* is the first child-centered exhibit in the country dedicated to expanding the understanding on dinosaur habitat and range. While the warm environment is based on content that is familiar to most, the cold environment incorporates recent scientific research about dinosaurs that lived in cold climates like Alaska. The steamy "Land of Fire" connects visitors with the prehistoric home of the Triceratops and T-Rex. Children can circle the land in insect costumes, buzz through a volcano with oozing lava, work through a swampy bog and identify an ecosystem of animals and plants. No coats are needed for a trip across the "Land of Ice" where visitors meet two dinosaurs, a Troodon and Edmontosaurus, who made their homes in the cold climate of Alaska. Activities include: climbing rocky steps, breezing down an icy slide, and hopping across stepping stones in an icy river. *Dinosaurs: Land of Fire and Ice* utilizes new research about climates in which dinosaurs were able to survive and thrive. The discovery of numerous species of dinosaurs in the arctic is causing scientists to reconsider old theories about dinosaurs only living in tropical climates. It is now known that many dinosaurs, including Edmontosaurus and Troodon, lived in cold weather climates for at least part of the year. The exhibit features three distinct sections and includes science activities to challenge all ages: Land of Fire (a warm dinosaur habitat), Land of Ice (a cold dinosaur habitat) and Field Research Station (with a Big Dig component) Science inquiry skills are essential in the Field Research Station as you uncover dinosaur bones in a dig station and examine fossils to identify dinosaurs! Detailed murals throughout the exhibit create an immersive, environmental aesthetic.

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

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

The 2014 PDI was held Nov. 6-7, 2014 at the Benton Convention Center in Winston-Salem. Geosciences played a prominent role at this year's event through sponsorship, exhibits and presentations. The Carolinas Section of AEG has been growing its participation in the PDI over the past several years, including support of both teacher awards (more below) and the distribution of hundreds of Earth Science Week Kits. This year, for the first time, AEG sponsored a room devoted to geoscience presentations, many of which were taught by award-winning teachers (see "Rocking Your Classroom"). Because of this sponsorship, the conference decided to include an AEG booth in the exhibit hall for distribution of the Earth Science Week kits.

This year also saw the return of the ever popular Rock Giveaway organized by the N.C. Aggregates Association with 14 different rock samples. They were able to give away 864 kit-bags during the event.

The keynote speaker on Friday morning was Andres Ruzo, who is a geoscientist, National Geographic Young Explorer, and Southern Methodist University PhD candidate. Ruzo is studying geothermal energy including the boiling river of the Amazon (in the Peruvian Volcanic gap). He was a great speaker who clearly cares about science communication. His presentation was fluid and his inspiring message was crafted around the PDI theme "Picture This." Ruzo spoke of his experience being guided away from science but eventually finding his geothermal calling in college (he grew up with a volcano in his backyard). He is now researching geothermal energy. To learn more about Andres Ruzo, see the following:

www.nationalgeographic.com/explorers/bios/andres-ruzo/

www.smu.edu/dedman/academics/programs/geothermallab

www.youtube.com/watch?v=DS7nBnKaUYM

www.youtube.com/playlist?list=PLwDYgc65Zhn4sv--3wLjLjzuECfaOiztN

Outstanding Earth Science Education Awards



L-R: Randy Bechtel and 2014 N.C. OEST winner Mark Townley

The 2014 North Carolina Outstanding Earth Science Teacher (OEST) is Mr. Mark Townley of Holly Springs High School in Wake County.

The 2014 North Carolina Outstanding Earth Science Educator (OESE) is Ms. Cynthia Woolery of Elizabeth Traditional Elementary School in Mecklenburg County.



L-R: 2014 N.C. OESE winner Cynthia Woolery and Randy Bechtel

The awards were presented during the NCSTA-PDI award ceremony by the N.C. Geological Survey's Randy Bechtel, who coordinates the state's OEST and OESE program. In addition to the plaque, each winner received \$750 from multiple co-sponsors including the Carolinas Section of AEG, which is the only sponsor to fund both awards. The winners also received a \$100 gift certificate to the N.C. Geological Survey Store.

"Rocking your Classroom"

The Carolinas Section of AEG sponsored a room devoted to geoscience presentations called "Rocking Your Classroom." This dedicated room allowed scheduling of sessions in a coherent line-up and avoided conflicts of multiple geoscience sessions being scheduled at once. Also, having a single purpose room provided a home base to draw participants. I am awaiting final attendance numbers from all of the presenters but, thus far, I have estimated an average of 23 teachers per session that equates to 207 participants that came to "Rocking Your Classroom" sessions (see pictures below). Each presentation was an hour long, and over the two-day conference, there were nine presentations, six of which were taught by OEST winning teachers. Below is a list of the presentations with an asterisk beside those that were taught by OEST winning teachers.

- *How can we improve Earth Science Education in North Carolina?
- What to do with your Rocks?!
- *How To Do A Rock Identification Lab Using Simple Dichotomous Keys
- *North Carolina Rocks!
- *Geoscience Education in a Digital World
- *More than Mud! From the Arctic to Backyard Ponds, the Climate Story of Sediment
- Energy Resources in NC: Pros, Cons, Issues, and Realities
- *Rockin Around the (Geologic) Clock Share-a-thon
- Incorporating Remote Sensing Technology into Earth and Environmental Instruction



Teachers in the AEG sponsored “Rocking Your Classroom” exploring activities for the classroom. There were nine one-hour sessions over the two-day event. Many of the sessions were taught by OEST winning teachers.

2015 Nominate a North Carolina Outstanding Earth Science Teacher and Educator!

North Carolina deadline is March 31, 2015!! The Nomination Form is at the bottom of the page - <http://portal.ncdenr.org/web/lr/512>

Two separate awards Outstanding Earth Science Teacher AND Outstanding Earth Science Educator What’s the difference? Who’s eligible? See Awards Program Description at the bottom of the page <http://portal.ncdenr.org/web/lr/512>

Why should you nominate someone (or yourself) for the one of these awards?

To recognize the hard work they are doing; they can hang an award plaque to gloat over; they win cash, money, dinero, dough, greenbacks (\$750) - See Awards Program Description at the bottom of the page <http://portal.ncdenr.org/web/lr/512>

And they get their picture on the NCGS website and join a list of other distinguished Earth Science Teachers and Educators <http://portal.ncdenr.org/web/lr/previous-oest-and-oese-award-winners>

The Nomination Form and any supporting material need to be received by Randy Bechtel by March 31, 2015 – see Nomination Form at the bottom of the page <http://portal.ncdenr.org/web/lr/512>

The N.C. Geological Survey education website

The N.C. Geological Survey education website is being updated and reorganized:

portal.ncdenr.org/web/lr/earth-science-outreach. It features information on the teacher awards and education activities and resources. New education materials and resources are now available for download for use by teachers and others in education. The latest items to be added includes material from this fall’s Earthquakes in North Carolina workshop series and elementary activities from the NCSTA-PDI. We’ll have more materials to share soon, so check back often.

Puerto Rico (State Representative position open)

South Carolina (submitted by Gwen Daley, Winthrop University, Co-State Representative)

Ed. note: Our faithfully reporting SC State Rep, Gwen Daley, reports there is nothing to report. She writes, "No real changes in the election means no one is trying to make political hay, so it's been very quiet around here. The new teaching standards won't be universally implemented until next year, so we haven't heard of any issues on that front, either. There aren't any meetings or courses coming up between now and our next newsletter (at least nothing advertised), and all of the field excursions I found were already over. <shrug> Like I said, boring!"

We are all looking forward to stirring things up when Columbia plays host to next year's SEGSA. South Carolinians and others are encouraged to think about what would be a worthy follow-on to this year's evolution theme sessions and field trip – bring your ideas to the SENAGT business meeting March 20 (see President's letter).

Tennessee (submitted by Michael A. Gibson, University of Tennessee at Martin, State Representative)

It's time to gather at the "Crow's Nest"....Chattanooga in Cherokee! The **64th Annual Meeting of the Southeastern Section of the Geological Society of America** will be held in Chattanooga, Tennessee, on 19-20 March 2015. The website hosting details of meeting symposia, theme sessions and pre- and post-meeting field trips is <http://www.geosociety.org/Sections/se/2015mtg/>. The meeting has been ably planned and the abstract volume is now available in paper form (last year for GSA paper abstract volumes, by the way) and online.

Widely known as "The Scenic City", Chattanooga owes this distinction to its geologic setting. The city lies along the Tennessee River, among the valleys and ridges of the southern Appalachian fold-and-thrust belt, and within view of the Cumberland Plateau and Blue Ridge. Its name derives from 'cató', the Muskogean word for 'rock', giving due emphasis to abundant exposure in the area and to the ideal setting it provides for the 2015 meeting of the Southeastern Section. While the geologic setting of Chattanooga is outstanding, the Chattanooga story is equally impressive. Labeled as 'the dirtiest city in America' by Walter Cronkite in 1969, our community rallied to turn Chattanooga into a greener and more sustainable community that even now boasts the fastest internet in America. If you haven't been to Chattanooga in a while, now's your time to experience its vibrant riverfront both north and south of the river, the historic Walnut Street Bridge, the 13-mile long Tennessee Riverwalk, and other exciting adventures that await your visit. We look forward to seeing you in the beautiful Chattanooga, Tennessee!

2014 TSTA Workshop Success! The 2014 Tennessee Science Teachers Association annual meeting was held at the in Murphreesboro, TN November, 2014. The Tennessee Earth Science Teachers (TEST) had organized its annual day-long workshop around the theme of "*Putting the Pieces of Tennessee Earth History Together*", which included representative rocks and sediment from across the state, along with fossils from across the state. The workshop emphasizing evolutionary themes spanning cosmic, geologic, and organic venues with the content geared towards Evolution of Tennessee. Lesson plans included Tennessee environmental issues, mineral resources, and rock resources, and organic evolution. Dr. Don Byerly (UT Knoxville emeritus geologist) was the keynote speaker and was on hand to sign copies of his new book "*The Last Billion Years*", which served as the text for the workshop. Plans for the 2015 TEST TSTA workshop have not been finalized.

Fall Fossils at the Fort

The second annual Fall Fossils at the Fort day cosponsored by Nashville Metro Parks, Vanderbilt University, Vulcan Materials Company took place at Ft. Negley in Nashville, TN November 1, 2014.

The history of Ft. Negley and Middle Tennessee extending back hundreds of millions back before the Civil War was highlighted with attention draw to Middle Tennessee's marine past, in which corals and other marine organisms flourished. Local Ordovician fossils of the Catheys Fm were explained by Dr. Molly Miller at Vanderbilt University and her students. These were supplemented by Devonian Birdsong Shale fossils from Parsons, TN arranged for by Vulcan Materials and Dr. Michael Gibson at the University of Tennessee at Martin. Plans are underway for the 3rd festival in 2015. Visit <http://www.nashville.gov/Parks-and-Recreation/Historic-Sites/Fort-Negley.aspx> for more information on the event.

Tennessee Science Teachers Association.

Plans are still being formulated for the 2015 Tennessee Science Teachers Association meeting. Stay tuned for additional information: <http://tsta.wildapricot.org/>.

National Science Teachers Association (2016).

NSTA & TSTA are preparing for a larger version of the annual science teachers meeting when it will play host to the National Science Teachers Association National Conference (NSTA) set for March 31–April 3, 2016. TSTA anticipates over 300 exhibitors, hundreds of sessions, and thousands of educators from all over the world will come to Tennessee. If you would like to be a part of the conference either as session organizer or field trip participant, please visit the NSTA website: <http://www.nsta.org/conferences/>.

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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