

# National Association of Geoscience Teachers

# Southeastern Section Newsletter

Winter-Spring 2013

#### Inside:

President's Letter Writing Roadside Geology of Georgia State (and Commonwealth of PR!) News in Geoscience Education

## **www...**

NAGT

www.nagt.org

SE-NAGT

http://facstaff.gpc.edu/~pgore/nagt/se-home.html

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

# Summer-Fall 2013 Newsletter Deadline:

August 15, 2013. Please send news items to Bill at

witherspoonb@fc.dekalb.k12.ga.us

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## **President's Letter**

by David Kopaska-Merkel, SENAGT president

I want to thank our past President, Randy Bechtel, for his proactive and vigorous leadership, as well as his confidence in me, which I hope is not entirely misplaced. I also want to welcome our two new officers: Denise Hills, VP/Pres. Elect, who works with me here in Alabama, and Gerald Pollock, Secretary, Georgia Perimeter College. Pamela Gore continues as Treasurer and Webmaster and Bill Witherspoon as Newsletter Editor: thanks to you both for all your hard work. If you, the reader, want to get more involved in this organization, there are plenty of things to do other than becoming an officer. For instance, you can become an alternate state representative, recruit OEST nominees, recruit members among your colleagues, or co-organize a session at the 2014 SE GSA meeting next spring. I welcome advice, suggestions, and criticism as well.

It feels strange to be writing this after our annual meeting, which we held in conjunction with the national GSA rather than at southeastern GSA, because the latter group was meeting in Puerto Rico. Nothing against Puerto Rico of course, but we were going to have inadequate participation of our members at that meeting because of the cost of getting there.

If you aren't already, it is time to start thinking about OEST nominations. Please try to recruit teachers who would like to be considered for this award. I know some states are lucky enough to get many nominations, but even there it doesn't hurt to get more. Other states, including my own, are lucky to get even one nominated teacher. My personal goal for this year was to get at least one, and so far I have received two nominations. I hope all of you will have at least that much success. Since we make the section award at the beginning of the summer, your state-level decision has to be made before then. We have a small award for the state winner; usually \$100 plus some earth-science textbooks.

## 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	Apr. 11-14, 2013	San Antonio	
Southern	Nov. 7-9, 2013	Charlotte	
Alabama	February 14 - 16, 2013	Huntsville	
Florida	October 24-26, 2013	Miami	
Georgia	Nov. 1-3, 2012 (NSTA)	Atlanta	
Louisiana	Oct. 31 – Nov. 2, 2013	Baton Rouge	
Mississippi	Oct. 23-25, 2012	Jackson	
North Carolina	Nov. 8-9, 2012	Winston-Salem	
South Carolina	separate regional meetings in 2013		
Tennessee	Nov. 2-4, 2012	Murfreesboro	

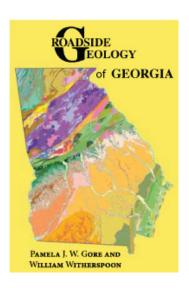
Geological Societies			
Organization (Area)	Latest date on web site	City	
GSA (National)	Oct. 27-30, 2012	Denver	
GSA (Southeastern)	March 20-21, 2013	San Juan, PR	
GSA (South Central; incl. LA)	April 4-5, 2013	Austin, TX	
Georgia Geological Society	Oct. 13-14, 2012	Thomson	
Carolina Geological Society	Nov. 8-10, 2013	TBA near Albemarle, NC	

# Reflections on Writing the *Roadside Geology of Georgia* and Lessons Learned

by Pamela J. W. Gore, Georgia Perimeter College and SENAGT Treasurer

For the past several years, I have been writing the *Roadside Geology of Georgia*, which is scheduled for publication this spring (April 15, 2013 according to <u>Amazon.com</u>). As you may know, the objective of the *Roadside Geology* series is to publish scholarly, well-written books for the layman, in language that non-geologists can understand and enjoy. We were instructed not to write for geologists, but for their spouses and parents: curious, well-educated people who know a lot about accounting, law, or insurance, but not much about geology.

This has been a long project. Looking back at old emails, I was able to put together a bit of the chronology, documenting the process. I was invited to begin work on the book by a colleague back in summer of 2004, and the writing began. (Lesson 1: It takes a lot longer to write than you expect, so schedule some uninterrupted writing time.) Helping in this endeavor was a "Writers Institute Fellowship" from my institution, Georgia Perimeter College, which gave me a semester off from teaching in Spring 2005 to work on the book. I was very eager and ready to research every outcrop along every interstate.



One of the first road guides I wrote was I-75 between Atlanta and the Tennessee state line, crossing over Piedmont, a bit of Blue Ridge, the Valley and Ridge, with a brief mention of Appalachian Plateau, and it came in at over 18,000 words. The editor responded back that length was going to be a problem. I learned that for a book less than 350 pages long, we had about 100,000 words. I had written one road log (out of about 30 or so) and had already used nearly 20% of my page allotment. So the book is nowhere near as detailed as it might have been. I also learned that road guides run from north to south, and east to west, and must begin and end at province boundaries. (Lesson 2: Find out the word and page lengths and plan accordingly.)

Over the course of the writing, many things changed. One major change was a change in my co-author. For various reasons, my original co-author was unable to continue working on the book, and his colleague, Bill Witherspoon took his place late in 2007. We divided up the workload and, as part of his share, Bill quickly became proficient at using Adobe Illustrator and went on to create the many maps that appear in the *Roadside Geology of Georgia*. (Lesson 3: Be sure you know how to draw maps on the computer, or have a co-author who can do this. Map making is a lot of work.)

Photos are an important part of a book like the Roadside Geology series. When I started writing, the Roadside books were published in black and white. Some of the initial guidelines for photos and artwork called for black and white prints, and original artwork (on paper). The *Roadside Geology of Florida* (2008) was one of the first to include color photos, although some were still in black and white. By the time the *Roadside Geology of Maryland, Delaware and Washington, D.C.* was published in 2010, all photos were in color. Today, everything is color and digital. I have found that my more recent images taken with a digital camera are much easier to put into publication than my older slides and print photos, which have to be scanned at the appropriate resolution, and which are not always satisfactory. (Lesson 4: Planning for the type of images you will need is important. Pay close attention to the required resolution and size.)

The editing and reviewing process also evolved as I was writing the book. In the early stages, I emailed drafts to the editors or reviewers, and sometimes received hardcopy back with edits and comments in pencil. Today, a number of publishers are using a "cloud-based" system, where you copy a text or image file into a "Dropbox folder" on your computer, which uploads and synchronizes with a folder somewhere on a "cloud" online that you can share with other users, or log into and access from other computers. This has been very useful as Bill and I collaborated on the document, and speeds turnaround time with reviewers and editors. (Lesson 5: Technology changes and cloud-based computing makes collaboration easier, but you still have to coordinate so that only one person is editing the cloud-based document at a time.)

Colleagues have been very helpful by answering many questions we had as we worked on the manuscript and sorted out stratigraphic terminology. We spent much of 2011 having colleagues review our work, and are very grateful for their helpful comments. Some of our colleagues also supplied us with several much-needed images related to their area of expertise, which greatly enhanced the manuscript. I really appreciate all of their hard work and contributions to the book. (Lesson 6: Colleagues are important when doing research or writing and editing a manuscript. Join geological societies and attend the meetings – local, regional and national. The people you meet there are often the best part.)

Early in 2012, we provided a draft of the manuscript to the editor. The manuscript was about 125,000 words. The editor had to cut about 20,000 words and we had to trim about 10,000 more. We had about 470 images, but *Roadside* books typically have only about 250 images, so cuts were made there as well. So if you are reading the book this spring and don't see a road, outcrop, or park included that you hoped would be in there, or if you don't see a thorough coverage on the tectonic history or fossils of a particular area, chances are that section was one of those that wound up on the cutting room floor. (Lesson 7: Plan carefully and prioritize when writing and working on illustrations. You can't include everything.) In hindsight, it seems like it would have been much easier to have written a shorter manuscript, but even with word limits for each geologic province, we found that we had much more material than could be included. Bill and I learned a lot while writing the Roadside Geology of Georgia. It is a fascinating and varied state, from coast to mountains, and from Proterozoic to Quaternary. We hope you will enjoy reading the book as much as we enjoyed writing it.

[This article originally appeared in the NAGT's two-year college division newsletter, Geo2YC Foundations (<a href="http://nagt.org/files/nagt/divisions/2yc/geo2yc">http://nagt.org/files/nagt/divisions/2yc/geo2yc</a> newsletter v2n1.pdf). A talk and booksigning will be part of the Georgia Rock\* Fest on May 30 at Fernbank Science Center (see Georgia news below). You can stay posted about other RG GA book talks around the state at the book's web site, <a href="http://georgiarocks.us">http://georgiarocks.us</a>, and by using the "Like" button on the Facebook page, <a href="https://www.facebook.com/RoadsideGeologyGA">https://www.facebook.com/RoadsideGeologyGA</a>. The georgiarocks.us site also has useful Google Earth and Google Maps overlays of Georgia geology, and some "out-takes" originally written for the book. — ed.]

# 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 August 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)

Public education in Alabama has been under quite a bit of financial pressure, because of the bad economy. However, there is a new movement in state government circles to make some changes in K-12 education. In contrast to previous such attempts, some of the proposed changes might be improvements. For instance, it seems we are getting rid of the state high school exit exam. This was created with the best of intentions, but its primary effect was to induce teachers to teach to the test rather than to the subject.

The state Legislature just began its session, so I don't know whether there will be any monkey business with evolution education.

## **Educational publications.**

Kopaska-Merkel, D. C., and Buta, R. J., 2012, Field-Trip Guidebook to the Steven C. Minkin Paleozoic Footprint site, Walker County, Alabama: <u>Alabama Paleontological Society</u>, 30 p. I helped write a guidebook to one of Alabama's most famous fossil localities. It is aimed at non-specialists, which includes science teachers. The guidebook is available for sale (\$3) by the Alabama Paleontological Society (http://alabamapaleo.org).

Roger Reid (Discovering Alabama, University of Alabama) wrote a young-adult novel — *Time* — inspired partly by the Carboniferous trackway site (Union Chapel Mine or Minkin Site, <a href="http://eoa.duc.auburn.edu/face/Article.jsp?id=h-1371">http://eoa.duc.auburn.edu/face/Article.jsp?id=h-1371</a>) in northwest Alabama. <a href="http://rogerreidbooks.com/?page\_id=42">http://rogerreidbooks.com/?page\_id=42</a> It was published in 2010. This book is a quick read, scientifically accurate, and seems to be pretty well-received in the target age group.

#### Teacher workshops.

The annual fossil field workshop for teachers, hosted by the University of West Alabama, is described more fully in the report from the University of West Alabama (below). Summer workshops for teachers hosted by Legacy (see below) and Camp McDowell (a private camp) focus on environmental science and biology, but include earth-science components. Some of the state's geologists help out every year with both of these activities.

## Science trivia.

I don't think I have mentioned this before but it has been going on for many years. Alabama has an organization called Legacy (http://legacyenved.org/), which is an environmental education group that is funded by a special license plate. Legacy hosts an annual trivia contest called the Envirobowl. The questions are all science questions and a substantial fraction of them relate specifically to earth science. Professional geologists around the state have contributed questions and fact checked other questions; the result is pretty accurate and most of the geology questions target things that high school students should know about the earth. A fair number of schools participate and some of the teams obviously practice hard.

#### Universities.

The **University of West Alabama** has news about development of the new Black Belt Museum. Remodeling of an old bank building in downtown Livingston began in fall 2012 (<a href="http://centerforblackbelt.org/wp-content/uploads/2012/12/BBConnectionDecWEB2012.pdf">http://centerforblackbelt.org/wp-content/uploads/2012/12/BBConnectionDecWEB2012.pdf</a>), and James Lamb continues to build new exhibits for it. Vertebrate paleontology and invertebrate ichnology will be represented as well as the region's culture.

In October we held the annual Fossils of the Black Belt workshop for high-school science teachers. Leaders included Andrew Rindsberg and James Lamb of the University of West Alabama and David Kopaska-Merkel of the Geological Survey of Alabama. The Alabama Geological Society provided funding, Discovering Alabama provided DVDs, the Birmingham Paleontological Society provided volunteers, and a fine time was had by all. We even saw a bald eagle at the fossil-collecting site. Two photographs show the scope of our field site and one example of what we found.

Andy Rindsberg is writing a historical piece on the late Richard Thurn, who taught geology at the University of West Alabama starting in 1980. If you have photos or letters that would shed light on his teaching career, or would just like to chat about Richard, please contact Andy at <a href="mailto:arindsberg@uwa.edu">arindsberg@uwa.edu</a>.



The **University of South Alabama** is looking for a <u>new geophysicist to be hired at the Assistant Professor level. It's a tenure track position</u>. In addition, the USA Geology Students have resurrected our chapter of Sigma Gamma Epsilon (Earth Sciences Honors Society) and established a new AAPG Student Chapter. We are also getting ready to display a portion of a fluorescent mineral collection that we received a couple of years ago in our new Delchamps Archaeology Museum.

As has seemed to be the case for the last few years, enrollment in geology at the University of Alabama is growing. The University of Alabama Department of Geological Sciences has well over 100 undergraduates and about 60 graduate students. The job market seems to be good - especially for our graduate students who are being hired enthusiastically by the oil industry. We are in the midst of hiring two new faculty members - a petrologist and a geophysicist. We have a very competitive applicant pool. In my own program (Andy Goodliffe) one of the exciting things is preparing our AAPG Imperial Barrel team for the regionals against the other major universities in the Gulf Coast Region. I have also started a term as a Councilor at Large for the NAGT.

Several people provided content for this report: Andy Goodliffe, Doug Haywick, and Andrew K. Rindsberg. Photographs by Vicky Lais (wide view) and Claire Smith (close-up), Birmingham Paleontological Society.

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

# Georgia (State Representative: Gerald Pollack; announcements submitted by Bill Witherspoon)

## California Geology Adventure:

# "Geology on the Edge"

Dr. Bill Witherspoon, Geologist at Fernbank Science Center and co-author of the forthcoming *Roadside Geology of Georgia*, will be leading a California geology adventure trip for teachers and the public June 8-16. Registration for the trip closes in early April.

Highlights include volcanoes east of the Sierra Nevada near Mammoth Lakes, Yosemite National Park, the Gold Rush country, and the earthquake-prone faults and ocean-floor rocks of the San Francisco area. For a photo gallery and more information visit <a href="http://georgiarocks.us/california">http://georgiarocks.us/california</a>.



Wall astride the Hayward fault in the East Bay Area



Tufa towers at Mono Lake east of the Sierra



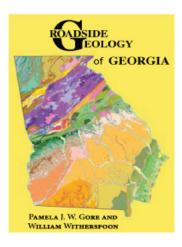
Yosemite Valley

# Book Talk at Georgia Rock\* Fest

Mark your calendar for a book talk and signing of *Roadside Geology of Georgia* by Pamela Gore and Bill Witherspoon at 6:30 PM May 30. The talk will be part of Fernbank Science Center's Georgia Rock\* Fest.

The Fest at the Center will include exhibits of Georgia minerals and fossils, booths by local geologist and collector groups, and a planetarium show about Earth featuring Fernbank Science Center's new full-dome projection system.

\*(rock, mineral, and fossil)



**Louisiana** (State Representative: Pam Blanchard; no information submitted)

Mississippi (State Representative: Gail S. Russell; no information submitted)

North Carolina (State Representative: Randy Bechtel; no information submitted)

**Puerto Rico** (State Representative position open. Information from Dr. Lizzette Rodriguez, Director of the Department of Geology, University of Puerto Rico, and General Co-Chair of the San Juan SEGSA meeting)

#### Dear Bill:

Thank you for your e-mail regarding the GSA SE Section Meeting. The NAGT is a cosponsor of the meeting, which we really appreciate....There will be 5 field trips and no workshops, since the 2 planned workshops did not get the minimum number of participants, which is unfortunate. The web site (<a href="http://www.geosociety.org/sections/se/2013mtg/index.htm">http://www.geosociety.org/sections/se/2013mtg/index.htm</a>) has all the information regarding the program. We will have one oral session on Geoscience Education, "Geoscience Teaching, Geoscience Education Research, and Geoscience Dissemination through Formal and Informal Science Education Approaches" and two poster sessions.



Aerial view of Old San Juan, with the El Morro Fort in the foreground.

Regarding the state of geoscience in PR .... in general, there is one Geology Dept. in PR, which is the Department of Geology at UPR M[ayaguez], which is the reason we are hosting the meeting. There are geology courses taught in other universities but no formal program. We have Bachelor's and Master's degrees in Geology, and there are MS and PhD programs in Geological Oceanography here at UPRM as well, but part of the Marine Sciences Dept., which is only on the graduate level.

We graduate the highest number of Hispanic students in the US. Currently we have about 160 students in the undergraduate program, of which about 52% are women. Our graduate program has about 20 students right now. Our Dept started in the 1960s, while the Master's program is quite young (created in 1996). Our faculty has 12 members, 2 of which are women, 7 Puerto Ricans, 4 from the US, and 1 from Colombia. Most of the faculty is participating in the meeting, and over 40 students are participating as volunteers and/or presenting their research projects, since as part of the undergraduate degrees all our students have to register on 2 semesters of undergraduate research. Also, about 20 students (undergrad and grad levels) participate every summer in internship programs.



Aerial view of the Caribe Hilton Hotel, venue for the meeting.



Photo of one of the cobblestone streets in Old San Juan, with the Cathedral of San Juan seen at the top of the street.

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

University of Tennessee at Martin will offer a new field course entitled Geology of the Greater Reelfoot Lake Ecosystem summer session (June 3 – 14, 2013) at the Reelfoot Lake Environmental Field Station (http://www.utm.edu/departments/reelfoot/), in extreme northwestern Tennessee. Reelfoot Lake is an unusual as lakes go because it formed due to earthquakes that re-routed the Mississippi River and geologic processes still dictate its size, shape, location, and other physical characteristics. This unique lacustrine ecosystem is home to an incredible array of plants and animals. The basins and sediments in the lake, the surrounding floodplain of the Mississippi River, and nearby Chickasaw Bluff glacial and pre-glacial deposits define the parameters in which these organisms must adapt. This course is an examination of over 30 million years of geologic process and materials that formed and have subsequently shaped Reelfoot Lake, its surrounding drainage area, and living and fossil ecosystems. Topics include: Modern geologic processes and sediments of fluvial and lacustrine systems emphasizing Reelfoot Lake and Mississippi River, geologic history of the Upper Mississippi Embayment region, fossils and paleoecology of the region, and environmental issues such as earthquakes, flooding, mass wasting, and water contaminants. Field and laboratory emphasize techniques used in geologic investigations of these systems. For more information or to register for the two-week intensive field course contact Dr. Michael A. Gibson (UT Martin mgibson@utm.edu, (731) 881-7435).

## Master of Education in Geoscience Education at UT Martin Seeks Applicants.

The UT Martin Master of Science in Education with a major in Geoscience Education is a cooperative degree program between the School of Education and the Department of Agriculture, Geosciences, and Natural Resources available to individuals who obtained a bachelor's degree in education from an accredited college or university and who are professionally licensed to teach elementary or secondary education. The program is intended for teachers seeking advanced training in geoscience disciplines, such as geology, astronomy, oceanography, meteorology, or general earth science. The degree program consists of advanced content courses supported by advanced education support courses that lead to both content competency and teaching competency in the geosciences. The program is specifically aimed as professional development for teachers moving into geoscience education from another science content area, adding earth science or geology courses, or seeking to teach AP or dual credit courses. Complete admission requirements are available on the website. The goal of the Geoscience Education program is "Earth Literacy" through professional development of present and future educators. The advanced program's conceptual framework is depicted as four keys that the graduate faculty feel will unlock each candidate's potential. They are:

- > KEY 1 Knowledge of Earth & Planetary Processes
- ➤ KEY 2 Knowledge of Investigative Procedures in the Earth & Planetary Sciences
- KEY 3 Methods of Scientific Inquiry
- > KEY 4 Mastery of Methods of Instruction Related to the Earth & Planetary Sciences

The curriculum is aligned with both National Science Standards and State Science Standards. For more information, visit the program website at <a href="http://www.utm.edu/departments/edgrad/geosciences.php">http://www.utm.edu/departments/edgrad/geosciences.php</a> or contact Dr. Michael A. Gibson (<a href="mailto:mgibson@utm.edu">mgibson@utm.edu</a>, 731.881.7435).

**Middle Tennessee State University News**. Dr. Mark Abolins of MTSU announces that NSF is funding a REU proposal to serve pre-service teachers. **Earth, Life, and Atmosphere - High School (ELiA-High School)** aims to increase content knowledge and interest in Earth science topics related to ongoing environmental research programs at MTSU. During each of the summers of 2014-2016, a cohort of 14 high school students will become a part of the Earth, Life, and Atmosphere (ELiA) interdisciplinary community of high school students, in-service and pre-service teachers, and MTSU faculty.





Research Experience for Undergraduate Pre-service Teachers Geoenvironmental Challenges in the Southeastern U.S. \*\*\*Earth science\*\*\* \*\*\*Chemistry\*\*\* \*\*\*Biology\*\*\*

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MTSU Home

APPLY!

- A nine-week science research experience in the greater Nashville, Tennessee area.
- May 27 July 26, 2013.
  - For Earth science, chemistry, and biology pre-service teachers.
- Includes one-week field trip to Mammoth Caves and Great Smoky Mountains National Park.
  - Includes travel to 2014 Geological Society of America Annual Meeting
    - \$4,000 stipend + all expenses.

# March 21 Application Deadline

**UNDERGRADUATE** RESEARCH VIDEO



CLICK TO PLAY!

Earth Life Atmosphere ELLA

Become a part of the community.

CLICK HERE TO CONTACT A MTSU UNDERGRADUATE RESEARCHER Participants will be high-ability high school students who are interested in STEM but who have not generally completed a semester-long pre-college Earth science course. Half of the participants will be recruited from the greater Nashville, TN metropolitan area and the other half will be recruited from elsewhere with an emphasis on the Southeastern U.S. In addition to participating in research, the high school students will be concurrently involved in an innovative high school Earth science course addressing all of the high school Earth science Next Generation Science Standards. As part of this course, students will participate in field trips to Mammoth Caves and the Great Smoky Mountains, and they will incorporate open-ended inquiry into Earth science topics other than those directly related to the discipline-specific research investigations.

Application deadline for the programs is March 21, 2013. Details and application for the program can be found at http://capone.mtsu.edu/mabolins/REU.pdf. Contact Dr. Mark Abolins for more information: Mark.Abolins@mtsu.edu,

University of Tennessee Knoxville News. In an item omitted from the past newsletter, in 2012 on the University of Tennessee Knoxville campus, the McClung Museum opened an exhibit that compared the geologic formation and history of the Appalachian Mountains and the Himalayan Mountains. Dr. Robert Hatcher and Micah Jessup served as curators of the exhibit, which ran through May of 2012 and was a focal point of a one-day Earth science teacher workshop. To provide field experience, a field trip to the Tuckaleechee Cove area was organized and served forty teachers from east and central Tennessee. Portions of the exhibit remain operational for the public.



[ I visited and loved the exhibit; way to go UTK! – ed.]

**Tennessee Earth Science Teachers (TEST).** At this time workshop plans for the 2013 Tennessee Science Teachers Association annual meeting are incomplete. TEST is organizing an administrative retreat for summer and is seeking input from teachers regarding potential programs they would like to see TEST offer. Please contact TEST President Krystal Smith (<a href="mailto:smithk40@k12tn.net">smithk40@k12tn.net</a>) for more details.

Other News. Work continues on the Next Generation Science Standards (NGSS) with state-wide committee that include teachers, university faculty, and members of the community. Currently the NGSS are in various stages of public review before another round of editing. Professional development training is being planned across the state in anticipation of adoption of the new standards.

You can join NAGT using the online form at <a href="https://www.webassociationmgmt.org/nagt/">https://www.webassociationmgmt.org/nagt/</a>, or by downloading a membership application at <a href="https://www.webassociationmgmt.org/nagt/memform.v2">https://www.webassociationmgmt.org/nagt/memform.v2</a> small.pdf .

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

## **Your SE NAGT State Representatives**

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