

National Association of Geoscience Teachers Southeastern Section Newsletter

Summer-Fall 2009

Inside: President's Letter Regional News in Geoscience Ed

WWW ... NAGT www.nagt.org

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

Geological Society of America <u>www.geosociety.org</u>

US Geological Survey www.usgs.gov

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

Winter-Spring 2010 Newsletter Deadline: February 15, 2010. Please send news items to Bill at witherspoonb@fc.dekalb.k12.ga.us

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President's letter

A round of applause for Nan Huebner, who so ably headed the Southeastern Section!

The Southeastern Section met last March at the Annual Meeting of the Geological Society of America in St. Petersburg, Florida. The conference was somewhat sparsely attended due to economic constraints, but a fine time was had by those who did attend. There was a good turnout at the business luncheon (about fifteen members attended), and the NAGT booth found ready hands to present visitors with brochures and samples of publications. Thanks to Pamela Gore, Bill Witherspoon, and Nan Huebner for making the arrangements!

The next SE NAGT meeting will be a little unusual, because it will take place as a combined meeting along with the Northeastern Section. Mark your calendars! The joint meeting will be from March 13 to 16, 2010 at the Sheraton Baltimore City Center Hotel, which is close to the historic Inner Harbor and its many tourist attractions. For a cheap thrill, I recommend climbing the original Washington Monument, a tall marble column with an excellent view of the old city. Noel Potter (<u>pottern@dickinson.edu</u>) and Chuck Bailey (<u>cmbail@wm.edu</u>) are in charge of the NE/SE GSA meeting. Get those abstracts in by December 8.

Kudos to Jon Bryan, Guy Means, and Tom Scott for *Roadside Geology of Florida,* the latest in the Mountain Press Roadside Geology series (ISBN 978-0-87842-542-6), and only the third Southeastern state, after Virginia and Louisiana, to be represented. I only wish I'd had this book while driving the interstate past surprisingly varied scenery down the center of Florida toward St. Petersburg. The karst terrain only looks flat from a distance; there are some steep slopes in northern Florida, in marked contrast with the southern Georgia plain.

Pamela Gore and Bill Witherspoon are currently working on another book in the series, *Roadside Geology of Georgia*. So far as I know, this will be the first book on the geology of Georgia ever written for a popular audience. Jim Lacefield is revising his *Lost Worlds in Alabama Rocks,* whose first edition was published in 2000. Interesting books for a lay audience are considerably harder to write than technical literature, and these are very welcome. We look forward to these new contributions, and hope to see other states represented soon.

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Update: ESLI and Energy Geoscience Literacy at SEGSA

by Bill Witherspoon

The SENAGT-sponsored session at this year's Southeastern GSA on "Energy Geoscience Literacy: What should Teachers, Students, and the Public Know?" had six presentations. The presentation slides are all available on the SENAGT web site at <u>http://facstaff.gpc.edu/~pgore/nagt/senagt_presentations.html</u>.

The Earth Science Literacy Initiative (ESLI; <u>http://earthscienceliteracy.org/</u>) that served as a springboard for the session has now produced its report, *Earth Science Literacy Principles: The Big Ideas and Supporting Concepts of Earth Science*. In a June 4 NSF press release, Robert Detrick, director of NSF's Division of Earth Sciences, stated:

"The Earth sciences have never been more important than they are today. It's important that every citizen have knowledge of the fundamental concepts of Earth science such that he or she may make informed and responsible decisions about public issues--from climate change to energy, from natural resources to earthquake hazards.

"The Earth Science Literacy Initiative is a very important effort to convey this information about Earth science to the general public."

The report can be viewed at the ESLI web site http://earthscienceliteracy.org/.

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. 18–21, 2010	Philadelphia		
Southern	Nov. 12–14, 2009	Fort Lauderdale		
Alabama	Oct. 20, 2009	Birmingham		
Florida	Nov. 13, 2009	Fort Lauderdale		
Georgia	(Feb. 11-13, 2010)	Savannah		
Louisiana	Nov. 2-4, 2009	Shreveport		
Mississippi	Oct. 25-27, 2009	Jackson		
North Carolina	Nov. 19 - 20, 2009	Greensboro		
Puerto Rico	(web site not working)			
South Carolina	Nov. 4-6, 2009	Myrtle Beach		
Tennessee	Nov. 6-7, 2009	Franklin		

Geological Societies					
Organization (Area)	Latest date on web site	City			
GSA (National)	Oct. 18-21, 2009	Portland, OR			
GSA (Southeastern)	Mar. 13-16, 2010	Baltimore			
GSA (South Central; incl. LA)	Apr. 11-13, 2010	Branson, MO			
Georgia Geological Society	Oct. 9-11, 2009	Sandersville (?)			
Carolina Geological Society	Nov. 6-8, 2009	Columbia			

Regional News in Geoscience Education

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

Downturn

The economic downturn has affected K-12 schools across the board in Alabama. Some districts have fewer local resources than others, but I think all have suffered layoffs. Earth science is a required (minor) component of science instruction at the elementary and middle school level and won't be affected (except that science classes will be larger in districts where science teachers were laid off). By contrast, earth science is elective in high school in Alabama and most schools don't even offer it. Surprisingly, I heard from a high-school science teacher this summer who wanted resources for a new earth-science class, while at the same time my school district cut 71 jobs. Strange eons indeed.

To my knowledge state agencies and higher education institutions have not suffered layoffs of science faculty or staff, and outreach to the K-12 sector should continue at the same or increased levels. I do not know whether college student enrollment in geology has decreased because oil-company jobs are plentiful or increased because other jobs are in short supply. My informants haven't noticed a change, so maybe both factors are at work.

The most dramatic effect of economic stress I have observed so far has been on professional organizations for teachers. Some teachers were laid off and most teachers had their professional leave eliminated as a cost-cutting measure. Consequently, organizers of the annual meeting of the Alabama Science Teachers Association (to be held this coming October) expect many fewer attendees. The meeting has been reduced from two days to one. The cost of tables in the exhibit hall was held steady or even increased, and with lower expected attendance and only one day to exhibit I think a lot of former exhibitors will not participate this year.

The annual meeting of Legacy, Alabama's state-supported environmental education organization, was canceled this year because of the economic downturn. The Envirobowl, an annual high school environmental trivia contest sponsored by Legacy, did take place as usual, but a smaller number of schools participated.

The annual fossil field workshop for teachers that is hosted by the University of West Alabama and cosponsored by the Geological Survey of Alabama and Discovering Alabama (television series about the natural wonders of the state, including geology) will be held in October as usual. Preregistration is running behind that of recent years.

Legislature

The economy is not the basis of every single scrap of news this time around. The Alabama state legislature went on its annual pilgrimage to creationismland but returned with the state's scientific credentials intact once again. In fact, the perennial resistance of the majority of state legislators to unconstitutional conflation of science and religion in the public-school science classroom is a sign of hope.

Academia

Alabama has four postsecondary geoscience departments and geology faculty at a couple of other institutions. I don't have good contacts at every department, and to those faculty who would have answered requests for information if they had received them, my apologies.

University of Alabama

This report thanks to Andy Goodliffe.

Geology Majors	FY2008	FY2009
Grads	37	50 (33% increase)
Undergrads	69	108 (57% increase)



ALLELE 2009-10

ALABAMA LECTURES ON LIFE'S EVOLUTION

THE UNIVERSITY OF ALABAMA

COLLEGE OF ARTS AND SCIENCES

All talks will be at 7:30 p.m. in the Biology Auditorium at The University of Alabama. For directions and more information, see our web site bama.ua.edu/~evolution/alleleindex.html.



9 March 2009

Dr. Donald Prothero Occidental College "Evolution: What the Fossils

Say and Why It Matters"



12 November 2009

Dr. Robert Richardson University of Cincinnati

Open

to the Public

"The Natural History of Morality"



3 September 2009

Dr. Jerry Coyne University of Chicago "Why Evolution is True"



3 December 2009

Dr. Daniel Povinelli University of Louisiana -Lafavette

"Humanizing the Human Mind"



29 October 2009 Dr. Jonathan Marks

University of North Carolina - Charlotte "Darwin's Ventriloguists"



14 January 2010

Dr. Carlos Bustamante Stanford University

"Evolutionary Theory in the Age of Genomics"

Sponsored by The Barbara and Frank Peters Foundation, Lou Perry, and Eric Hopkins, the College of Arts and Sciences and the Departments of Anthropology, Biological Sciences, Geological Sciences, Philosophy, and Psychology.

(3 Dec

The economy is thus very positively affecting our enrollment. Students seem to still be getting jobs (though a couple of our recent alumni did lose jobs in layoffs). We have a new department chair - Cemen Ibrahim - he has joined us from Oklahoma State - he is a structural geologist. We also have a new paleontologist (Alberto Perez-Huerta) who has joined us from the University of Glasgow, Scotland. So far we have not had any cutbacks - in fact, we may be able to advertise at least one, and maybe two, new positions next year.

Andy has been doing educational outreach workshops, but not within the state, at least not so far.

Auburn University

This report from Auburn thanks to Lorraine Wolf.

WET Alabama: This is a project started by Ming-Kuo Lee and Lorraine Wolfe aimed at increasing awareness of water resources. The project has created a series of hands on field workshops in hydrology and hydrogeology for middle school teachers and students.

The geographers at Auburn (who share a department with the geologists) are kicking off a new Masters program this year.

Miscellaneous notes

The Evolution Working Group at the University of Alabama resumes its series of public lectures about evolution (ALLELE). There will be four lectures in the fall, and one in January. For more information visit this webpage: <u>http://www.bama.ua.edu/~evolution/alleleindex.html</u>.

In response to the increasing number of schools in the Tuscaloosa area, the Geological Survey of Alabama is now Adopt-a-School partner for two middle schools. If more scientific agencies and companies did the same thing it might in some small way enhance science education in the state.

Lost Worlds in Alabama Rocks, Jim Lacefield's masterful explanation of the state's geologic history for the layperson, is still undergoing revision for the second edition. The first edition is still available from the author for those who can't wait.

November 2009 brings the 10th anniversary of the discovery of the Steven C. Minkin Paleozoic Trackway Site. The site remains a perennial source of remarkable trace fossils, of which the most unusual make their way to the collections of the McWane Center in Birmingham.

Florida (no information submitted)

Georgia (no information submitted)

Louisiana (Submitted by Pam Blanchard)

NASA Programs

NASA Marshall Space Flight Center and Stennis Space Center are teaming up to provide a six-hour hands-on workshop for pre-service teachers attending Southern University, Southeastern Louisiana University and Louisiana State University. Pre-service teachers will gather on September 26, 2009, at LSU for the event, which will feature breakout sessions on NASA Digital Learning Network/Video-Conferencing, NASA Website Resources/Activities, and Engineering Design Challenge Activities.

For further information, contact Dr. Ian Binns (ianbinns@lsu.edu).

The NASA Michoud Education Fellows program is in its second year. Teachers from St. Tammany Parish spent two weeks at the Michoud Assembly Facility this past summer and interacted with more than ten engineers and technicians that are working at the facility. The goal for the Michoud Education Fellows Program is to provide educators an opportunity to explore the way science content and inquiry skills, mathematics and communication skills are used by scientists, engineers and skilled workers at the NASA Michoud Assembly Facility. One element that will be shared online in the near future are short video-taped interviews prepared by the Fellows of one of the engineers that they met during the summer.

LaURGE: Louisiana Undergraduate Recruitment and Geoscience Education

(Provided by Jeffrey Agnew, Department of Geology, Centenary College and Jeffrey A. Nunn, Department of Geology and Geophysics, Louisiana State University)

Shell Foundation and the National Science Foundation sponsor a program at Louisiana State University and Centenary College called Louisiana Undergraduate Recruitment and Geoscience Education (LaURGE).

Goals of LaURGE are:

1) Interweave geoscience education into the existing curriculum for high school science classes;

2) Provide teachers of those classes with lesson plans that promote interest in geoscience, critical thinking by students, relate what is learned in class to the real world, and are consistent with current knowledge/research in geoscience; and

3) Provide teachers with equipment/supplies that make these lesson plans the highlights of the course.

As part of this program, biology workshops were held at Louisiana State University in Baton Rouge and Centenary College in Shreveport in 2009. A total of 27 teachers from public and private schools in Ascension, Bienville, Bossier, Caddo, East Baton Rouge, and Livingston Parishes attended.

The teachers did a series of activities on fossil shark teeth to illustrate evolution and introduce basic earth science concepts such as geologic time, superposition, and faunal succession and provided the teachers with lesson plans and materials. As an example, one exercise explores the evolution of the megatoothed shark lineage leading to *Carcharocles megalodon*, the largest predatory shark in history, with teeth up to 17 cm long. Megatoothed shark teeth have an excellent fossil record and show continuous transitions in morphology from the Eocene to Pliocene.

Our activity follows the learning cycle model. We take advantage of the curiosity about sharks shared by most people, and allow students to explore the variations among different shark teeth and to explain the causes of those variations.

The objectives of this exercise are to have the students: 1) sort fossil shark teeth into biologically reasonable species; 2) form hypotheses about evolutionary relationships among fossil shark teeth; and 3) describe and interpret evolutionary trends in the fossil megatoothed lineage.

The exercise is concluded with a discussion of the environmental and biotic events occurring between the Eocene and Miocene epochs that may have caused the evolutionary changes in the megatoothed shark's teeth. Other topics covered in these workshops include radiometric age dating, biogeochemical cycles, and a one-day field trip in which teachers collect fossil shark teeth for use in their classrooms. NSF funding will allow these workshops to be repeated in 2010. In addition, a new workshop for physics teachers will be introduced in 2010.

Mississippi (no information submitted)

North Carolina (submitted by Randy Bechtel)

State Budget update

Our State budget, as in many states, has not been passed yet as the legislature is struggling to balance the budget. The new fiscal year began July 1st. Many teaching positions are on the chopping block as is the Office of Environmental Education. The budget is a combination of tax increases and budget cuts, but who will be affected is still being debated.

North Carolina Science Teachers Association Professional Development Institute (NCSTA-PDI) in 2009

The NCSTA-PDI will return to the Koury Convention Center, this November 19-20, 2009 in Greensboro, N.C. For more information you can go to: <u>www.ncsta.org</u>

Rock Giveaway at the NCSTA-PDI

The N.C. Aggregates Association (NCAA) will be holding its bi-annual rock giveaway. Member companies supply and deliver rock samples from across the state. The teachers choose their rock samples, buffet-style, to assemble a 'rock kit'. In addition, the N.C. Geological Survey has submitted a proposal to hold an Elementary level workshop to assist K-5 teachers in using the samples.

Elementary Science Education in the K-12 System

An important article by the NSTA President, at <u>http://www.ncsta.org/reflector/elem.html</u> discusses the key to building a solid science foundation for our children and our society. Education is a continual building process that begins in early childhood. This early science education is sometimes overlooked because of the No Child Left Behind legislation. Students in Middle and High school cannot be expected to learn science without a solid foundation in K-6.

Earth Science Week Kits

The planning process has begun to procure a supply of Earth Science Week kits. The American Geological Institute (AGI) produces the kits, the Carolinas Section of the Association of Environmental and Engineering Geologists (AEG) organizes and funds the purchase of the kits, and the N.C. Geological Survey distributes them along with volunteers from AEG.

North Carolina Science Teachers Association (NCSTA)

Here is a link for more information on science education in the NCSTA newsletter the Science Reflector: <u>http://www.ncsta.org/reflector/index.html</u>

Changes in the 2009 OEST/OESE award

The winners for 2009 will be announced later this summer. This year there is a change of the name of the awards. The awards are now listed as the Outstanding Earth Science Teacher (OEST) award and the Outstanding Earth Science Educator (OESE) award instead of using the prefixes "traditional and non-traditional".

The OEST category is for a classroom teacher at the middle school or high school level. The OESE category is for an educator in a non-secondary school setting such as museums, camps, community colleges, government agencies, industry, and elementary schools. For more information about the awards and to download a nomination form, you can go to:

http://www.geology.enr.state.nc.us/proj_earth/proj_earth.html

North Carolina Environmental Education (EE) Certification Program

The EE Certification program has been revamped with new requirements effective January 1, 2009. This program is administered by the N.C. Office of Environmental Education. For more information on the program and how to become certified go to:

http://www.eenorthcarolina.org/certification/about_program.html

N.C. Department of Public Instruction (NCDPI)

Update for the Summer 2009 Essential Standards:

- Version 2.0 of the Earth/Environmental Science Essential Standards is on the DPI website at http://www.dpi.state.nc.us/acre.
- Version 3.0 will be coming soon.
- Grades K-8 are also on this website.
- Grades 6-8 and the high school courses will be taken to the State Board of Education for discussion in August and action in September.
- Grades K-5 have been delayed a month from this schedule.
- Overall timeline of the Essential Standards is on the website as well. A copy is provided in this packet.
- New assessments will be developed to reflect the Essential Standards.
- Support Documents will be developed and distributed for all science courses (K-8 and the five HS core courses) once the Essential Standards are approved by the State Board

Presidential Awards for Excellence in Mathematics and Science Teaching:

- 2008 Awardee for Science has been announced—Carol Swink Wooten of Wake County Schools.
- 2009 NC Finalists have been announced: Gail Barkes of Wake County Schools, Ramona Hedrick of Charlotte-Mecklenburg Schools, and Judy Jones of Chapel Hill-Carrboro Schools.
- This fall, nominations will be open for outstanding K-6 Science and Math teachers. Go to <u>www.paemst.org</u> for more detail or contact Ragan Spain, NC PAEMST Coordinator at <u>rspain@dpi.state.nc.us</u> or 919-807-3950.

NCDPI Contacts (current as of 07/10/09):

Beverly Vance	Interim Section Chief	919-807-3936	bvance@dpi.state.nc.us
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Benita Tipton	High School Consultant	919-807-3933	btipton@dpi.state.nc.us
Victoria Ewing	Program Assistant	919-807-3929	vewing@dpi.state.nc.us

ListServ---To get on the listserv, contact Victoria Ewing with your name, email, and grade level of interest (elementary, middle, and/or high).

Puerto Rico (no information submitted)

South Carolina (submitted by Gwen Marie Daley)

South Carolina Earthquakes

Four minor earthquakes rocked (or at least gently rattled) the Palmetto State this spring and summer, ranging from a magnitude 1.7 quake in Dorchester County to a magnitude 2.6 quake in Barnwell County (http://www.dnr.sc.gov/geology/news.htm). The South Carolina Earthquake Education and Preparedness Program (SCEEP) offers more information about earthquakes in South Carolina as well as educational resources on earthquakes and earthquake preparedness (http://scearthquakes.cofc.edu/).

The South Carolina Geological Survey and the USC Department of Earth and Ocean Sciences studied shallow subsurface faulting in Berkeley County using seismic reflection this summer (http://www.dnr.sc.gov/geology/seismic.htm). The Pringletown fault zone marks the edge of the Jedburg basin, a buried Mesozoic basin, north of the fault line that caused the great 1886 Earthquake (http://www.dnr.sc.gov/geology/images/pringletown.jpg).

South Carolina Science Council (SC²)

SC² will hold its annual conference November 4-6 in Myrtle Beach with the theme "Putting Learning into Action." Founder of the South Carolina Association of Naturalists (SCAN) and USC School of Environment adjunct professor Rudy Mancke will be one featured speaker. The meeting will include featured speakers Miles Hayes and Jacqueline Michel of Research Planning, Inc., a science consulting firm specializing in coastal and environmental management, discussing "A Coast for All Seasons - A Naturalist's Guide to the Coast of South Carolina" followed by a beach walk. For more information, and to register, please point your web browser to http://www.southcarolinascience.org/conference.html.

Carolina Geological Survey (CGS)

CGS will hold its annual meeting November 6-8 in Columbia. It will include a field trip to the South Carolina Piedmont led by Jerry Bartholomew. For more information about the meeting and the CGS, please see http://www.carolinageologicalsociety.org/.

All CGS guidebooks, including road logs and maps, are now available as PDFs on the organization website under the "publications" tab. The CGS has done a superb job, which included retyping and formatting the older publications as well as adding a search engine.

South Carolina Department of Health and Environment (SCDHE)

SCDHE continues to offer an impressive array of educational programs (http://www.scdhec.gov/environment/outreach/learn.htm), including their Earth Day resources (http://www.scdhec.gov/environment/earthday/schools.htm). Pollution Prevention Week (P2) is scheduled for the week of September 21-27. The City of Columbia Climate Protection Action Campaign will hold its 2009 "Green is Good for Business" conference in Columbia on September 1st (http://www.coccpac.com/?pageid=22)

The most recent "State of the Beaches" report, released on August 5th (http://www.scdhec.gov/administration/news/2009/nr20090805-01.htm), contained both good and bad news. While chronic erosion continues to be a problem, major storms spared South Carolina beaches. The Surfrider Foundation offers extensive information about U.S. beaches, including South Carolina (http://www.surfrider.org/stateofthebeach/). USC's Belle W. Baruch Institute for Marine and Coastal Sciences also offers education outreach and training about coastal processes (http://links.baruch.sc.edu/educateresource.html).

Tennessee (submitted by Michael A. Gibson)

2009 TSTA-TEST Workshop Planned. The 2009 Tennessee Science Teachers Association annual meeting will be held at the Marriott Hotel in Franklin, TN November 6-8th. The Tennessee Earth Science Teacher (TEST) workshop topic will focus on ocean science. Activities will include investigations of sand and interpretation of "ancient oceans of Tennessee". TEST is organizing a field trip to the Ordovician paleoseas exposed in the surrounding area as part of the meeting. For information contact Dr. Michael Gibson, Dept. of Agriculture, Geosciences, and Natural Resources, University of Tennessee at Martin, Martin, TN 38238 (731.881.7435; <u>mgibson@utm.edu</u>) or Dr. Ann Holmes, Dept. of Physics, Geology, and Astronomy, University of Tennessee at Chattanooga, Chattanooga, TN ((423) 425-1704; <u>Ann-Holmes@utc.edu</u>). For more information visit: http://www.tnsta.com/.

Teacher Friendly Guide to Southeast Workshop to be Offered. TEST will offer a workshop for educators at the TSTA meeting November 6-8th at the Franklin Marriott using the Paleontological Research Institution's Teacher Friendly Guide to the Southeast. For information contact Dr. Michael Gibson, Dept. of Geology, Geography, & Physics, University of Tennessee at Martin, Martin, TN 38238 (731.881.7435; mgibson@utm.edu).

2009 OEST Winner. The winner of the 2009 Outstanding Earth Science Teacher for Tennessee is Mrs. Francis Hamilton, who teaches at Blanch School in Lincoln County. Fran will be presented her state-level award at the Tennessee Science Teacher Association annual meeting.

New Science Graduation Requirements for High School Update. The State of Tennessee's newly approved science graduation requirements are now in effect and the State has been offering numerous training programs on the new standards. Students on a "scholastic" track are required to complete one year each of biology and chemistry, along with two additional sciences, to graduate from high school. The new requirements are targeted to take effect in the 2008-09 academic year. The new standards are available online at http://www.state.tn.us/education/ci/curriculum.shtml. Due to the state's decision to shift earth science downward to lower grades, a renewed effort to establish dual enrollment Geology courses is beginning to take root in Tennessee.

TENNMAPS. TENNMAPS 2009 completed its fourth year this past summer with two weeks of intensive study for nearly 50 teachers from sixteen school districts in northeast Tennessee. The Title II Math/Science Program (MSP) grant was funded to cover Earth science and environmental geology content. The project was headed by Dr. Michael Clark and Dr. Bill Deane from the UTK Deptartment of Earth and Planetary Sciences with contributions from Dr. Michael Gibson (UT Martin), Dr. Hugh Mills (Tennessee Tech), Dr. Martin Kohl (Tennessee Division of Geology), and Dr. Rita Hagvick (UTK School of Education).

NATIONAL MARINE EDUCATORS CONFERENCE. The 2010 NMEA annual national conference will be held in Gatlinburg, TN July 18-23. The theme of the conferences is "From the Mountains to the Sea". For more information visit the Tennessee Educators of Aquatic and Marine Sciences (TEAMS) website, <u>http://teamsoftn.org/</u> or the NMEA website, http://www.nmeaweb.org/.

The Outstanding Earth Science Teacher (OEST) nomination form is now available at http://nagt.org/nagt/programs/oest.html .

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