

Newsletter of the Association of Engineering and Environmental Geologists and American Institute of Professional Geologists. Carolinas Sections

#### Summer 2006

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## MARK YOUR CALENDAR! JULY 20, 2006

AEG Carolinas
Planning Board Meeting
COLUMBIA SC

Calendar of upcoming events is on our website - http://www.AEGCarolinas.org Issue date 21 June 2006

# **AEG Mid-Year Board Meeting in New Orleans**

By Rick Kolb, AEG Carolinas Vice Chair

As the representative from the Carolinas Section, I attended AEG's 2006 mid-year board meeting in New Orleans June 2-4. The meeting started Friday afternoon with a two-hour orientation for people who have never been to a board meeting or who are new to the board (of which I am both). The newbies, about 15 of us, were encouraged to find members of our sections who would serve on national committees. Typically these committees do their work during monthly conference calls of an hour or so, so the time requirement is not great. If you are interested in participating, drop Becky Roland an email, and she will let you know what the opportunities are. After orientation, a group of about 30 of us had dinner at Mulate's, a large Cajun restaurant in New Orleans' warehouse district, featuring live zydeco music. It was a nice way to get to know people from other sections of AEG, of course while consuming a brew or two.

Saturday morning the board meeting began at 8:00 and we covered about one-third of the agenda. Our president, Darrel Schmitz, led the meeting, but there was a lot of input by others, including reports by committee chairpersons, Chief Staff Executive Becky Roland, and Julie Keaton, who organizes our meetings.

At noon we boarded a Mississippi State University bus for the field trip, led by Dr. Schmitz. He passed out a trip guide that included cross-sections through the levees. We began with stops at two levees in New Orleans, one in the Lakefront area and one in the Ninth Ward, where we got off the bus to view ongoing repairs and to hear a description of the issues by personnel from the Corps of Engineers. The Corps person discussed and acknowledged the problems with the levees, and noted that the problems are further aggravated by sandstones (former beach ridges) beneath some of the levees that are aquifers which are discharging groundwater to the levee. We were also told that studies in the Lakefront area have shown that

up to one-half of the water being discharged to the New Orleans stormwater systems is potable water from the municipal water system. Thus, the shallow aquifers and leaking water system added water to storm surges resulting from hurricanes. The levees are being repaired with T-piles of 60 feet length, replacing the I-piles of 15 feet length. We saw lots of unsuitable soils being removed from the levees,



Devastated area in Biloxi, MS

too; the sheet piles had been set in soils that were not really suitable for the intended purpose.

The new piles were being emplaced where failures had occurred; nothing is being done at this time at other areas along the levees. Upgrading of the levees will be a *long* process, assuming that it will be funded. On the way to our stop at the second levee, along the Industrial Canal, we drove through the Ninth Ward, which looked like a war zone. We have all seen photos, television footage, and maybe Dr. Schmitz's presentation at our May meeting of the damage, but you really have to go there to get a full grasp. It is indescribable and very sad.

After our trips to the levees, we took the one-hour trip to Gulfport/Biloxi and viewed the damage there. Blocks and blocks of nothing but concrete slabs. The damage here was different from New Orleans, which didn't have the destructive surge. Dr. Schmitz said the storm surge at its highest in Mississippi was 30 feet, and that debris was carried inland as far as 13 miles, some of which was brought back to the Gulf when the waters retreated, leaving debris on the beaches and in the shallow water offshore. Though the beaches have been cleared and cleaned, you can't swim in the

water or go boating due to this debris. The fishing industry has been seriously damaged. We had dinner at a restaurant in Ocean Springs, again having the opportunity to get to know people from other sections.

Sunday was the continuation of the board meeting. Becky and others (we now have a dedicated webmaster) have put a lot of time into the new website, and she encourages everyone to get on it and see what's there. (ed: our website is http://www.aegweb.org). She asked for comments and recommendations (hopefully positive, she said, at least for a month or two), and for materials and links to be posted on the website. We were told the 2011 annual meeting has been proposed for late summer in Anchorage, where they got a great hotel rate at a very nice hotel. We were given an update on the annual meeting this fall in Boston, which will be held in a beautiful, historic hotel downtown, again at a great rate (for Boston) of \$169/night. We were encouraged to get out the word on this meeting. The board meeting was still going strong when I left at 3 PM, and there were committee meetings on Monday. It was a worthwhile trip, meeting lots of geologists and learning how AEG functions. I encourage our membership to volunteer to serve on the board of the Carolinas Section and have similar opportunities to get involved in the workings of AEG.

Rick Kolb, AEG Carolinas Vice-Chair, is a Principal Geologist with MACTEC Engineering and Consulting, Inc. in their Raleigh office.



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### Message from the Chair

By Tyler Clark, AEG Carolinas

#### Call for Volunteers!



The Carolinas
Section Board of
Directors invites
you to become an
officer! The Board
is looking for
individuals who
may be interested in
becoming more
active in our AEG
section. If you are
interested in
becoming an
officer, or just

finding out more about what's planned for your Section, please feel free to attend the Board of Directors meeting in Columbia, SC on July 20. Please contact me at Tyler.Clark@ncmail.net for additional information.

Cheers!!

Tyler Clark
Chair@aegcarolinas.org

REMINDERS! Please remember to renew your AEG Membership soon! If you are listed below, we have no record of your renewal for 2006, so please renew with AEG's Becky Rowland at <a href="mailto:broland@aegweb.org">broland@aegweb.org</a>

Alan Barry Nelson Mark E. Landis Gordon Harland Box Andrew O. Steege Alan D. Martin F. Louis Long Emily L. Batts Briget C. Doyle David Hisz Donald B. Nothdurft Stephen J. Gosselin Matthew S. Balven Joseph J. Montrella Mark E. Fox Alexander S. Glover Kevin Andrew Dickey Norman S. Levine Daniel P. Osbourne Ralph M. Rodina John E. Charlton

The AEG Renewal Form is in the back of GeoNews. If you have already renewed, THANK YOU!!

**GeoNews** is a joint publication of the Carolinas Sections of AEG and AIPG. There are four issues per year, with deadlines and issue publication dates listed below. We publish news of the profession, job openings, and positions wanted.

Deadlines can be flexible depending on events Spring – deadline March 1, issue date March 21 Summer – deadline June 1, issue date June 21 Fall – deadline September 1, issue date September 21 Winter – deadline December 1, issue date December 21

Deadlines for submittals for the National AEG News: March issue – January 21, 2006 June issue – April 30, 2006 September issue – July 31, 2006 December issue – October 31, 2006

	ChairTyler Clark (919) 733-2425
	<u>Chair@aegcarolinas.org</u>
	Vice Chair Rick Kolb
	<u>vicechair@aegcarolinas.org</u>
	TreasurerRaymond Knox
	<u>treasurer@aegcarolinas.org</u>
	Secretary Bridget Doyle
	secretary@aegcarolinas.org
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	iennbbauer@gmail.com
	AdvisorGary Rogers (336) 274-9456
	advisor@aegcarolinas.org
	AEG Nationalhttp://aegweb.org/indexf.html
AIPG (	Carolinas Section – Officers and Contacts
	PresidentJohn M. Stewart, P.G. (336) 668-0093
	jstewart@trigoneng.com
	Secretary/TreasurerRuss Patterson, P.G.
	(919) 774-3770
	<u>russ@pattersnexploration.com</u>
	Membership ChairMacklin M. Armstrong (919) 838-993
	<u>armgeoeng@mindspring.com</u>

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truism that probably need not

be stated (!!)

## GeoRamblings

By Charles W. Welby

This column comes after some reflection while driving down I-85 between two semitrucks about geological adventures and things seen and other similar experiences. Some observations and thoughts on how geological events and results of geological processes have played a role in human events were the focus of the thoughts. You the reader may have other items that you might use.

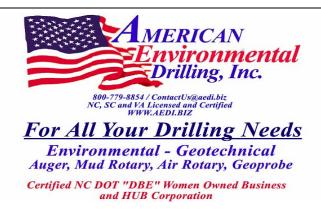
The first thing that comes to mind is a infuriated the talk by O.T. Hayward, a long-time Professor of Geology at Baylor University. He described in very humorous terms how his family's migration (over several generations) from the east coast through the Appalachians was affected by the Geology of the places where each generation stopped before finally reaching Texas. There is not enough room infuriated the the 1770s, du French and the locals by blas underground they managed the managed that the 1770s in the 1770s, du French and the locals by blas underground they managed the managed that the 1770s in the 1770s, du French and the locals by blas underground they managed the managed that the 1770s in the 1770s in

to explain each event here, but the effects of the Appalachians were quite different from those of

the Midwest. In Texas the

migration was finally stopped when a member of the last generation to migrate encountered a barbed wire fence while riding his motorcycle across a Texas plain. Details of the talk are given on a VHS tape once available from an AEG Board meeting held at College Station some years ago.

The Maastrichtian Stage of the



Cretaceous is important in a number of ways. Rocks on which the stage is based are exposed near Maastricht in southeastern Holland. For many generations the marls, limestones, and sandstones in the area have been mined for building stones. Important fossil finds have been made there also. The local Natural History Museum (Pardon the anglicized name of the museum.) contains interesting exhibits on the geology and paleontology of the region, including a Mosasaur.

The French stole one of the important finds of a marine reptile, an action which infuriated the locals back in the 18th century. In the 1770s, during an "argument" between the French and the locals, the French tried to trap the locals by blasting some of the rocks in the underground quarries to close the tunnels. Instead they managed to blow in the roof and drop the

rocks on themselves, thereby opening a passageway to the surface. Thereafter, the episode was given a name (which escapes me at the moment) which was very derogatory of the French and

used often in describing the French and their doings.

In more modern history, the underground quarries with their intricate combination of passageways were used as hiding places by the local citizens during WWII and by the Resistance Movement for a while to hide and move downed Allied airman away from potential captors and eventually to safety. The underground passages run in a complex pattern from Holland into Belgium. Eventually the Germans captured the tunnels and placed a flying bomb factory in the tunnels. The tunnels have been used for art work, and on some of the walls are sculptures of dinosaurs created by one person over a number of years. Thirty years ago the limestones were being surface mined in Belgium to support a cement manufacturing industry, and there was concern about the loss of a geologically and historically important resource.

Darryl Schmitz' talk on May 5 at the Carolinas Section of AEG meeting in Raleigh was interesting and provided insight into how seemingly minor, but geologically important things can play a role in the pattern of destruction during a hurricane.

Particularly notable was the observation of how the extent of damage along much of the Mississippi Gulf Coast was controlled by geomorphologic features. The marine terrace that backs the "modern" coastal features provided enough elevation so that the structures and natural features sitting on it were somewhat protected from the storm surge. That is, elevation counts, a truism that probably need not be stated. It will be interesting over the next few years to read in the geological and engineering literature what was learned about the design and construction of the levees in New Orleans.

Professor Henry Petrosky, who has written a number of books and articles about various engineering projects, has noted that often the failures in a design, and in particular in bridges, has eventually led to improvements in construction of similar projects. Often in bridge construction, it appears, that a perfectly rational design that has been used repeatedly but with modifications that "improve upon the original design" eventually fails because the later designers seem not to recognize the effects that the "improvements" to the design impose upon the final structure.

During last April my wife and I did the "retirees' thing" and took a cruise in the Caribbean and through the Panama Canal. Most of us at some time have read or heard about the difficulties of constructing the canal, and the failure of the French to succeed and the manner in which Teddy Roosevelt proceeded to push the project. (If you as a youngster had a favorite "teddy bear," guess who it was named after.) I have been fascinated with the history of the Canal since sometime in my early teens I saw a movie about its construction.

The story line was mostly about the conquering of the Yellow Fever hazard. There

are many geological lessons to be learned when one studies the construction of the canal, as most of you reading this are probably aware. What we hear about most are the landslides and other slope failures, especially in the Culebra Cut, which marks the passage through the Continental Divide. Constant dredging occurs to keep the canal open, and at the present, efforts are underway to widen the canal. So dredges are in abundance. As the canal passes through the Culebra Cut, one can observe not only recent earth movements but in the major cut at the Continental Divide itself, the large rock bolts that have been installed to keep the Continental Divide rocks in place. (An attempt to control plate tectonics?)

If you are by any chance interested in a detailed history of the Panama Canal, you should read David McCullough's book, Pathway Between the Seas. Perhaps one of the best messages of this book is that in dealing with rocks and construction, keep your eyes open and do not assume that what you applied to a project last year may always be applicable to a similar project in another environment. The Panama Canal is not the Suez Canal! Ce live!!

# Charles W. Welby

Dr. Charles W. Welby is a former section chair for AEG. He can be reached at <a href="mailto:cww\_ral@hotmail.com">cww\_ral@hotmail.com</a> for comments



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# **42**<sup>nd</sup> Forum on the Geology of Industrial Minerals – a Report By Jeff Reid, NCGS

The 42nd Forum on the Geology of Industrial Minerals was held in Asheville, North Carolina on May 7-13, 2006. The North Carolina Geological Survey, in collaboration with industry and the Minerals Research



Some of the dozens of poster sessions displayed at the Forum.

Laboratory of North Carolina State University, convened the Forum. Forum attendees and authors were from 27 states, nine counties and five continents. There were 202 registered attendees.

Oral and poster presentations were combined with nine pre- and post- meeting field trips that showcased the diversity of our State's industrial minerals – including a three-day field trip, "Mountains to the Sea." (*Ed: see the article on the Aurora Fossil Museum in this issue.*)

Asheville is an industrial minerals center – and a mountain vacation destination. North Carolina is a significant industrial minerals storehouse with significant production of feldspar, high-purity quartz, mica, phosphate, clay (bricks), glass sand, dimension stone, peat, olivine, gemstones, silica, and has significant heavy mineral reserves (ilmenite, rutile and zircon). North Carolina is the headquarters of

Martin Marietta Aggregates and the Mideast Division of Vulcan Materials Co. – two of the largest U.S. aggregates producers.

The 45 technical papers covered a broad range of topics beginning with an overview of North Carolina's geology and industrial mineral resources. Other theme sessions focused on phosphate, crushed stone, sand and gravel, clay, dimension stone, brick, gemstones, barite, soda ash, feldspar, high-purity quartz, talc, mineral processing advances, refractories, databases, strategic minerals for the future, and education outreach – including North Carolina's earth / environmental high school graduation requirement – *the first in the nation*.

The approximately 30 posters covered an equally diverse range of topics beginning with the state's main industrial mineral districts, permitting application processes, activities of the North Carolina Geological Survey, abrasives (garnet), glass sand, aggregates, gemstones (natural and synthetic), phosphate, reclamation, refractory minerals (pyrophyllite, andalusite), geographic information systems (GIS), Spruce Pine District, valuation, travertine, magnesite, kaolin, limestone and aggregates.

Of special note are the "Oral history of mining in western North Carolina," and the "History of the Minerals Research Laboratory of North Carolina State University." These two contributions provide important historical



Participants in the Nantahala Quarry Field Trip.

perspectives of the mineral industry in North Carolina.

It is our hope, as convenors, that these 42nd Forum proceedings will be a long-standing resource on industrial minerals in North Carolina and elsewhere, and one that will improve public understanding of the importance of minerals to society – "If it's not grown, it has to be mined."

The proceedings were published digitally on a CD-R as North Carolina Geological Survey's Information Circular 34. The proceedings contain the papers that accompanied the oral presentations and posters (MS PowerPoint or .pdf format). Copies of Information Circular 34 are available for \$10.00 plus tax and shipping. Order copies from the North Carolina Geological Survey's Map and Publication Sales Office by telephone (919.733.2423) or by email at paula.day@ncmail.net.

The 43<sup>rd</sup> Forum on the Geology of Industrial Minerals will be hosted by the Colorado Geological Survey on May 20-25, 2007 in Boulder, Colorado. Their website is http://imforum2007.crmca.org/

Jeffrey C. Reid, Co-Chair and Proceedings Editor, 42<sup>nd</sup> Forum on the Geology of Industrial Minerals, NC Geological Survey

919.733.2423 x403



Jeff Reid, Co-Chair of 42<sup>nd</sup> Forum on the Geology of Industrial Minerals, and Jane Gill-Shaler, GeoNews Editor, on the Nantahala Train.

# **2004 State Annual Mineral Chapter Now Available**

By Jeff Reid, NCGS

The 2004 state annual mineral chapter, "The mineral industry of North Carolina," is now available at

http://minerals.usgs.gov/minerals/pubs/state/ (click on North Carolina). This chapter is prepared under a Memorandum of Understanding between the U.S. Geological Survey and the North Carolina Geological Survey for collecting information on all nonfuel minerals. An extensive series of tables (MS Excel format) also at this url provide additional mineral production details.



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# Announcement and Calls For Papers – GSA and AIPG

#### **GSA 2007 Southeastern Section Meeting**

The Department of Geology and Geography and the Applied Coastal Research Laboratory at Georgia Southern University and the Southeastern Section of the Geological Society of America proudly invite you to participate in the 56th Annual Meeting of the Southeastern Section of the Geological Society of America in Savannah, Georgia from March 28-30, 2007. Georgia's First City and largest port, Savannah has some of the state's oldest houses, largest oak trees, and best restaurants.

Symposia and theme sessions are already being planned for the Savannah 2007 meeting. Anyone interested in proposing additional symposia or theme sessions should contact Technical Program Chair Michael S. Kelley at <MKelley@GeorgiaSouthern.edu>. Field trips to the Okeefenokee Swamp, the barrier islands, igneous and metamorphic rocks of the Blue Ridge and Piedmont, and heavy sand deposits will be part of the 2007 meeting. Anyone interested in proposing field trips should contact Field Trip co-chairs Fred Rich

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FRich@GeorgiaSouthern.edu or Clark Alexander clark.alexander@skio.usg.edu. For further information, please contact the local committee chair:

Pranoti M. Asher Department of Geology and Geography, Georgia Southern University, Statesboro, Georgia 30460-8149

Phone: (912) 681-0338

PAsher@GeorgiaSouthern.edu

Read more about the meeting at our web site <a href="http://cost.georgiasouthern.edu/geo/SEGSA2007">http://cost.georgiasouthern.edu/geo/SEGSA2007</a>. <a href="http://cost.georgiasouthern.edu/geo/SEGSA2007">http://cost.georgiasouthern.edu/geo/SEGSA2007</a>. <a href="http://cost.georgiasouthern.edu/geo/SEGSA2007">http://cost.georgiasouthern.edu/geo/SEGSA2007</a>.

# AIPG 43<sup>rd</sup> Annual Meeting "Sustainability", St. Paul MN Sept 23-28, 2006

We cordially invite geologists/geoscientists from all walks to share your research, experiences, and inspirations related to our theme of "Sustainability." Topics to be addressed at the meeting include:

- sustaining the profession and science;
- geologic resources as a foundation for society;
- interactions of natural hazards with the human population;
- education and public policy.

This is an opportunity to explore together the different meanings that "sustainability" can hold for professional geology and those who practice it. It is our hope that this collective assessment of the topic will offer AIPG some timely opportunities to incorporate this theme into our future endeavors.

SUBMISSION DEADLINE - JULY 15, 2006 To submit or discuss abstracts, contact: Charlie Tiller, PG, CPG - Technical Program Chair 651-659-1302 or ctiller@amengtest.com

# AEG 2006 49<sup>th</sup> Annual Meeting "From Till to Fill", Oct 30-Nov 4, 2006, Boston MA.

Come and enjoy all that the Boston area has to offer! AEG-2006 features short courses, field trips, technical sessions, symposia, and more! Tech sessions include: Tunnels and Underground Construction, Marine Geology, Coastal Processes/Sea level, Applied Geophysics, Water Supply, Landslides/Rockfalls, Environmental Geology, Alternate Energy

Sources, Engineering materials, Glacial Geology, Till and Fill throughout Boston History. Other features are a NEW format Poster Session with a dedicated meeting room and interaction with Poster authors, Teachers' workshops, and Short Courses on Environmental Geotechnical, and Geophysics subjects.

The meeting hotel will be the Boston Park Plaza, a 1927 hotel in the heart of downtown Boston and the city's Theatre District. For more information, or to register, go to the AEG website, <a href="www.aegweb.org">www.aegweb.org</a>. The Boston meeting will be held October 30 through November 4. This annual meeting has a different schedule than past meetings. Be sure to see AEG's web site (<a href="www.aegweb.org">www.aegweb.org</a>) for the changes.

(Ed: at press time, we received a note from Julie Keaton, events director of AEG, that the deadline for receiving abstracts for the 2006 annual meeting held in Boston has been extended to July 7. If you have not already done so and are interested in presenting a talk in Boston, please send your abstract to her at aegjuliek@aol.com)

#### First North American Landslide Conference

AEG, GEO Institute, and ARMA (American Rock Mechanics Association) will be convening "Landslides and Society: Integrated Science, Engineering, Management, and Mitigation" at Vail Colorado on June 3-8, 2007. The conference is designed to provide a stimulating forum for geoscientists, engineers, planners, economists, program managers, and other decision makers concerned with landslide hazards and their impact on North American society. Conference proceedings will be published in a special volume. Technical sessions and excursions, receptions, and a full social program are being planned. The conference will be held in the Vail Marriott Mountain Resort & Spa, at the base of Vail Mountain. For more information, go to the event website

http://www.mines.edu/academic/geology/landslidevail2007/ The site contains up-to-date postings on the conference program, abstract and paper submissions, registration, and accommodations.



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> GOLDER IS HIRING – SEE JOB OPPORTUNITIES, P. 10

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### JOB OPPORTUNITIES

#### GOLDER ASSOCIATES INC., an

employee owned consulting firm with branch offices throughout the United States, specializes in ground engineering, environmental sciences, and hydrogeology. Three positions in Greensboro.

#### **ENTRY LEVEL ENGINEER**

The Greensboro, NC office of Golder Associates has an immediate opening for an entry level professional with B.S. (minimum) in Civil/Geotechnical Engineering. Position will involve field and office support for solid waste and geotechnical projects. Will perform calculations, write reports, conduct field explorations, and perform construction quality assurance and other activities typical for a junior-level engineer. Position requires travel and working independently and as part of a team.

#### PROJECT LEVEL ENGINEER

The Greensboro, NC office of Golder Associates has an immediate opening for a professional with B.S. (minimum) in Civil/Geotechnical Engineering and 5 to 8 years of related experience. P.E. preferred, or ability to obtain a P.E. Position will involve field and office support for solid waste and geotechnical projects. Strong technical skills and ability to create complex detailed design drawings and calculations, along with excellent written and oral communication skills required. Experience with interacting with owners, contractors, and regulatory agencies is a plus. Position requires travel and working independently and as part of a team.

#### SENIOR DRAFTER/DESIGNER

The Greensboro, NC office has an immediate opening for a senior drafter/designer with 4+ years of three dimensional drafting in landfill design and construction drafting.

Competitive salary and benefits package. Equal Opportunity Employer.

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#### GOLDER ASSOCIATES INC.

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**DRILLER'S HELPER** - Opening in Raleigh, NC to assist Driller with set-up and process of drilling operations. Outdoor work year-round. Physical labor - must be able to lift up to 75 pounds frequently. Frequent out-of-town travel required. Must have a good driving record and pass a drug screen.

#### **CMT ENGINEERING TECHNICIANS -**

Openings in Greensboro and Charlotte, NC. Successful candidate will have 2 to 5 years of experience performing field testing of soil, concrete, and asphalt for construction projects and forensic evaluations. Must be able to document his/her findings in accordance with good engineering practices and prepare daily reports. Pre-testing duties include limited equipment maintenance, review of work assignment with project manager, and familiarization with test methods. Outdoor work. ACI, NICET, and/or ICC

certifications preferred (must be able to obtain if not currently certified); good communication skills (written and verbal) with clients and other personnel; good driving record and drug screen are required. Company truck provided for project-related travel.

#### AWS CERTIFIED WELDING

INSPECTOR, ASNT Level II Ultrasonics - Opening in Raleigh, NC. Successful candidate must be an AWS Certified Welding Inspector and be certified as an ASNT Level II Ultrasonics Inspector. Experience reading structural plans and performing structural steel inspections is a must. Further experience in inspection of piping, tanks, products, etc. is a plus. Individual will be responsible for performing/supervising field inspections, assisting in proposal preparation, preparing reports, and training. AAS or BS Degree plus 5 years of experience preferred.

TRIGON has excellent benefits and starting salary/wages for all positions. Send résumé to Charlotte Harrell at charrell@trigoneng.com or fax to 336.668.3868. EOE/M/F/V

#### We know you are hiring!!

Please email us to put your job opportunities in the next AEG-AIPG Newsletter – Deadline for ads September 1, 2006. Please contact Jane Gill-Shaler <u>janehgill@aol.com</u>

### **GEO**

#### **Geology Executive Online**

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# Sign up for the ROCK AND MINERAL EXHIBIT FOR TEACHERS

By Fred Allen, NC Aggregates Association

It's time once again to take the story of rocks and minerals to earth science teachers attending the North Carolina Science Teachers Association Professional Development Institute. The Institute attracts over 1500 teachers from across the State and offers a comprehensive series of workshops and seminars on science topics. It is held at the Koury Convention Center in Greensboro on November 9-10, 2006.

The Rock and Mineral Exhibit is sponsored by the NC Aggregates Association, and in past years with cooperation from the AIME/SME-Carolinas Section, AIPG-Carolinas Section, AEG-Carolinas Section, Carolina Geological Society, and the Groundwater Professionals of NC.

The exhibit, one of the most popular in the show, offers teachers a collection of eight to ten varied NC rocks and minerals for classroom use. They leave the exhibit with their own personal rock kit and a collection of publications and other teaching resources offered by the NC Geological Survey. In addition, the NCDOT provides rock core samples which are always an attraction.

Your participation is encouraged. During the 2-day event, over 60 volunteers are needed to assist with distributing rock samples and providing teachers with information on North Carolina's geology. It's great fun!

Volunteers always leave impressed with teachers' enthusiasm and feel good about having helped further geological education. If you can help in the exhibit for a minimum 2-hour period, please call Fred Allen at the NC Aggregates Association at 919-782-7055 or at ncaa@ncaggregates.org. What a prefect place to talk to eager listeners about what you love so much. John Stewart, of AIPG Carolinas, says, "AIPG will be helping again this year. I hope to see many of you there. This may also be a great time to have a Fall meeting. If it won't interfere

with the conference, maybe can invite the visiting teachers to the meeting."

Contact Fred also if your organization or club is interested in helping sponsor the exhibit. Costs are minimal and the exposure to teachers statewide is exceptional. Join this exciting opportunity to help strengthen earth science education in NC.

Fred Allen can be reached at 919-782-7055.

### Aurora Fossil Museum – A Not-So-Secret Treasure

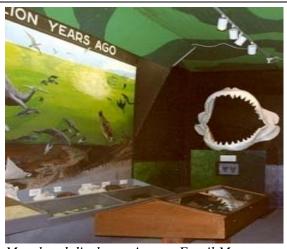
By Jane Gill-Shaler, GeoNews Editor (with invaluable help from Tex Gilmore, PCS)

A must-see for the curious and adventurous on any trip to eastern NC is the Aurora Fossil Museum in downtown Aurora. Free admission and a world-class collection of fossils are two attractions that would suffice alone to bring any fossil hound worth their salt to this small town, but the museum has even more to offer.

The 42<sup>nd</sup> Forum on the Geology of Industrial Minerals in May included a spectacular three-day "Mountains to the Sea" field trip, which included, at the last stop, PCS Phosphate, Inc.'s operation in Aurora, in eastern North Carolina. This was the highlight of the trip, showcasing PCS' huge operation, and the forethought with which they encourage young



Sifting through the fossil-rich tailings at AFM.



Mural and display at Aurora Fossil Museum

and old alike to learn all about the geology and paleontology of the ancient seafloor that served as the repository for the calcium phosphate currently being mined.

Huge megalodon (ancestor to the Great White Shark) teeth and jaws, a mastodon tusk, a walrus skull a million years old, and thousands of other fossils are a few of the many items collected in this area and around the state since the 1970s. Visitors are treated to colorful murals of marine mammals, sharks, and prehistoric fish that lived here when this part of the state was underwater. There is also an interesting collection of native American artifacts on display.

However, the most interesting feature to most people, young and old alike, is next to the Museum, where visitors may, for no charge, spend as much time as they like digging through fossil-rich coarse tailings from the phosphate mine. Trucks from the mine bring in a dozen or so full truckloads of material and dump it right there. The staff from the museum provide expertise and printed material to help the diggers identify their treasures, and the best part is you get to keep your finds!

The museum has been open since 1976, and focuses on teaching the geology and geographical history of eastern North Carolina, which was under the sea millions of years ago. Located on Main Street in downtown Aurora, the museum has recently dedicated a new learning center, open to the public, which is used to help educate the public about earth history, geologic

time, plate tectonics, and coastal plain geology. They recently kicked off their "I Dig Aurora" campaign, which is publicizing the attributes of the museum. Future projects in the planning stage are a live pit, which would showcase the actual formations from the Miocene, Pliocene and Pleistocene, millions of years ago. The fossils and formation tell the story of the formation of the Coastal Plains to the formation of the Atlantic Ocean.

There are volunteers and a geologist on staff. Every Memorial Day weekend the AFM hosts a fossil festival, in which several well-

known museums from around the country, Including the Smithsonian Institution and the Museum of Natural History, send representatives to this small town. Displays and talks by experts highlight the festival, and recent fossil discoveries are discussed at length.

The museum is open Monday through Saturday, 9:00 a.m. through 4:30 p.m. Admission is free, and school groups are welcome anytime, though they should call ahead. More information and pictures may be found at their website, <a href="http://www.aurorafossilmuseum.com/">http://www.aurorafossilmuseum.com/</a>, from which much of this information was obtained.



42<sup>nd</sup> Forum for Geology of Industrial Minerals - Field Trip participants at the PCS Phosphate Mine.

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#### **AEG CAROLINAS SECTION – SPONSOR INFORMATION**

The Carolina Section of AEG supports many of its activities with financial assistance provided by our sponsors. Our activities include quarterly meetings, periodic field trips and seminars, a quarterly newsletter, and email announcements about our meetings and geoscience related activities.

We offer several levels of sponsorship, but they all have one goal: to keep the sponsor's name in front of our members and to bring you business. We have a real commitment to connecting our sponsors to potential buyers and will do all we can to help you build your business. Most of our members are practicing professionals with responsibility for selecting subcontractors, so our group is a great place to find new customers and to catch up with existing customers in an informal setting.

Our sponsors provide financial support that allows us to have reasonably priced dinner meetings, host seminars, provide discounted dinner meeting costs for students, underwrites the cost of newsletters and web site, and supports science education in our schools. All costs listed below are per year and begin on the date that your payment is received.

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Please call if you have any questions (contact information below).

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#### **CALENDAR OF EVENTS 2006**

# GEOLOGY, ENVIRONMENTAL, AND GEOTECHNICAL EVENTS IN THE CAROLINAS COURTESY OF AEG CAROLINAS SECTION – <u>WWW.AEGCAROLINAS.ORG</u>

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DATE (TBA: TO BE ANNOUNCED)	EVENT	LOCATION	TIME	ADDITIONAL INFORMATION	ESTIM ATED PDH		
	RECURRING MEETINGS IN THE REGION AND OTHER INFORMATION						
	Geologic Training	Columbia, SC	6:30- 8:30	Periodic Training Sessions in Geoscience Topics Jack Gelting, 803-790-7215, Gelting1@juno.com 6042 Crabtree Road, Columbia, SC 2920	2		
WRRI	Water Research Seminar Series	Various, but generally 1132 Jordan Hall, NCSU Campus	Usually 3:00 PM	http://www.ncsu.edu/wrri/wrriseminars.html Email: water_resources@ncsu.edu			
3rd Thurs. of the Month	Forsyth Gem and Mineral Club Monthly Meeting	Vulcan Materials, 4401 N. Patterson Ave., Winston-Salem,	7:30 PM	Forsyth Gem and Mineral Club The Club holds monthly meetings and has an annual gem and mineral show. Phone: Jim Stroud at (336) 744-2940 Email: stroudj@vmcmail.com or Website: <a href="http://www.forsythgemclub.com/">http://www.forsythgemclub.com/</a>			
Generally on the last Thursday of the month	AGS Monthly Meeting	Atlanta, Fernbank Museum	6:30 PM	The Atlanta Geological Society holds monthly meetings, generally on the third Thursday of the month, and quarterly field trips.  President: john_costello@mail.dnr.state.ga.us Website:http://www.atlantageologists.org/			

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#### **CALENDAR OF EVENTS 2006**

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ON APPAI	Southern	Murphy-Oakley	7:00	Southern Appalachian Mineral Society	
SASA SA	Appalachian	Community	PM	Field Trips to limited access and historic collecting sites take	
A ME	Mineral Society	Center,		place from April to October. Information on the website and	
TOME SOUTH		Asheville, NC		from (828) 298-4237	
First Monday of each				Website: <a href="http://www.main.nc.us/sams/">http://www.main.nc.us/sams/</a>	
month except January					
Various Dates	Listing of	Various		Geological Society of America Geoscience Calendar	
various Baces	National Geo	Locations		http://www.geosociety.org/calendar/	
	Events of			* * * * * * * * * * * * * * * * * * * *	
	Various Groups				
GEO	ASCE	Your Choice		American Society of Civil Engineers GeoInstitute	
	GeoInstitute			http://www.geoinstitute.org/events/events.cfm	
INSTITUTE	Conferences and				
	Links				
of the American Society of Civil Engineers					
November, 2006	Annual NCSTA	Koury		NC Science Teachers Association	
(Rock Give-Away Held	Conference	Convention		Bi-Annual Rock Give Away coordinated by NC Aggregates	
on Even Years)		Center		Assoc. To volunteer contact Fred Allen, Executive Director,	
Stience Teach		Greensboro,		NCAA; 919/782-7055; ncaa@ncaggregates.org	
NCSTA TE		NC		Website: <a href="http://www.ncsta.org/conference/index.html">http://www.ncsta.org/conference/index.html</a>	
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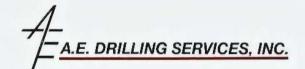


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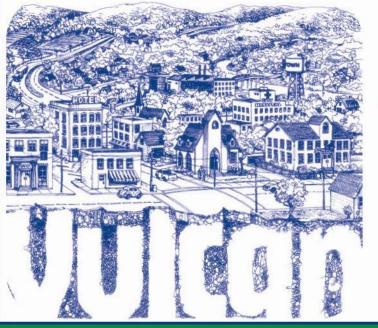


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- ♦ Broaden and update technical, practical and business knowledge.
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- Explore numerous opportunities for career enhancement through contacts at technical meetings and in continuing education programs.
- Influence the profession of environmental and engineering geology as it serves society and as it is regulated.
- Establish the standards of the profession.

#### ६६६६६६६६६६

AEG members receive our quarterly professional journal, *Environmental and Engineering Geoscience* and six-issues of the *AEG NEWS* as a regular dues benefit.

Members also enjoy a 20% "member discount" on all special publications, registration fees at meetings, short courses and field trips.

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- ◆ AEG sponsors workshops and short courses for which official Continuing Education Units are offered.
- ◆ AEG encourages its members to participate in activities of mutual interest with other societies and organizations.
- ◆ The annual Richard H. Jahns Distinguished Lecturer in Engineering Geology is cosponsored by AEG and the GSA Engineering Geology Division.
- ◆ AEG members make presentations and lead field trips for students at all levels.
- ◆ AEG's Technical and Professional Practice Committees keep the Association in a position of influence through their wide-ranging activities.
- ♦ AEG's 25 Sections and 20 Student Chapters provide educational and networking opportunities for members through regular meetings, field trips and local newsletters.
- Students compete for scholarships and awards, and interact with practicing professionals.
- Short courses, field trips, and technical sessions provide opportunities for AEG members to enhance their professional practice.
- ◆ International members are found in more than 20 countries and Designated Correspondents enhance technology transfer among more than a dozen countries.

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The Association of Environmental & Engineering Geologists (AEG) is an international, non-profit scientific and technical society, whose 3,000 members include geologists specializing in engineering geology, environmental geology, and ground-water geology as well as other professionals in affiliated fields such as civil and mining engineering, land-use planning, public policy and education.

Through its technical and professional activities, AEG strives to promote the value and importance of geologic practice in:

- detecting, containing, and remediating contaminated soil and ground water;
- recognizing and mitigating hazardous geologic processes to promote public safety and welfare; and
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### **MEMBERSHIP REQUIREMENTS**

MEMBER: Applicants for Member Class shall hold a degree in geology, engineering geology or geological engineering, or a degree in a related professional field with 30 semester-hours of credit in the geosciences. In addition an applicant shall be practicing in the field of Engineering Geology, Environmental Geology or Hydrogeology. Annual Dues for new (first-time) Members = \$75.00 per year for the first three years of membership. Otherwise Annual Dues = \$105.00. Applicants who qualify for Member Class, but are engaged in full-time teaching at the Primary or Secondary (K-12) level are eligible for Teacher Status (Annual Dues = \$35.00).

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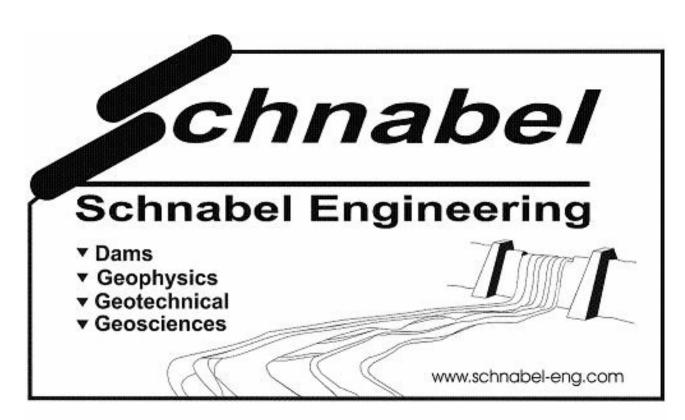
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