



SUMMER 2012

GEONews

Newsletter of the Association of Environmental & Engineering Geologists,
Carolinas Section
2009 and 2011 AEG Section of the Year



SAVE THE DATES!

AEG/AWGT CONFERENCE ON HYDRAULIC FRACTURING

**August 9 & 10
in Raleigh (p.22)**

CONGRESSIONAL VISIT DAYS

**September 11 & 12
in Washington D.C. (p. 4)**

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GEONEWS SUMMER 2012
Issue Date: June 21, 2012
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GeoNews is a publication of the Carolinas Section of AEG. There are four issues per year, with deadlines and issue publication dates listed below. We publish news of the profession, announcements, student member news, technical articles, and job openings.

Deadlines for submittal to AEG Carolinas GeoNews

(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 Sept.21
 Winter – deadline December 1, issue date December 21

Deadlines for submittal for the National AEG News:

March issue – January 15
 June issue – April 15
 September issue – July 15
 December issue – October 15

AEG Carolinas Section Current Officers and Contacts

Chair..... Paul Weaver, pmweaver@bellsouth.net
 Vice-Chair Brad Worley,
brad.worley@summit-engineer.com
 Treasurer...Alex Rutledge, frutledge@schnabel-eng.com
 Secretary..... bdoyle@uscupstate.edu
 Membership Chair..... Frederick Love,
Frederick.Love@TRS-Environmental.com
 Field Trip Chair Vacant
 Student Liaison Rick Kolb, rkolb0915@aol.com
 Social Committee Chair..... Adam Phillips,
Adam.Phillips@sgs.com
 Past Section Chair..... Rick Kolb, rkolb0915@aol.com
 Advisor..... Jennifer Bauer, jennnbauer@gmail.com
 Advisor..... Gary Rogers, grogers@schnabel-eng.com

AEG Carolinas Section Website www.aegcarolinas.org

Webmaster..... Tami Idol, tami.idol@ncmail.net

AEG National Website www.aegweb.org

GeoNews Editor (2003-present)

..... Jane Gill-Shaler (336) 883-0170
 cell (336) 687-6144
 JaneHGillShaler@gmail.com
 janehgill@stanfordalumni.org

Cover: AEG President Jennifer Bauer, AEG Chief Operating Officer Becky Roland, and Strategic Planning Committee Chair Deb Green in Washington D.C. for the Science, Engineering, and Technology Congressional Visit Days, April 25, 2012.

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MESSAGE FROM THE CHAIR

By Paul Weaver, PG,
Chair—AEG Carolinas Section

Our spring meeting was a joint meeting with ASCE and was held in Raleigh at Sparian's Bowling Boutique on March 29. Our speaker was Dr. Scott Burns, Professor of Geology at Portland State University in Oregon. Scott's talk was "The Mystery of Terroir-The Relationship of Geology, Soils and Climate to Wine." About 90 people attended this meeting. Scott gave a very interesting talk and I think everyone who attended has a much greater appreciation of how geology, soils, and climate influence the types and characteristics of wine.

Scott's talk at our section meeting was one of his last talks in the Carolinas in his role as this year's GSA/AEG Jahn's Distinguished Lecturer. We kept Scott busy with talks at College of Charleston, USC-Columbia, UNC-Wilmington, Wake Tech, NC State, and UNC-Charlotte. His tour of the Carolinas lasted almost a week.

The Geological Society of America's (GSA's) Southeast meeting was held in Asheville on March 31 through April 2. The Carolinas Section had the AEG booth set up in the exhibit hall where we solicited potential new members (quite a few new student members signed up), and generally informed anyone else who stopped by the booth what AEG is all about. We were also the sponsor for the keynote address given by our own Rick Wooten, and convened a technical session entitled "Practical Applications of Engineering Geology". The GSA national meeting will be held in Charlotte this year from November 4 through 7. The AEG Carolinas Section will be a sponsor and will convene a technical session entitled "Practical Applications and Environmental and Engineering Geology". If you have a presentation on this subject that you can present at the GSA meeting in November, please contact me (contact information is at the bottom of this article) and let me know since I need to start putting together the symposium as soon as possible. We would like to have a good showing by our Carolinas Section members and to have enough talks to make up a day-long session.

The Carolinas Section had the AEG booth at the grand opening of the Nature Research Center at the North

Carolina Museum of Natural Sciences on Friday, April 20. We had an interactive exhibit with a glacier simulation and a game demonstrating relative dating of stratigraphic layers based on fossil assemblages. The UNC-CH Student Chapter did a great job of putting together the interactive displays and assisting me in manning the booth.

The mid-year meeting of the AEG Board of Directors was held in Asheville on April 28th and 29th. Please see the summary of this meeting on page 6 of this newsletter. As you will see from the summary, one of the biggest issues facing our organization is that we don't at present have enough income to cover our expenses and are therefore having to use our cash reserves to meet our financial obligations. The Board and the Executive Committee are taking actions to cut expenses and increase revenue to rectify this situation. You can do your part by renewing your membership, if you haven't already; by going on the AEG website and opting-out of receiving paper copies of AEG News; and by getting your colleagues to join AEG.

The Carolinas Section is in the final planning stage for a Shale-Gas Development and Water Issues (Fracking) Conference on August 9 and 10 in Raleigh. We direct our readers to page 22 and 23 of this newsletter, where the announcement and registration sheet are posted.

We also hope to put together a geophysics short course to be presented sometime in the fall. On the social front, I am in the process of trying to organize a section pig-pickin' in Greensboro for sometime this summer, and we may have a camping trip/field trip somewhere in the western part of the state before it gets too cold. We plan on continuing to have periodic brew pub socials at various locations throughout the state. We will continue to utilize GeoNews, AEG News, and email alerts to provide you with information on these and other opportunities to expand your knowledge and to network with your colleagues.

I would like to encourage all of you to attend the AEG national meeting in Salt Lake City on September 15-23, 2012. If you have never attended an AEG national meeting, I highly encourage it. It is a great way to network with other geoscience professionals, to participate in informative field trips, and to listen to 3 days of informative technical presentations. You can get more informa-

(Continued on page 6)



Drew Baird, P.G.
Southeast District Manager

115-B Broadus Avenue
Greenville, SC 29601

Tel: 864.240.9181 • Cell: 864.884.4346 • Fax: 864.240.9182
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Vice President

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INVITATION TO GEOSCIENCES CONGRESSIONAL VISIT DAYS

By Rick Kolb, Carolinas Section and Chair of the Advocacy Committee

The American Geosciences Institute organizes Congressional Visit Days (CVDs) twice a year in Washington, D.C.: the Science/Engineering/Technology (SET) CVDs in the spring and the Geosciences CVDs in the fall, this year on September 11 and 12, 2012. AGI co-sponsors CVDs along with other professional societies, during which attendees visit with members of Congress, congressional staff and congressional committees to communicate a message about the importance of investing in geoscience R&D and geoscience education at the federal level, and to explain their work and its value at a local, state, regional, national and/or international levels.



AEG President with North Carolina Senator Kay Hagan during the SEG CVDs April 25, 2012. (photo by Senator Hagan staffer)

This past spring, AEG President and Carolinas Section member Jenn Bauer attended the SET CVDs with AEG Chief Operating Officer Becky Roland, Strategic Planning Committee Chair Deb Green, and Garry Maurath of the Sacramento Section. Deb Green will have an article in the next edition of AEG News about that experience, which she raved about in an email to me. Brad Worley of the Carolinas Section plans to again attend the Geoscience CVDs in September. He has attended both the SET and Geoscience CVDs and will tell you what to expect and that they are well worth attending. He stresses that practicing geologists are underrepresented at the CVDs. Many of the attendees have an academic background.

North and South Carolina are not far from Washington, D.C. Are you interested in representing AEG at the CVDs this year? You would spend the first day learning about

how Congress works, the current state of the budget process, and how to conduct congressional visits. On the second day you will visit members of Congress and their staff. Practicing geologists are the ideal advocates for our profession; we see first-hand the benefits of our profession to society, and are the best advocates to transmit our message to Congress and the staffers.

In addition to the workshops and visits, participants will get to meet other geoscientists and representa-



AEG President Jennifer Bauer with her North Carolina Congressman Heath Shuler during the SEG CVDs April 25, 2012.

tives of federal science agencies. If you are interested in attending the CVDs as a representative of AEG, contact me for details, and/or go to the AGI website at www.agiweb.org/gap/events/geocvd/index.html. If you'd like first-hand information about what goes on at CVDs, send an email to Brad Worley (brad.worley@summit-engineer.com).

AEG considers participation in CVDs to an important part of advocacy, so the Advocacy Committee can provide financial assistance to cover some of your expenses to attend. For additional information, contact Rick

**Geosciences
Congressional
Visits Day**



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AEG CAROLINAS SECTION 1Q TREASURER'S REPORT

By Alex Rutledge, Section Treasurer

AEG Carolinas Section Quarterly Treasurer's Report December 31, 2011 to March 31, 2012

BALANCE As Of December 31, 2011

Checking Account	\$	2,060.93
Money Market Account	\$	17,662.67
	\$	19,723.60

INCOME

National

Section Membership Proceeds	\$	240.00
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Dinner Meetings

Concord -Dave and Buster's	\$	1,550.00
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Sponsorships

	\$	3,375.00
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Interest

Savings account	\$	2.20
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SUBTOTAL - INCOME	\$	5,167.20
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EXPENSES

Dinner Meetings

Raleigh - Sparian's	\$	2,210.78
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Concord - Dave and Buster's	\$	1,273.93
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Nametags and accessories	\$	152.98
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Other Meetings

Booth for GSA meeting in Charlotte	\$	150.00
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Educational Programs & Sponsorships

Visiting professional talks	\$	836.46
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2012 SE GSA Sponsorship	\$	500.00
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AGI - Workforce Career's Magazine	\$	394.00
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AEG 2012 Ice Breaker Sponsorship	\$	1,000.00
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GSA Annual Meeting Sponsorship	\$	500.00
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Other

Get-well flowers for Dick Shaler	\$	57.48
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Banking

Checking Fee	\$	0.08
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SUBTOTAL - EXPENSES	\$	7,075.71
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BALANCE TRANSFERS

Savings Account to Checking Account	\$	1,000.00
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BALANCE As Of March 31, 2012

Checking Account	\$	1,150.25
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Money Market Account	\$	16,664.87
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TOTAL	\$	17,815.12
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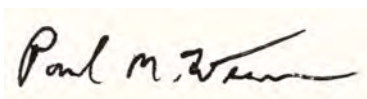
(Message from the Chair—Continued from page 3)

tion on the meeting by going to the AEG website (aegweb.org) and clicking on the annual meeting icon.

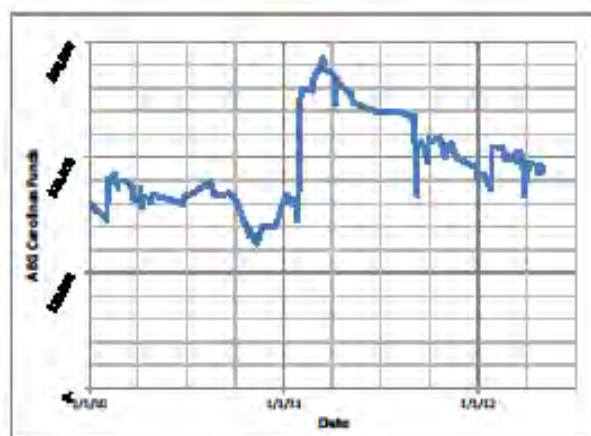
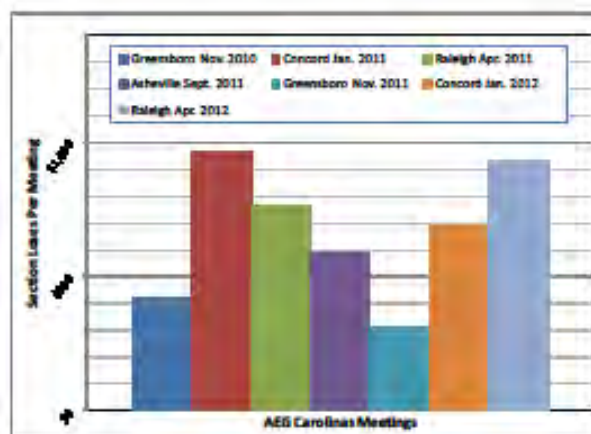
In my last "Message from the Chair," I discussed how the South Carolina legislature was considering eliminating the licensing of geologists in that state. I'm pleased to report that, for now, this issue seems to have been cast aside and appears to be sleeping until it raises its ugly head sometime in the future (this has happened before and I'm sure it will come up again).

Thank you all for your membership and support of the Carolinas Section. As always, please feel free to contact me at the email address listed below with any ideas, concerns, comments, etc. that you have for AEG and the Carolinas Section in particular.

Sincerely,



Paul M. Weaver, P.G.
AEG Carolinas Section Chair
pmweaver@bellsouth.net



2012 AEG ASSOCIATION MID-YEAR BOARD OF DIRECTORS MEETING SUMMARY

by Jennifer Bauer, AEG President

The 2012 Mid-Year Board of Directors (BOD) meeting was held in Asheville, North Carolina from April 28 – 29th at the beautiful North Carolina Arboretum at the base of the Blue Ridge Mountains. A lot of ground was covered as AEG faces challenges in these tough economic times and with large demographic shifts and changes in traditional models of information distribution.

The usual committee and society relations were covered along with Section reports, and we encourage you to talk with your Board representative (Section Chair) or a member of the Executive Council (EC) if you have any questions. However, for this article I think it's more appropriate for a broad, even thematic, discussion of the BOD meeting. In that respect, the meeting covered 3 primary topics:

- 1) evaluating the past and owning our problems;
- 2) discussing immediate strategies for addressing problems; and
- 3) taking a long and hard look at the future AEG faces in these challenging times.

The Past: Owning Our Problems

For the last several years, AEG has experienced increasing annual operational losses. Thanks to some of our most successful meetings in the Association's history, these losses have not developed into large net losses for the Association, however these trends are not sustainable for the future of AEG (I encourage you all to read the Treasurer's Report in June AEG NEWS for more details, or speak to your Board Representative). Regardless of the many reasons for this (and they were discussed in great detail), there is a problem and it is the duty of the BOD and EC to own the problem. This has been achieved, in no small part due to the leadership of AEG and the dedication of the Finance Committee. The leadership of President Bauer has paved the way for all of us to move forward in reminding us of the reasons for our passion for AEG and dedication to volunteerism as well as encouraging us all to lay everything out on the table.

Now: Addressing Our Problems

To avoid further operational losses, strategies must be implemented now. Through the foresight of the BOD, EC and Finance Committee, a cost savings contingency plan was developed when preparing the FY2012 budget. Potential budget cuts and savings identified in the contingency plan are being enacted now with planned cuts

(Continued on page 10)



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UNBALANCING N.C.'S ENVIRONMENTAL REGULATION;

By Stephen T. Smith, Chair, N. C. Environmental Management Commission

UNBALANCING N.C.'S ENVIRONMENTAL REGULATION

By Stephen T. Smith

Published in: Other Views of the Raleigh News & Observer. Reprinted with permission.

Did we in North Carolina just luck out on the clean water and clean air we enjoy? How did that happen? How did the 11th-most populous state in the nation, a state with more than 9.5 million people, a state with high-tech centers, with industry, with farms and forests, a state with approximately 9 million hogs and almost 800 million chickens and turkeys, a state with great mountains and coasts, great rivers and lakes – how did that state manage to be on the Forbes list as the third-most business-friendly state in the country and have clean air and clean water at the same time?

It is no wonder North Carolina is known far and wide as a great place to live and work. Are we just lucky, or is this an example of that old cliché, “The harder we work the luckier we get?” This did not happen by accident. It is the work of many people over many years.

One part of that began almost 40 years ago when the General Assembly in its wisdom created the Environmental Management Commission (EMC) and gave it the responsibility of developing and implementing regulations to maintain our statewide balance of protecting our clean air and clean water and promoting a healthy economy.

The EMC, North Carolina’s principal statewide environmental regulatory agency, is made up of 19 citizen volunteer members, 13 of those positions being defined by the General Assembly to strike an ongoing balance among such diverse state interests as public health, industry, environmental protection, local government, agriculture and business, among others.

For decades our governors and legislative leaders have appointed EMC members who work to balance those interests, recognizing that clean air and clean water in North Carolina are good for business, good for North Carolina’s economy, good for public health and good for recreation.

Senate Bill 851, the Boards & Commissions Efficiency Act of 2012, under consideration by the state Senate, brings that decades-long balancing act to a jarring halt, leaving the EMC favoring regulated interests and leaving environmental and public health interests at peril.

By state statute the EMC includes a member experienced in public health issues, a member experienced in fish and wildlife conservation, a member experienced in air pollution issues and three members interested in water and air pollution control representing the public

at large (I am one of those members.)

SB 851 slashes all six of those EMC positions, eliminating seats designed for areas of environmental expertise and public interest and eliminating the balance they bring to the process. We should note that this also would eliminate the positions of the only two women on this 19-member commission.

Ironically, while SB 851 purports to make state boards and commissions more efficient by eliminating some and restructuring others, SB 820, the “fracking bill,” would create the new Energy and Mining Commission with seven of nine voting positions representing the interests of industry. The EMC, an existing commission with broad expertise and long experience in regulating water and air pollution while balancing business and industry needs, seems to be the more appropriate body to develop well-balanced rules for fracking.

What sort of North Carolina do we want for ourselves, our children and our children’s children? To what extent are we responsible for being good stewards of God’s creation? Aren’t we in North Carolina better off with a balance between the interests of business and industry and protecting the quality of our water and air?

Members of the General Assembly should leave alone a process that has worked so well for so long at making North Carolina a business-friendly state while protecting our precious natural resources. They should leave the Environmental Management Commission intact and as currently balanced.

If enough people become aware of the impact of SB 851, and if enough people speak up for maintaining our decades-long balance of protecting our air and water quality and promoting our business interests, then maybe the generations that follow us will get lucky too.

Stephen T. Smith is chair of the state’s Environmental Management Commission. This article was published with permission.



Gill Editing Online

Jane H. Gill-Shaler, P.G. (NC and CA)
Cell 336 687 6144 JaneHGill@aol.com

TWO CAROLINAS SECTION BREW PUB SOCIALS FOR SUMMER 2012

By Rick Kolb


So far, the Carolinas Section of AEG has held Brewpub Socials at the Boylan Bridge Brewpub in Raleigh, the Bull City Burger and Brewery in Durham, the Foothills Brewery in Winston-Salem, and the South Bar of Pack's Tavern in Asheville. We are back to Raleigh for nos. 5 and 6. On Thursday, July 19 we will convene at the Big Boss Brewery at 1249-A Wicker Drive in Raleigh. It is located between Atlantic Avenue and Capital Boulevard, just inside the Beltline. This brewery doesn't sell food, but the owner has told us that they have food trucks there every day. Check out their website at www.bigbossbrewing.com. Here's part of what their website says about the place:

Big Boss Brewing Company was started in 2006 and shipped its first beer in the 2nd quarter of 2007 in the Triangle area of North Carolina. It was formed as a collaboration between Geoff Lamb, a UNC graduate, who returned to North Carolina in 2006 to join forces with Brewmaster Brad Wynn, who has 12+ years of brewing experience including several years with Victory, Wild Goose and Native Brewing

Company.

In August, we'll head to the exurbs of southern Wake County and visit the Aviator Taphouse of the Aviator Brewing Company at 600 E. Broad Street in Fuquay-Varina. This brewpub has a food menu, a deck out back, and a patio out front, so seating will be al fresco. Their website is at www.aviatorbrew.com. Here is a comment from their website:

Aviator Tap House opened September 2009 to provide brewery fresh beer to Fuquay-Varina and the surrounding area! We have the state-of-the-art micromatic draft-beer system with glycol cooling in the beer lines. Our cooler is optimally located and serves all the beer at a perfect draft temperature of 47°F. Serving beer at this temperature allows your taste buds to explore all the different flavors we create in the beer. The building is the old Varina train depot. The history of the building can be traced back to 1903. The building used to be located right on the tracks behind the building. It has moved from its original location...but not too far away. The lower left side of the building used to be the telegraph office for the town. Today the historic Varina train depot houses an African mahogany bar that spans 38 feet. This is a true beer-drinkers heaven with lots of wood and hearty plank floors. You owe it to yourself to spend some time consuming a fresh-brewed beer and bathe in the history of Varina at Aviator Tap House.



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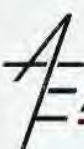
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(Mid-Year Association BOD Meeting Summary, Continued from page 7)
designed to cause the least amount of impact to our member services. Future budgeting will account for the recent membership trend of the Association and the overall economy of our industry. Many of these budget cuts and savings come through the generosity of our leadership and the companies they work for.

As we've all heard elsewhere, budget cuts alone can't solve things. Many of our operations have already been trimmed about as far as they can be and any additional cuts will result in impacts to member services. To avoid an impact to member services, revenue must also be generated. The primary ways AEG can generate large amounts of revenue at this time are through membership and our Annual Meeting.

Membership for full members is down. While our student membership is way up, this has not yet translated into more full members, and full members generate AEG's revenue. I ask each and every one of you to consider what you can do to increase our membership now. Do you know someone who hasn't renewed yet? Do you have a colleague down the hall, or client across the street, or across the country who is not a member, but could be? Do you see faces at meetings that you know belong to non-members? Ask them to join. Tell them what you love about AEG. Consider volunteering as a Membership Chair for your section or joining any of our Operational Committees that support various membership goals.

Are you excited about the upcoming Salt Lake City meeting? Take some time to look through the insert in the June issue of the AEG NEWS and information posted on the website (www.aegweb.org) – it's going to be a great meeting. And we need each and every one of you to attend, as well as your colleagues. There is not a more significant, not to mention fun, way to improve AEG's finances than supporting the Annual Meeting. I hope to see you all there.

The Future: Assessing Our Needs

We all know times are changing. The Baby Boomer generation is facing retirement (or already there) and we have more student members than ever, but traditional funding sources everywhere are disappearing, information that was once only available from a distinct source at a price is now freely available on-line, data and com-



Dinner in Asheville, NC with members of the Board of Directors 4/27/2012

munication are moving from paper to electronic, sustainability is the new buzzword, and the reasons we joined AEG appear to stand in stark contrast to our student members and the hundred thousand plus practicing geoscientists who haven't joined AEG. Statistics from the American Geosciences Institute clearly point to future growth in our industry, yet membership decline seems to be the norm for professional societies. The disconnect is clear, and something must be done about it.

As geologists we all understand the consequences of a failure to evolve. AEG follows a business model that is essentially over 100-years old. We face the strong possibility of becoming the equivalent of a buggy-manufacturer complaining about the invention of the automobile. AEG's COO Becky Roland, our Strategic Planning Committee (SPC) Chair Deb Green and SPC member Paul Hale have presented a plan for conducting a Needs Assessment to the BOD. With past SPC efforts, we feel that we have a pretty good idea about the needs of our current active members, however with a potential market-share of greater than 100,000, we have relatively little understanding of the needs of our potential members. With our professional membership in decline, the BOD feels that it is time that we start to understand those needs and has directed us to move forward with exploring strategies for assessing those needs. Based on the Board's direction the details of the Needs Assessment will be further evaluated by the EC and SPC.

As geologists, we often see the long-view of things and can be derisive of short-term-only solutions. The direction of the BOD to look toward the long-view gives me hope.

What Can We Do?

The truth is that our finest moments are most likely to occur when we are feeling deeply uncomfortable, unhappy, or unfulfilled. For it is only in such moments, propelled by our discomfort, that we are likely to step out

(Continued on page 11)



Korey Drew
Account Executive

Pace Analytical®
Pace Analytical Services, Inc.
9800 Kinsey Avenue, Suite 100
Huntersville, NC 28078
Phone: 704.875.9092
Mobile: 704.315.8068
Fax: 704.875.9091
E-mail: korey.drew@pacelabs.com



Board photo at Arboretum 4-29-19 - This is the AEG Board of Directors posing for a picture at the NC Arboretum in Asheville, NC, where the Mid-year Board meeting was held.

*(Mid-Year BOD Meeting Summary, Continued from page 10)
of our ruts and start searching for different ways or truer
answers. -M. Scott Peck*

*Everything you ever wanted is one step outside your com-
fort zone. -Original Source Unknown*

Each member of AEG can make an immediate impact, both to save current revenue and generate more. Go to the AEG Website (www.aegweb.org), log in and look at your member account. Now opt-out of receiving the NEWS as a print copy and opt-in to electronic only. This is an immediate savings to the Association and promotes our goals of sustainability. Next, encourage any potential members you know to join AEG. Share your passion for the organization. Ask your company and those that provide services to you to become a Corporate Sponsor or advertiser in the AEG NEWS and website. And finally, join us in Salt Lake City this September – it's going to be a fabulous meeting.

Change can be uncertain, stressful, exciting and a lot of work. If you've made it this far into this article, you likely share my passion and love for AEG. We would love

your help – contact anyone on the EC, your local Section Chair, a committee chair or technical working group chair. There are dozens of ways that your involvement can help AEG as it moves toward its future.

We want and need your help. I and the rest of the leadership in AEG have a great hope for the future of AEG and we look forward to sharing it with each of you.



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GEORAMBLINGS

By Dr. Charles W. Welby
May 25, 2012

The idea for this edition of GEORAMBLINGS arose one afternoon when I happened to be straightening up some notes and files on my desk. I turned up a hastily written note from a trip made some years ago to the museum at Ghost Ranch in New Mexico. My wife and I had taken a granddaughter to a meeting in Albuquerque and had driven up to Ghost Ranch to visit the museum where a display allowed visitors to dig a bit around some vertebrate fossils that had been brought in to the museum for exhibit and the development of knowledge by visitors in not only the fossils found on the Ghost Ranch property but also of some skill at cleaning a fossil bone.

The note cited a book by Charles L. Camp, a Director of the Museum of Vertebrate Paleontology at the University of California at Berkeley in the 1940 to 1960 period. The book, *Earth Song, A Prologue to History*, was published by the University of California Press in 1952, before the Plate Tectonics revolution set in. The book has been described as a “poetic interpretation of the geology of western North America.” Examining the illustrations in the book of the animals that occupied various parts of California at various times, I began to think of other books and articles that discuss how previous civilizations and cultures interpreted what we today call fossil vertebrates.

The first thing that happened to come to mind was the word “Dragon.” For there are many stories and myths about dragons found in various cultures. Room only permits some few comments about dragons and related creatures of literature and belief. It happened that what wandered into my thoughts out of the gray mists of time is experiences from long ago, childhood stories and readings in which dragons were a focal point. Trips to a Wake County Public Library led to a number of volumes on dragons, the types, where they might be found, and some reviews of the concept of dragons in history. A couple of brief searches turned up publications describing and discussing almost as many dragon species as there are dogs or cats. One particularly interesting feature of these

discussions is the art work that has gone into illustrating individual types of dragons.

One of my first encounters with a dragon was perhaps in a story, “Billy Beg and the Bull,” a story that was found in a book which my Mother had for her childhood teaching experience in the early years of the 20th century. The point of the story is that the bull has magic powers of soaring through the air, and eventually he and Billy clash with a dragon somewhere in the north of England with the dragon coming out on the losing end of the encounter. Then dragons appeared in the King Arthur stories read under the covers at night with a flashlight.

The utilization of dragon symbols on the tunics of competing clans or groups during the time of King Arthur speaks to the discovery of the fossil bones of large mammals and of dinosaurs which were interpreted as remains of individuals of once giant races of humans or humanoids which possessed super-human strength and skills. So evolved the stories and myths of the cultures from which they arose and the cultural bonding to the strength and skills of the dragons and giants to the cultures. And so the beat goes on today with naming of some of our most popular athletic teams; e.g. Carolina Panthers, Detroit Tigers, San Francisco Giants (nee New York Giants), etc.

As the biological sciences and associated techniques have evolved, there are those who have explored the genetics and DNA of fossils and especially of dinosaurs. Among those who have contributed to this understanding of the possibility of original proteins in fossil bones is Mary Schweitzer, who is a faculty member in the Department of Marine, Earth, and Atmospheric Sciences and North Carolina State University. Work in this field has indicated that the proteins found in T. Rex show a significant relationship to the proteins found in chickens – hardly your backyard dragon, and that proteins from mammoths show a significant relationship to African elephants – perhaps some dragons here.

The book, *The First Fossil Hunters*, by Adrenne Mayor (published by Princeton University Press, with paper back issue in 2011) is a “discussion and history of dinosaurs, mammoths, and myth in the Greek and Roman world, tracing the history of human curiosity about fossils.” It seems that there were exhibits of the fossils in Asia Minor to which Roman emperors traveled to and marvel at. Also, enterprising individuals and organizations utilized bones and skulls to make exhibits of unworldly animals, much the manner of contrived exhibits at a travelling carnival or circus of today.

Dragon stories exist not only in the western civilizations but also in Asia. The “existence” of dragons is well illustrated in many pieces of art in Asia and in stories about the role dragons have played in the culture and history of India and China. One story related to water resources from China seems appropriate at this time. The story relates the action of four dragon kings in response to

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GeoRamblings (Continued from page 12)
a drought in China.

Four dragons living in China became concerned that the Chinese people were starving because of the drought and pleaded with the “Jade Emperor” residing in the sky for help to overcome the drought. They decided to scoop water from the Eastern Sea into the sky without permission of the “Jade Emperor.” Out of their individual and collective concern for the people of China the dragons transformed themselves into four rivers flowing out of four mountains. Geographically from north to south the Black Dragon became the Heilong Jian, the Yellow Dragon became the Yellow River, the Long Dragon became the Yangtze River, and the Pearl Dragon became the Pearl River. A question that might be asked is “Which dragons do we need to face in dealing with our current water supply problems?”

So one can find stories of kind and thoughtful dragons as well as those that reflect them as frightful and vile beasts as they are often portrayed. One can wonder what dragons formed the Mississippi River and its tributaries and do they still play a role in its management and growth of the Mississippi Delta.

Going back to the title of Camp’s book, “Earth Song,” one, with a little use of imagination, can see that geologic history might be in places a Viennese waltz, a quiet tune of remembrance, and in another place be best characterized by “The Ride of the Valkyrie” from Wagner’s Opera The Valkyrie.

Oh, yes, did you see the Reuters story about the methane from dragons (aka dinosaurs) providing enough methane to cause the earth’s atmosphere to warm up? Just the results of a little computer study.

Q.E.D.

Charles W. Welby

Dr. Charles W. Welby is a former Section Chair for AEG Carolinas and a regular contributor to this newsletter. He may be reached at cww_ral@hotmail.com.

AEG CAROLINAS SUMMER BOARD MEETING MINUTES

by Briget Doyle, AEG Carolinas Secretary

MINUTES FOR JUNE 9, 2012 AEG CAROLINAS SECTION BOARD MEETING

Schnabel Engineering Conference Room – 10:00 AM to 2:00 PM

11-A Oak Branch Drive, Greensboro, NC

Called to order: 10:15 am

Adjourned: 1:58 pm

Present: Paul Weaver, Rick Kolb, Alex Rutledge, Gary Rogers, Jane Gill-Shaler, Briget Doyle

1. Carolinas Section Treasurer’s Report – Alex

(handouts of latest statement and graphs showing trends of funds. See page 6 for Treasurer’s report for First Quarter.)

Discuss trends in Section funds.

Comments: Funds have been dropping since Charleston meeting, but overall the section is doing well.

Discuss reasons for diminishing funds.

Comments: Reduction in membership and losses at section meetings are an issue. Raleigh and Concord are the meetings that lose the most money, due to high venue costs and the large number of students that attend. However, sponsorships cover much of the meeting costs, but sponsor renewals are dropping. Rick has suggested raising costs for non-members to \$35 for meetings (currently \$30). Last raise did not seem to impact attendance, but did not impact revenue either.

Do we want to develop a Section budget?

Comments: Yes

If so, can Alex develop the budget for approval?

Comments: Alex is willing to draft a budget based on past activity.

Discuss what we currently charge to attend meetings and where we would like to go?

Comments: Board agrees to keep meeting attendance

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(AEG Carolinas BOD Meeting Minutes: Continued from page 13)
 fees at current levels for now.

2. Shale-Gas Conference - Rick

Where do we currently stand in regards to conference finalization?

Comments: Conference is on and being finalized.

Comments: Announcement to be included in Summer GeoNews (see page 22).

Do we have the AEG people on board yet that we will need to put on the conference? If not, how are we going to get the needed people to commit?

Comments: Will need member assistance for setup and as session moderators.

Is there anything that you need from the Board at this time in regards to the conference?

Comments: No.

3. Section meetings for the rest of this year

We will have the Greensboro meeting at Natty Greene's in the later part of October as usual.

Does anyone have a speaker in mind that Paul can contact?

Comments: Paul has someone in mind that he will contact. Paul will organize this meeting

Where do we stand in regards to organizing a meeting for November in Greenville/Spartanburg?

Can Briget coordinate with the other individuals down there to put this together?

Comments: Rick will forward contact info to Briget and she will work on venue and speaker.

Do we want to have a meeting in Asheville in September?

Comments: Yes.

If so, who will organize it?

Comments: Paul will get contact names from Jenn and see if they are willing to organize the meeting.

4. Social outings for this year

Paul is trying to finalize a place to hold a pig pickin' in Greensboro in July or early August.

Paul will get Adam to help put event together once a place is secured.

We will not be able to supply beer, so we'll make it a BYOB (Paul is trying to find a private venue so we can have beer).

Comments: If anyone has ideas of private venues where members can BYOB, please forward to Paul.

Do we want to have a camping trip this year?

Comments: Pisgah Forest has been suggested for early summer or early fall. Possibly in combination with a field trip. Gary suggested rafting trip, and Rick spoke to Tyler Clark at the GSA meeting, and he had an idea. Rick gave Brad Tyler's contact info. Rick sent Tyler an email asking for details (see page 32).

If so, when?

Comments: Early summer or early fall to avoid heat.

Comments: Paul will make some contacts to see if he can find someone willing to organize the camping trip.

Does Adam have any other ideas for socials this year? (a Bulls game? Or whatever Greensboro's minor league team is?)

Comments: Adam says he can easily organize a block of tickets to a Bulls game

Comments: Problem with games is a block of tickets has to be purchased in advance, but we lost money last time because not enough people came to offset the ticket prices.

5. Section field trip

Brad agreed to take over the chairmanship of the field trip committee.

Comments: Brad is now too busy to be able to continue in that capacity.

We have now gone two years without a section field trip and need to make this happen.

Comments: Overnight or one day trip. Possibly in the mountains or in the Raleigh area. May be combined with camping trip.

Comments: Rick said that he will make some contacts about a possible joint field trip with another organization. Paul will make some contacts to try and find someone to take over the Field Trip Committee Chair position.

6. GSA National meeting November 4-7

(Continued on page 15)



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(AEG Carolinas BOD Meeting Minutes: Continued from page 14)

The Carolinas Section is putting on a symposium entitled “Practical Applications of Environmental and Engineering Geology.”

Paul is the convener, and needs help in soliciting abstracts for the section; they must be submitted by August 14.

Comments: The section would like this to be a full day session, but needs several more talks to fill in the whole day. If someone knows of a potential presenter, contact Paul.

Comments: Submission is to GSA, but Paul must also be notified so the talk can be included in the proper session.

We will need volunteers to attend to the AEG booth at the meeting.

Comments: Briget will be present on Tuesday at least and can work the booth. Rick expects to be there for at least one of the days.

We have offered to sponsor the meeting for \$500

7. AEG Annual Meeting

We are sponsoring the Ice Breaker Reception at the \$1,000 level.

8. Who from our section is planning on attending?

Comments: Paul, Rick, Gary (maybe), Jane, Alex, Briget

9. Annual membership renewals

Comments: Rick, Paul, Fred, and HQ have made some contacts. We were in a hold pattern May through the first part of June due to the changeover for the AEG website. Once the new website server is on-line, we will be able to get membership updates pretty much in real time. Website is still not online, but hopefully will be soon. We need to start making the new round of membership renewal calls starting now.

10. Scholarships from Carolinas Section

Comments: To run the scholarship through the AEG Foundation, the section would need to set up an endowment in a large enough amount that the interest from the endowment would fund the scholarships without using the endowment principle. For the scholarships to be funded at the level the section would like, the endowment would likely have to be between \$15,000 and \$20,000. This is not feasible at this time. The Board voted unanimously to table the Foundation administered scholarships for the present time.

11. AEG National

By now, you have all seen the summary of the mid-year B.O.D. meeting in Asheville (Ed: see page 6 in this issue). National is spending more than it takes in due, primarily, to lower than expected membership renewals and higher than anticipated publishing costs. Steps are being taken to curb spending

and increase income.

Understand that the annual meeting income is not considered part of the budget but as extra income to build up the Treasurer’s Reserve and for special needs. Therefore, we would really be in the hole if the last few annual meetings had not done as well as they did.

The best way for us to help National is by renewing our memberships on time, getting others to renew, signing up new members, and selecting to receive AEG News electronically (once the website is back up).

12. Geophysical One-Day Short Course

We are working with Matt Howe of the Southeastern Section to try and set up a one-day short course on geophysics similar to the course that was offered at the Charleston annual meeting

The idea is to have a day in Atlanta and another in either Raleigh or Charlotte

A survey was sent out to the membership of both sections and results tallied.

Comments: 97 responded, Raleigh 1st choice, Atlanta 2nd choice. Most people preferred a weekday for the course, Friday is the first choice, Tuesday second

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AEG•2012—55th ANNUAL MEETING—THE HILTON SALT LAKE CITY CENTER, SALT LAKE CITY, UTAH, September 17-22

The AEG Intermountain Section warmly invites you to join us in Salt Lake City, the heart of the Intermountain West, for the 55th annual meeting of the Association of Environmental & Engineering Geologists. Salt Lake City, located in a remarkably diverse and active geologic setting, is in the eastern-most Basin and Range physiographic province at the margin with the Rocky Mountain province; the deep canyons of the Colorado Plateau are just a stone throw to the south.

The Wasatch Fault, one of the world's longest Holocene-age normal faults, is situated at the base of the spectacular Wasatch Mountains, along the east side of Salt Lake City. The Salt Lake Valley is ringed by shorelines of Pleistocene Lake Bonneville (initially identified, studied, and named by G.K. Gilbert in the 1890s). The glaciated peaks, moraines, and valleys of the Wasatch Range are only 20 minutes from downtown Salt Lake City. The AEG Intermountain Section is excited to host the 55th annual AEG meeting and seeing one-and-all, please join us.

About Salt Lake City ...

Salt Lake City is a vibrant urban center with unparalleled access to alpine and desert outdoor recreation. Downtown Salt Lake City is home to dozens of great restaurants and bars, numerous world-class brew pubs, and two major shopping malls (including the beautiful City Creek Center, newly opened in March 2012). All of this is in a pedestrian-friendly setting that is served by a "Free Zone" light rail line.

The magnificent alpine recreation centers of Park City, Alta, and Snowbird are easily accessed by a 30-minute drive from downtown. Southern Utah's breathtaking national parks, including Arches, Canyonlands, Capitol Reef, Bryce Canyon, and Zion, are about 4½ hours away by car.

About The Hilton Salt Lake City Center ...

The Hilton Salt Lake City Center is in the nexus of downtown, within a few minutes' walk of the free-zone light rail line, restaurants, bars, shopping, and other attrac-

tions. The hotel is beautifully decorated, with luxurious rooms, two restaurants, a pool, fitness room, and a full-service spa.

Possible Technical Sessions

- Environmental and engineering geology of mining
- Water resources
- Landslide investigation and remediation
- Debris-flow hazards
- Remote sensing
- GIS technologies
- Engineering geology and dams
- Unconsolidated aquifers and earth fissures
- Rock mechanics
- Earthquake hazards
- Paleoseismology and fault investigations
- Applications of geophysics
- Geologic-hazards mapping
- Status of the profession (licensure, standards of practice, report review, ASBOG)

Proposed Symposia

- Earthquake Hazards in Utah/Basin and Range
- Great Basin faulting/fault-rupture hazard mitigation
- Central and Eastern U.S. Earthquake Hazards in the Year of the New Madrid Earthquakes' Bicentennial
- Capturing Uncertainty and Variability in Geology: Site Conditions and Natural Processes
- How Climate Change will Affect our Profession
- Dam Scour
- LiDAR Applications to Engineering Geology
- Ground Water Monitoring around Solid Waste Facilities
- Innovative Geotechnical Design Consideration for Solid Waste Facilities
- Slope Stability in Mining

Field Trips ...

Engineering Geology of the Kennecott (Rio Tinto) Open-Pit Mine: This field trip will investigate a variety of the engineering, environmental, and geologic aspects of the largest open-pit copper mine in the world. The Kennecott open-pit mine, in operation since the 1890's, produces about 3 million tons of copper, 5 million ounces of gold, 4 million ounces of silver, 30 million pounds of molybdenite, and 1 million tons of sulfuric acid

(Continued on page 17)



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(Letters from Randy—Continued from page 16)

each year. The mine is more than 2.75 miles wide and 0.75 miles deep. We will visit the historical museum at the rim of the open-pit, meet with mine engineers and geologists, enter the pit (lunch will take place in the bottom of the pit), learn about the geology of the ore deposit, history of mining activities, rock removal, ore control, slope stability, ground- and surface-water control, mine reclamation, mine sustainability, and blasting techniques (hopefully we will be present during detonation of a pit-blast).

Engineering Geology and Geologic Hazards of the Wasatch Front: The Wasatch Front in the Salt Lake City area is characterized by the Holocene-age Wasatch and West Valley fault zones, canyons with high debris flow potential, active urban landslides, and textbook examples of Quaternary geologic, geomorphic, and alpine glacial features. On this trip we will visit fault scarps of the Wasatch fault zone developed in late Quaternary glacial moraines, lake sediments, and alluvial fans. We will also visit an active, creeping landslide that is slowly tearing apart a neighborhood, and the sites of other historic landslides (including the Thistle slide, which caused about \$400 million in damage in 1983).

Alpine Hydrogeology of the Park City area: Owing to the spectacular mountain setting and access to alpine recreation, the Park City area (Synderville basin) has undergone explosive residential and commercial growth over the past few decades. Due to a relative lack of surface water resources in the area, finding adequate groundwater to support the area is a continuing challenge. Since there are limited alluvial aquifers in the area, most of the recently-developed groundwater has come from bedrock aquifers. This field trip will explore the regional bedrock aquifer system and investigate means of assessing aquifer potential in alpine settings.

Antelope Island: evidence of coastal processes of Great Salt Lake and Lake Bonneville: This field trip will review the history of climate change of the past 35,000 years, as documented by shoreline evidence of Lake Bonneville and Great Salt Lake. Specifically, we will examine landforms, materials, and processes that are (a) active along the shoreline of 2012; (b) associated with the highstand flooding of the 1980s; and (c) along the Gilbert level of Lake Bonneville/Great Salt Lake of about 12,000 b.p. Antelope Island has beautiful exposures of contrasting wave environments because, as an island, its shores are exposed to winds from diverse directions, and because, as a State Park, the evidence is well-preserved. Wear sensible shoes. Weather permitting, this field trip will include a couple-hour, not-challenging hike.

Guest Tours ...

Heber Valley Railroad - Ride and picnic on this historic railroad, along the beautiful eastern side of the spectacular Wasatch Range.

Utah Olympic Park and Park City – Visit the site of 2002 Olympic bobsled and Nordic ski jumping, and cur-

rent training center for U.S. Olympic teams, then continue to the historic mining town of Park City for shopping.

Red Butte Botanical Garden and Utah Museum of Natural History – The garden is a botanical wonder, and the new museum is an architectural and educational masterpiece.

Great Salt Lake and Antelope Island – Visit beautiful Antelope Island in the middle of Utah's inland sea to dip your feet in the famously salty water and to view wild bison and spectacular vistas of the Wasatch Range.

Special Event ...

Snowbird Ski and Summer Resort. Ride by bus from downtown Salt Lake City to Snowbird resort in spectacular U-shaped glacial Little Cottonwood Canyon. En route we will stop at the G.K. Gilbert Memorial Geologic Viewing Park to look at textbook examples of igneous intrusions, fault scarps, glacial moraines, and glacial geomorphology. At Snowbird we will ride the aerial tram 2,900 feet up to the top of 11,000 foot Hidden Peak. After the tram ride we will return to the Snowbird base for socializing, drinks, and dinner.



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EDUCATION SECTION

SUMMARY OF 2012 VISITING PROFESSIONAL PRESENTATIONS

By Rick Kolb, Section Student Liaison

Once again AEG Carolinas members visited geology departments at colleges in North and South Carolina during the spring semester to make presentations on careers in geology. We try to have presentations by an environmental geologist, an engineering geologist, and a geologist from the public sector to give students a pretty good overview of what jobs are out there in the consulting world and public sector. This year we had several geologists present for the first time. We thank them, as well as the repeat presenters, for volunteering their time to educate students of geology on career opportunities. Without volunteers, these presentations, and all that AEG does to support our profession, would not be possible. The following table summarizes this year's visits.

Brian Bellis of Withers & Ravenel was among the group of first-time presenters. Afterwards, he emailed me these comments:

Just wanted to pass along some positive thoughts regarding my experience at AEG night at UNCW this past Monday. Eighteen geology/geomorphology students and faculty member Todd LaMaskin attended the event. Nathan Mohs and I each gave about 30-minute presentations focused on our backgrounds in engineering geology and the types of work that we do. I was very pleased by the attentiveness of the students and was happy to answer the many questions they had. After the presentations, many of the students had follow-up questions regarding their specific interests and job prospects/advice. I believe that I was able to point most of the students towards resources outside of the University that could more fully answer their questions. Overall, this was a very rewarding experience for me and I'm glad that AEG provides this type of outreach to the generation of geologists that will follow us. Please do not hesitate to contact me if you need presenters for future events like this.

Jack Sherrill of Sherrill Environmental was another first-time presenter. Afterwards, he emailed me these comments:

The meeting went well. The place was packed at 5:00, had to bring in chairs. Did not do a count but it

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EDUCATION SECTION

(Continued from page 18)

looked like 35 to 40 interested students. Brad [Worley]'s presentation went well and my talk was met with interest. Some wanted to come work for me. They ordered 10 pizzas and crushed eight. All in all, fun, the kids and everybody treat you like a rock star.

Brian's and Jack's comments are similar to the many comments I've heard from other presenters in our section's six years of making these presentations. I have found that the presenters get as much out of the presentations as do the students. Consider trying this out once and see for yourself. We are always looking for new presenters who can bring their varied backgrounds to the students to show them the wide range of work that we do as practicing geologists.

In the past we have presented at NC State annually, but this year their geology club had several geologists speak at their monthly meetings on careers, so we skipped. East Tennessee State was too busy with Southeast GSA and other activities this spring, and asked us to come in the fall.

Our student/faculty audiences range in size from a dozen at the smaller schools to 40 at the larger schools. As we'd done in the past, we bought pizzas and soft drinks for consuming during our presentations, which generally started on Thursday afternoon between 5:00 and 6:00, and we finished typically before 8:00.

Partly as a result of our visits to these schools, the Carolinas Section now has over 100 student members. Last year AEG decided to allow students to join AEG for free, and this policy has resulted in a significant increase in student members. Through the generous support of our section's sponsors, we continue to pay for student dinners at our quarterly section meetings.

If you attended college in North or South Carolina, we invite and encourage you to participate in our presentations to colleges, especially your alma mater. Next year we hope to add Clemson University to our list of schools; alumni of Clemson are welcome to go back for a visit and talk about your career as a geologist. Contact Rick Kolb at rkolb0915@aol.com if you are interested in participating in this program.

School	Presenters
Appalachian State University	Carin Kromm and Mark Brown
East Carolina University	Brad Worley and Jack Sherrill
Furman University	Tom Lammons and Paul Johnstone
Guilford College	Rachel Kirkman
UNC-Chapel Hill	Paul Weaver, Josh Freeman, Leo Moretz, Rick Kolb
UNC-Charlotte	Matt Flinchum, Paul Weaver, Rick Kolb
UNC-Wilmington	Brian Bellis, Nathan Mohs
Wake Technical Community College	Brian Smith, Rick Kolb
Western Carolina University	Jenn Bauer, Adam Tripp



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www.eosremediation.com



Judd Mahan, PG
Project Manager

1560 Pisgah Drive
Canton, North Carolina 28716
www.mountainenvironmental.com
jmahan@mountainenvironmental.com

828-648-5556
toll free: 800-261-0031
fax: 828-648-1566
cell: 828-458-2240

EDUCATION SECTION

AEG AND REG REVIEW, INC. ANNOUNCE SUMMER 2012 REVIEW COURSES

The Association of Environmental & Engineering Geologists (AEG) is pleased to announce the Summer, 2012 series of review courses for the ASBOG® geology licensing exam taught by REG REVIEW, Inc. AEG and REG REVIEW, Inc. have partnered to provide these courses since 1992. In the Summer of 2012, nine one-day review courses for the ASBOG® licensing exam will be offered regionally throughout the U.S. These nine courses will be spread out into the following regions, the West Coast including a course in both Northern and Southern California (the CA courses are now presented in 2 sections - 1 day for the ASBOG® and part of a day for the CA Supplemental), the East Coast, the Central U.S. Region. Specific locations are listed below.

REG REVIEW's approach is to give you the focus and direction needed to appropriately study for the exams. The emphasis of the topics in the course is based on the emphasis on the exams. We cover the approach of

the exam and highlight the types of information you would need for exam level questions. For specific information on our course content and study materials please visit our website at regreview.com.

REG REVIEW, Inc students typically have a pass rate that is 20% to 25% higher than the National average. Our success rate has ranged from 85% to 99% on both exams since we began teaching to the ASBOG® exam in 2000. The National pass rate during the same time was 55% to 63% for the FG and 61% to 80% for the PG. With the current state of the economy, can you afford to not pass the exam the first time you take it?

Who should take this class? Anyone who feels they need help getting the focus and direction needed to be able to streamline their studying process to adequately address the topics covered by the exam.

Please note: The registration office personnel will be rafting the Grand Canyon on a once in a lifetime opportunity from July 28th through August 16th. The preregistration deadline is July 27th so all registrations prior to this will be processed prior to departure and all course materials will thus be received before the course for all preregistrants. If you register after the 27th for

(Continued on page 21)



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Innovations in Water Monitoring

EDUCATION SECTION

(Continued from page 20)

courses in the Central US we recommend adding expedited shipping so you receive the materials before the course.

Course dates and locations are as follows: (For more specific location information please go to our website at <http://regreview.com/2012summercourselocations.html>)

Western US Courses - Summer, 2012

Portland, OR- August 23, 2012, 8am to 4pm
 Oakland, CA - August 24, 2012, 8am to 4pm (ASBOG Portion)
 August 25, 2012, 8am to 10:30am (California Supplemental Portion)
 Santa Ana, CA - August 25, 2012, 6pm to 8:30pm (California Supplemental Portion)
 August 26, 2012, 8am to 4pm (ASBOG Portion)

Central US Courses - Summer, 2012

Chicago, IL- August 18, 2012, 8am to 4pm
 Minneapolis, MN - August 19, 2012, 8am to 4pm
 Austin, TX - August 21, 2012, 8am to 4pm
 Denver, CO - September 2, 2012, 8am to 4pm

Eastern US Courses - Summer, 2012

Philadelphia, PA- August 29, 2012, 8am to 4pm
 Orlando, FL - August 30, 2012, 8am to 4pm

California Combined Courses are \$635 for AEG members, \$650 for nonmembers.

ASBOG® Courses are \$480 for AEG members, \$495 for nonmembers.

Courses for the California Supplemental Exam only are \$195 for AEG members, \$210 for nonmembers

The preregistration deadline for the Summer,

2012 courses is a postmark or online registration date of July 27, 2012 for all courses.

Registrations are still accepted after this preregistration deadline but there is an additional fee of \$50.

To register online: [http://](http://regreview.com/2012summeronlineregistration.html)

regreview.com/2012summeronlineregistration.html

To register via fax or mail: [http://](http://regreview.com/2012summerregistrationform.pdf)

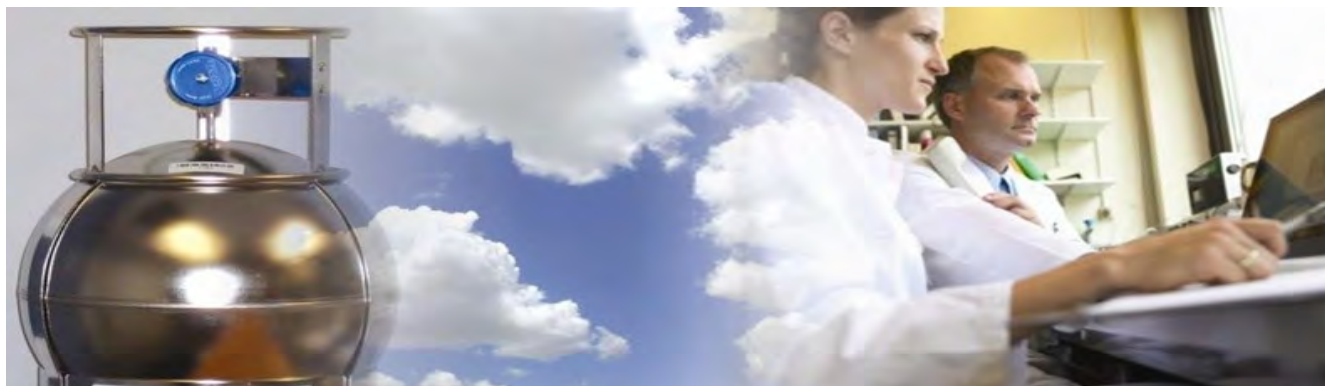
regreview.com/2012summerregistrationform.pdf

Included in the course price are the set of Study Manuals pertinent to the exams you are taking and a packet of course notes (70+/- pages) that we have developed to present material that is new to the exams and to address important topics. The course notes are only available to our students. Discounts for the course are available to those who have purchased the books already.

REG REVIEW, Inc. has been teaching these courses in California since 1985. In March 2000, we began to direct our teaching towards the ASBOG® geology licensing exam. The courses are taught by Patti Sutch, CA PG 3949, CA CEG1641, and CA CHG 25, Lisa Dirth, CA PG 3951, CA CEG 1240, NC RG by ASBOG exam, and Elisabeth Ervin-Blankenheim, PA PG and past student of REG REVIEW.

Current information on study manuals, flash cards, and courses, including specific locations, may be found online on REG REVIEW, Inc's website at <http://regreview.com>. To contact REG REVIEW Inc.: e-mail - regreview@aol.com, mailing address - 1091 Mercury Dr, Lafayette, CO 80026, telephone - call Lisa Dirth in Colorado at 303-484-1203. or evenings you can call Patti Sutch in California at 916-456-4870.

Please pass this information on to any geologist that you know that might like our help for preparing for the state licensure examinations. Thanks.



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Two-day conference program in Raleigh, North Carolina

SHALE-GAS DEVELOPMENT IN NORTH CAROLINA: A REVIEW OF ECONOMIC AND ENVIRONMENTAL ISSUES

Thursday August 9th and Friday August 10th, 2012

DoubleTree by Hilton Hotel Raleigh, Brownstone – University, 1707 Hillsborough Street, Raleigh, NC 27605

There is potential for shale-gas in geological basins in North Carolina. What can the state learn from shale-gas development that is already taking place in other parts of the US? The American Ground Water Trust and the Carolinas Section of the Association of Environmental & Engineering Geologists will convene a conference in Raleigh, NC on Thursday August 9th and Friday August 10th, 2012. The conference program will focus on the energy potential of North Carolina's Deep River Basin and potential shale-gas believed to occur in other NC sedimentary basins. The purpose of the two-day program is to provide a balanced information-exchange opportunity among the energy industry, the water industry and citizens and communities with an interest in the economic potential of shale-gas development and the long-term environmental sustainability of water sources and water-dependent ecosystems. The objective of the conference is to facilitate informed discussion to ensure that science-based policy decisions are made on energy development that will best serve the citizens of North Carolina.



American Ground Water Trust

- Communicating the environmental and economic value of groundwater
- Showcasing ground water science and technology solutions
- Increasing citizen, community and decision-maker awareness
- Facilitating stakeholder participation in water resource decisions

Conference organizers:



Association of Environmental & Engineering Geologists, Carolinas Section

- Building public appreciation for how environmental and engineering geology contribute to public safety and the protection of property
- Offering information on environmental and engineering geology useful to practitioners, scientists, students, and the public.

Registration on-line www.agwt.org

The Conference program is in development. Program details and presenter information will be posted at www.agwt.org and www.aegcarolinas.org

CONFERENCE VENUE - HOTEL INFORMATION

DoubleTree By Hilton Raleigh Brownstone University, 1707 Hillsborough Street, Raleigh, NC 27605

Free self-parking. Free wireless internet in guestrooms. Hotel is 1.3 miles from the State Capitol

There is a hotel sleeping room rate of \$94 per night if reserved before July 18th. Rate is good two days before and after the event. For reservations call 1(800) 331 7919. Reservations requested after this date will be accepted based upon availability.

Registration form below:

REGISTRATION FORM – RALEIGH, NC - SHALE-GAS CONFERENCE - 2012

Registration – 2012 program [Register online: www.agwt.org]	Two Day Aug 9 <u>and</u> Aug 10	One Day Aug 9 <u>or</u> Aug 10
YOU MUST CHECK ONE: <i>Registration includes: day 1 reception, handouts, breaks and day 1 lunch</i>	<input type="checkbox"/>	<input type="checkbox"/> OR <input type="checkbox"/>
General Registration	<input type="checkbox"/> \$275	<input type="checkbox"/> \$165
AGWT and AEG Members	<input type="checkbox"/> \$235	<input type="checkbox"/> \$145
Government Employee (County, State, Federal)	<input type="checkbox"/> \$235	<input type="checkbox"/> \$145
Full-Time Student (ID required at Registration)	<input type="checkbox"/> \$100	<input type="checkbox"/> \$ 60
CD (Presentation information from speakers mailed post event.)	<input type="checkbox"/> \$20	
Exhibit Table (You must also register to attend.)	<input type="checkbox"/> \$300	
Total for all checked boxes	\$	

PAYMENT TOTAL \$ _____ ☐ CHECK [payable: American Ground Water Trust]☐ AMEX ☐ VISA/MC ☐ PO # _____

Card # _____ Expiration Date _____

Cardholder Name _____

Registrant Name _____

Registrant E-mail _____ Registrant Phone _____

Professional Training _____ Job Title _____
(Engineer, water manager, geologist, finance, regulator, attorney, elected official etc.)

Company _____

Address _____

City _____ State _____ Zip _____

CANCELLATION POLICY

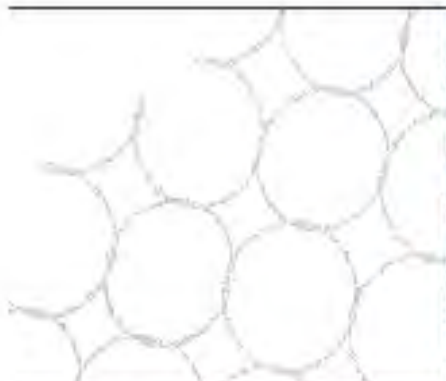
- Cancellations received in the AGWT office by 5 pm (ET) 5 days prior to the start of the event will receive a full refund less a \$25 processing fee.
- Cancellation 4 to 2 days prior to the start of the event will receive a 50% registration refund.
- Cancellations one day before the start of the event or on the day of the event are considered "No Shows." Refunds will not be made for "No Shows" (Substitutions gladly accepted).
- The AGWT will not cancel a program because of bad weather conditions. Except that, in the event of an event cancellation resulting from, (but not limited to) circumstances such as a state mandatory evacuation or a fire at the program facility, the AGWT will reschedule the event and honor

Register online: www.agwt.org

Mail to: American Ground Water Trust, 50 Pleasant Street, Concord, NH 03301

Register by phone: (800) 423-7748 (between 9:00 & 4:30 eastern) Return by fax: (603) 228-6557

For more information, contact Carolinas Section members Brian Smith at csmith118@nc.rr.com, or Rick Kolb at rkolb0915@aol.com.



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(AEG Carolinas BOD Meeting Minutes: Continued from page 15)
choice.

We are looking at holding off until possibly this fall to hold this course. Anything new on this Rick?

Comments: Matt Howe has been in the field a lot and it dropped off his radar. He will renew his attempts to set up these courses. Gary and Alex volunteered Schnabel equipment/staff if needed. Postponed due to scheduling issues with instructors. Rescheduling is being attempted.

**13. Update on sponsor renewals and newsletter editor
Jane, what is our current status on renewals?**

Comments: Missing several sponsors. Will be removed from list due to non-payment.

We need a volunteer to take over as “sponsor chair” to secure renewals and process new sponsors.

Comments: Board will search for a Section member, preferably someone in the environmental site of the profession, to take over the Sponsorship Committee Chair position.

Newsletter Editor

Comments: Jane has been newsletter editor for many years and has done an exceptional job. She is now ready to hand off this responsibility

Comments: Briget will look into possible costs of hiring a professional to do GeoNews. As it is quarterly and formatting is relatively set and straightforward, costs can hopefully be limited. Gary and Alex had a potential contact to send to Briget.

14. Posting resumes and jobs on our website – no answer on below questions from last meeting

Comments: Paul will discuss implementation directly with Brad Isles.

Comments: It was suggested that section sponsors be allowed free postings of job openings as part of their sponsorship perks, but that a minimal charge be implemented for non-sponsor postings for jobs or of resumes to cover website change charges. The Board will need to implement a procedure for receipt, review, and posting of job openings and resumes.

15. Golf Tournament

Visit us at www.kbmobilelabs.com



Todd Romero
Director of Operations

KB LABS, Inc.
25132 SW 1st Avenue
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Carin Kromm is the new president of Ground Water Professionals of North Carolina. She said the annual golf tournament, typically held in June, will be held in September this year. She has asked Rick if AEG would be interested in co-sponsoring. In the past we have advertised it but done nothing more.

Comments: We will continue to advertise, but will not participate or co-sponsor.

16. Brewpub socials

Comments: Rick is considering one for late June at Big Boss in Raleigh. It's just a brewery, but they have food trucks that come and sell food.

Comments: Has been postponed until July due to scheduling conflicts and so we can get it in the newsletter (see page 9).

17. Looking for professionals to speak to undergrads about career options.

UNC-CH has a new program funded by NST to provide undergraduate research training to underrepresented minorities in the geosciences and to provide gradual school preparation to encourage them to go to graduate school in one of the geosciences. They are looking for one or two professionals with graduate degrees in one of the geosciences to talk to students about their career and career path.

Comments: Rick will probably attend to speak and will contact some additional potential speakers.

WORKSHOP ON CONTINUED VIABILITY OF THE CAROLINAS SECTION

Comments: The Board went into a workshop session to discuss the future leadership of the Carolinas Section. Immediate and near-future leadership of section committees and Board positions was discussed. A number of potential candidates for these positions were discussed and contacts to gauge interest will be made in the coming weeks. It was the overall opinion of the Board that our section is strong and will continue to be strong into the future.

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GSA 2012 Charlotte, NC

“Geosciences: Investing in the Future”

**2012 Geological Society of America
Annual Meeting and Exposition
November 4-7, 2012**

An Invitation to all AEG members...

Please help us to make the Charlotte GSA one to remember . . .

**Take on a leadership role in the meeting by chairing a session,
leading a short course, or organizing a field trip for participants
or their guests.**

**Submit a proposal for any of the above online
at www.geosociety.org starting the first week of October.**

Deadlines:

Contact For More Information

Field Trip Proposal: 1 December 2011

Missy Eppes meppes@uncc.edu

Topical Session Proposal: 10 January 2012

John Diemer jadiemer@uncc.edu

Short Course Proposal: 1 February 2012

Andy Bobyarchick arbobyar@uncc.edu

Abstract Deadline: 14 August 2012

Rob Young ryoung@email.wcu.edu

See you in Charlotte!

ANNOUNCEMENTS

Attention: All AEG and Affiliated Environmental and Engineering Geology Professionals Re: GSA 2012 National Meeting

The Geological Society of America (GSA) national meeting will take place in Charlotte, North Carolina from November 4-7, 2012. The AEG Carolinas Section will be convening a technical session entitled "Practical Applications of Environmental and Engineering Geology". This is a great opportunity to present talks emphasizing the work that environmental and engineering geologists perform on a daily basis.

We would love to have enough talks to fill up a full day with a half-day focused on environmental geology and another half-day focused on engineering geology. Each speaker will need to submit an abstract on-line to GSA, present a 15 minute power point presentation, and register for the convention for at least the day of the session.

The deadline for abstract submission is 11:59 PM on August 14, 2012, so you have plenty of time to put an abstract together.

Please contact Paul Weaver at phone 336-294-1633, or pmweaver@bellsouth.net, if you are interested. Paul will provide you with the details on how to submit your abstract, and will keep track of what talks are proposed for our session.

Thank you and we look forward to having you be a part of our session at the GSA national meeting.

Jennifer Bauer nominated for prestigious international award

Jennifer Bryson Bauer, L.G. has been nominated for the 2012 Richard Wolters Prize. The Richard Wolters Prize of the International Association of Engineering Geologists has been awarded biannually since 1986 to commemorate the life and work of Dr. Richard Wolters, his significant achievements in the advancement of engineering geology and his important role in the development of the IAEG. The Richard Wolters Prize specifically recognizes meritorious scientific achievement by a younger

member of the engineering geology profession. This prize will be contested during the International Symposium on Landslides/North American Symposium on Landslides 2012 in Banff, Alberta. The competition among 6 nominees from around the world will take place on Monday, June 4, 2012; and the prize will be awarded at the Thursday, June 7 Award Luncheon during the Symposium. Jennifer is a Principal Geologist and Owner of Appalachian Landslide Consultants, PLLC, a geology consulting firm in Asheville, NC (www.appalachianlandslide.com). She is also the President of the Association of Environmental & Engineering Geologists (www.aegweb.org), an international professional organization for applied geologists.

(ED; We were disappointed to learn just before publication that Ms. Bauer was not chosen for this award, but very proud that the voting was so close.)

Geotech Environmental Equipment Expands To West Coast

We are pleased to announce the opening of our first West Coast office, 1411 North Batavia Street, Suite 112, in Orange, California. The location is made possible through the acquisition of BISCO Environmental's Orange, California instrumentation rental, service and distribution center. This will be the seventh national service center for Geotech. The Orange County office is conveniently located to provide rental equipment, service existing equipment in the field and distribute Geotech equipment. The acquisition enhances our capabilities in the environmental equipment market and in our ability to bring an enhanced rental product offering to the west coast region. We are so excited to add the existing BISCO Orange staff expertise, customer service skills and strong network in the West, which will enable us to better serve all of our customers. We are planning to provide current customers of the location even better service than they have received in the past.

(Continued on page 28)



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ANNOUNCEMENTS

(Announcements—Geotech Continued from page 27)

June 21-22, 2012—Geotech 4th Annual Field Days

If you do any field work, project planning, monitoring, well design or remediation, this is a great opportunity to train or refresh yourself with real hands-on demonstrations. If you are interested in how certain technology may be applied to your site, this is your chance to talk with industry experts face-to-face. If you want to keep on the cutting edge of industry trends, this is your chance to network with other industry professionals in a friendly and fun atmosphere. Our contact information locally is: NORTH CAROLINA SERVICE CENTER
2517 Noblin Road, Suite 103
Raleigh, North Carolina 27604
Phone: 1-800-293-5325
Local: 919-876-1535
Geotech is a proud sponsor of AEG Carolinas.

Ned Billington Joins ESP Associates

Edward “Ned” Billington, PG recently joined ESP Associates, P.A. to grow and manage their geophysical services department. Ned has been practicing geology

and geophysics in North Carolina since 1990. His previous employers include Ebasco Services and Schnabel Engineering. He has significant experience in land, borehole, and marine geophysical methods with applications to transportation, energy, dams, geotechnical, mining, and environmental projects.

ESP Associates is a 120-person firm offering civil engineering, geotechnical engineering, environmental assessment and remediation, surveying, planning, and geophysics. ESP is based in Ft. Mill, SC (Charlotte metro) with branch offices in Raleigh, Wilmington, Concord, and Greensboro. Ned joins Paul Weaver, PG in ESP’s Greensboro office.

For more information, please contact Ned Billington at (336) 420-5452.

ESP Announces New Geonics EM61-MK2A Metal Detector

ESP is proud to announce the addition of a new Geonics EM61-MK2A metal detector to our geophysical equipment inventory. When used with our integrated DPGS system, the data is collected with real-time sub-meter positioning. Our new EM61, coupled with our Noggin 250 GPR systems, provides us with state-of-the-art tools for locating USTs, drums, and other buried metal objects. Please let us know how we may best serve your geophysical needs. We look forward to hearing from you! For more information, contact Ned Billington, P.G. ESP Associates, P.A. 691 Percy Street, Greensboro, NC 27405 (336) 420-5452



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KB Labs Now Services Hydraulic Profiling Tool

To complement our existing onsite field assessment technologies of Certified Mobile Laboratories and Membrane Interface Probe (MIP), KB Labs is now a service provider of Geoprobe’s Hydraulic Profiling Tool (HPT). By injecting water into the subsurface, the HPT’s sensitive down hole transducer can measure the pressure response of the soil to determine the soil’s hydraulic properties and determine possible pathways of contaminant movement.

The HPT is a valuable tool for pre-injection lithology delineation and screening well placement. Call KB Labs at 919-762-9578 for more information about HPT and all our onsite capabilities.

KB Labs, Inc., provides certified environmental

(Continued on page 29)

ANNOUNCEMENTS

(Continued from page 28)

mobile laboratory and MIP services throughout the southeastern United States and beyond.

Thank you!

Todd Romero, Director of Operations, KB Labs, Inc.,
cell: 352-538-4939
toddr@kbmobilelabs.com, www.kbmobilelabs.com

Con-Test Laboratory is Expanding!

East Longmeadow, MA – Con-Test Analytical Laboratory is a full-service environmental laboratory with capabilities in soil, water, air and other materials. Over the last several years, various market segments within the environmental industry have been viewing Con-Test as a leader in the environmental analytical field, and as a result Con-Test has been rapidly growing. In response to this increased demand, Con-Test recently expanded their facilities and capabilities to accommodate their clients and serve as a foundation for the future.

Con-Test's headquarters, located at 39 Spruce Street in East Longmeadow, MA, consisted of a two-floor facility with administrative offices on the first floor and laboratory space on the second. The new space is located next door to the original laboratory at the address 50 Bond Avenue in East Longmeadow, MA. Due to the acquisition of this 6,000 square foot space, the administrative offices were relocated with the remainder of the original 39 Spruce Street location being renovated into additional laboratory space. This project is expected to be completed by 2013.

The expansion of the laboratory facilities at Con-Test's home base will aid in the focus and efficiency of current analytical staff. Each division within the laboratory is doubling in square footage, allowing for the addition of new instruments and increased capacity. "We are responding to the needs of our clients and our expansion will aid in meeting those needs while adding to our current list of analytical capabilities. We are looking at increased instrumentation, automation, efficiency and a overall improved work environment for our employees," says our management team.

Within this new laboratory space, Con-Test will be expanding our current state-of-the-art PCB laboratory. This expanded PCB lab will be home to over 200 Soxhlet extractors, 9 GC/ECD instruments and senior analyst with over 15 years of GC/ECD and PCB chromatography and identification experience.

In addition to the expansion of Con-Test's facilities in Massachusetts, in 2011, Con-Test acquired a service center in Charlotte, NC to better serve their clients in the southeastern area. This office provides a centralized location for sample kit preparation, shipments to and from the Massachusetts laboratory, and scheduling of delivery via our daily courier services. Con-Test currently has

four staff members in this location who provide courier service and client support to our valued clients in the southeast. We also have gained Virginia certification and are already gaining market share in this area as we move up the east coast.

Con-Test Analytical Laboratory

39 Spruce Street
East Longmeadow, MA 01028
info@contestlabs.com, www.contestlabs.com

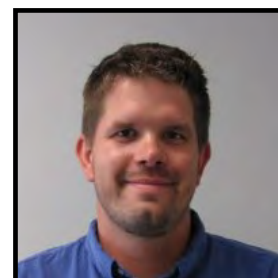
Southeastern Service Center:

4109J Stuart Andrew Boulevard
Charlotte, NC 28217. Tel: 980-406-3134
Thomas Veratti, Executive Vice President: 617-640-4424
Becky Wood, Southeastern Account Executive: 704-883-6924

Brian Smith joins Hart & Hickman Raleigh office.

Brian Smith has joined the Raleigh office of Hart & Hickman as Senior Project Geologist. Brian's experience includes conducting Phase I ESAs; underground storage tank closures, Phase I & Phase II Limited Site Assessments, Comprehensive Site Assessments, groundwater-monitoring events; assessment and remediation of contaminated soil and groundwater; and project management.

Brian has conducted numerous soil and groundwater contamination assessments for clients in the petroleum, petrochemical, dry-cleaning, pharmaceutical, and agriculture and fertilizer industries. Brian is a Licensed Geologist in North Carolina, and he may be reached at csmith118@nc.rr.com until July 9, and at bsmith@harthickman.com after July 9.



Pace Analytical is Expanding!

Pace Analytical is excited to announce the acquisition of Tritest, Inc. Laboratories in Raleigh, NC. Our move into the Raleigh area will enhance our commitment to meet the environmental testing needs of our Raleigh / Triangle area clients and eastern NC with added daily services.

Pace Analytical is a full service environmental testing company with national coverage providing local attention. Please visit our website to view all of our service locations and capabilities. www.pacelabs.com. For more information, please contact Jenny Snipes, Jenny.Snipes@pacelabs.com Pace Raleigh, NC~6701 Conference Center Drive~919.834.4984.

TECHNICAL SECTION

A NEW PERSPECTIVE ON GEOPHYSICS IN NORTH CAROLINA

By Eric Cross, Pyramid Environmental and Engineering, P.C.

Introduction

Pyramid Environmental & Engineering, P.C., has recently added Eric Cross, P.G., to our technical staff. Mr. Cross comes to us from Florida, where he has been utilizing surface geophysical methods to solve geotechnical, environmental, and hydrogeologic problems. His innovative application of geophysics to subsurface issues brings a fresh perspective on dealing with similar problems we face here in North Carolina. Mr. Cross has provided the following short article detailing some of his experiences in the past with geophysics.

Case Study: Geotechnical Applications of MER and MASW to Pre-Construction Resort Development

The development of cutting-edge, nonintrusive geophysical equipment is essential to providing innovative and cost-effective methods with which to identify geologic instabilities, examine detailed stratigraphy and investigate groundwater behavior.



Multi-Electrode Electrical Resistivity (MER) is a geophysical method of mapping subsurface geology by arcing an electric current between pairs of electrodes and recording variability in the electrical resistance of underlying strata. This innovative method is effective in identifying buried karst features, faults, fractures, and weak soils. MER is particularly suited for delineating variations in lithologies, readily distinguishing between gravel, sands, silts, clay and rock. In under an hour, the technology can generate a continuous profile of the subsurface up to 330

meters in length that is equivalent to drilling 56 soil borings. MER is an ideal tool with which to define the geology across rough terrains or submerged environments.

Multi-Channel Analysis of Surface Waves (MASW) is a seismic method that has become a widely accepted tool to examine subsurface soil and rock densities and map geologic layers. MASW provides geotechnical engineers with quantifiable density information, and records high resolution velocity changes in the subsurface that can be used to investigate zones of instability, voids, and stratigraphic variability. MASW is also effective at locations where buried objects or adjacent structures cause interference with other methods such as resistivity.

A combination of MER and MASW were utilized to characterize the subsurface and provide geotechnical engineers with shear wave velocity data that were incorporated into the foundation design plans for a proposed resort development in Anguilla, BWI (see map).

Multiple MER transects were performed across the project site to investigate potential geologic hazards that would prove problematic for construction, such as active sinkhole conditions and the presence of air or water-filled cavities underlying proposed building locations. Multiple MASW transects were also performed to further examine geologic hazards, as well as to provide an extensive subsurface velocity data set to geotechnical engineers to be used in their foundation design calculations. The results of the comprehensive geophysical survey program identified several areas of subsurface instability that would not all have been discovered using a traditional drilling program.

The geophysical surveys were groundtruthed by a series of Standard Penetration Test (SPT) borings and rock cores. The geophysics allowed the original proposed drilling program to be altered to focus on the hazards that were encountered, and the total number of borings was significantly reduced, resulting in a cost-savings to the client. The continuous profiles collected by the geophysics provided a detailed map of the geology across the entire site, as opposed to isolated data that are typically associated with soil borings and rock cores. Distinct lithologic units were identified that were of vital concern to the design engineers (see photo 1).

Correlations between the geophysical profiles

(Continued on page 31)



TECHNICAL SECTION

(Continued from page 30)

and the soil/rock samples were excellent, and provided the construction design team with invaluable subsurface information. The velocity data collected by the MASW surveys were used to correctly design foundations for the proposed buildings, including the foundation type (shallow, piles, etc.) and the proper depths.

Case Study: Forensic Geophysical Surveys to Investigate a Ground Collapse Feature

A series of geophysical transects were performed across and adjacent to an area of ground collapse near a major public roadway (see photo). The goal of the geophysical survey was to delineate the extents of the sinkhole feature, as well as to examine the potential for other locations in the area that may be unstable and likely to collapse in the future. Electrical resistivity transects were performed across the site and correlated to a series of Cone Penetration Test (CPT)

soundings in order to verify the geophysical data. The depth and extent of the visible collapse feature was confirmed by the MER data, which indicated that the zone of instability extended underneath the adjacent roadway. Additionally, at least two other locations were identified where zones of raveling soils and very loose conditions suggested possible voids and the potential for future collapse. The geophysical profiles were incorporated into a 3-Dimensional model of the potential voids across the site. These results were used to quantify the volume of a flowable fill that would be injected into the void spaces in an effort to remediate the sinkhole conditions and stabilize the subsurface. Correlation between the estimated and actual quantities of flowable fill was excellent, proving the usefulness of geophysical surveys in comprehensively characterizing subsurface geologic hazards.

The Benefits of Geophysics in the Carolinas

The above examples of applying geophysics to solve geotechnical and environmental problems are not specific to the locations in which these projects were performed. Throughout the Carolinas, geologic hazards and buried objects create constant problems for geotechnical design, and the lack of subsurface information can result in increased cost and structural failure. Environmental problems such as identifying the location and flow pathways of a pollutant in the subsurface can be solved, in part, with the use of geophysics. Water supply is also becoming an increasingly sensitive issue in the Carolinas,

and geophysics can be used to properly identify production zones and delineate aquifer systems so that production/supply wells are as efficient as possible.

Near the coast, issues of salt water intrusion can be better understood by mapping out the fresh-salt water interface using geophysical surveys. Recent advances in the speed and accuracy of such geophysical surveys make them a rapid and non-invasive way to characterize an entire project site in a minimal amount of time, with minimal personnel, thereby “connecting the dots” between soil

borings or groundwater samples.

Geophysical surveys are only a tool, and must always be used in conjunction with some form of sampling and field data collection in order to verify their results. Additionally, not all geophysical methods are useful at all project sites and for all applications. The correct method, or methods, must be chosen in order to accurately and effectively characterize a site and provide the data that are needed for the client. Pyramid

Environmental has experience and access to a wide variety of geophysical methods, and our knowledge of all of these tools makes us one of the leaders in the industry in providing clients with innovative solutions to their geologic and environmental concerns.

Eric Cross, P.G., is a licensed geologist in the states of North Carolina, Tennessee, and Florida. He received his undergraduate degree from Duke University and a Master's Degree from the University of South Florida. He has been an applied geophysicist for years, and is currently acting as a staff scientist and business development associate for Pyramid Environmental. Contact him with any questions you may have regarding the above projects, or geophysics in general.

eric@pyramidenvironmental.com Phone: (336) 335-3174





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Douglas A. Canavello, P.G.
President

503 Industrial Ave. (27406)
P.O. Box 16265
Greensboro, NC 27416-0265

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OCTOBER 20 FIELD TRIP— GEOLOGIC TRAIL GUIDE TO THE FALLS LAKE TRAIL

By Tyler Clark and Skip Stoddard

The Carolinas Section invites you to attend our fall field trip on Saturday, October 20, 2012, time to be determined. We will be led on our trip by Tyler Clark and Skip Stoddard, and follow a section of the Falls Lake Trail. We haven't yet worked out all the details for the trip, (*Ed.: the announcement came by email as I was doing the final draft of this newsletter!*) but expect it will be like similar trips we've organized: a start in the mid-morning, a bit of a hike with stops at outcrops, a stop for brown bag lunch, more stops in the afternoon, and a return to your car in the mid-afternoon. Mark your calendar for a nice hike in the fall.

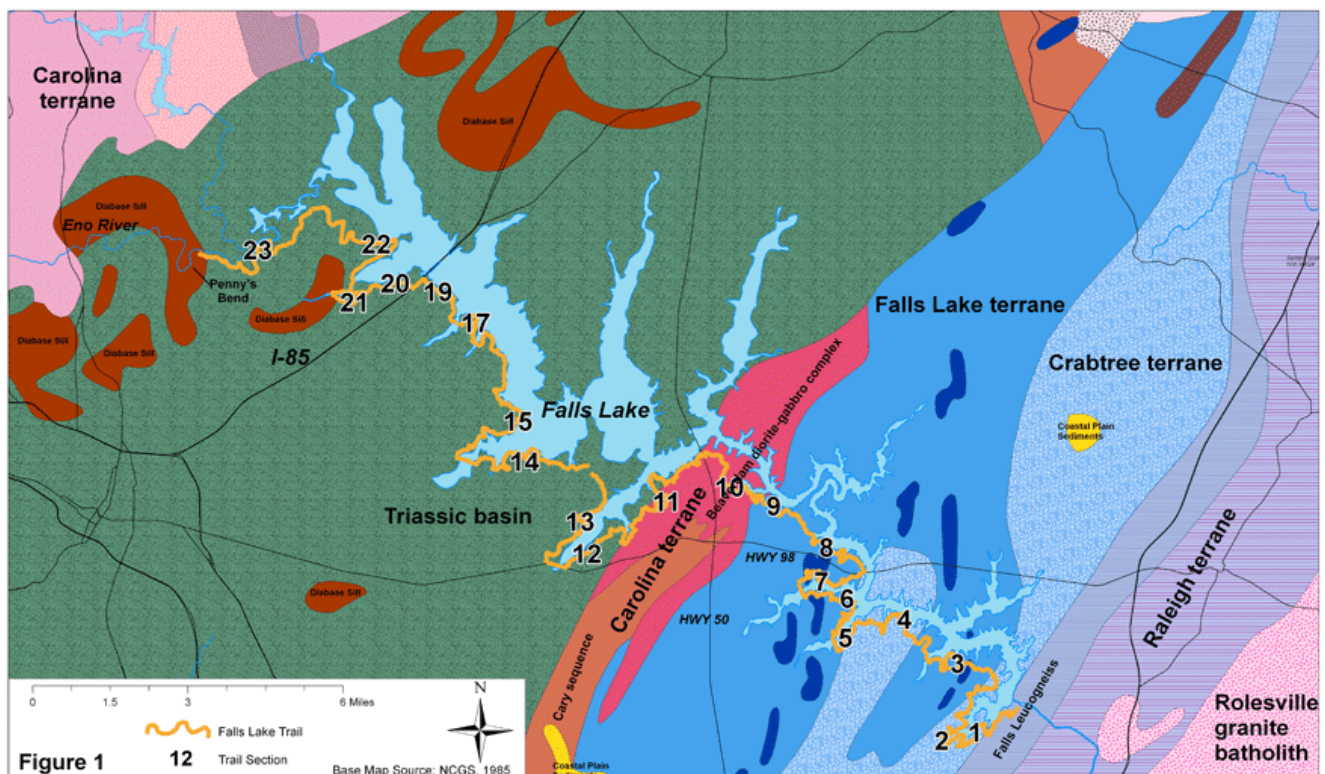
A Geologic Trail Guide to the Falls Lake Trail by Tyler Clark and Skip Stoddard

The Falls Lake Trail constitutes a 60-mile portion of the 1,000-mile NC Mountains to the Sea Trail (MST). Beginning at the Falls Lake Dam, it stretches westward through mostly scenic public lands in northern Wake and Durham Counties. The trail is well marked and well maintained, and it passes through two state parks and one county park. We are developing a geological guide, keyed with GPS waypoints, to an existing trail log. The

guide is written for the general public, and field excursions may be tailored to different levels. Young children will enjoy discovering soapstone and magnetite; college geology students can learn the basics of geological mapping. The AEG field trip will visit one or two short (2-4 mile) segments of the trail.

The trail begins in the Falls Leucogneiss of the Raleigh terrane, then winds through the Falls Lake, Crabtree, and Carolina terranes, before entering the Mesozoic Durham sub-basin. Along the trail, the hiker encounters an impressive range of rocks, minerals, and other geological features, including garnet schist, lineated leucogneiss, soapstone, boulder conglomerate, diabase dikes and sills, actinolite, talc, kyanite mineralization, foliations, lineations, folds and faults. There are opportunities to discover map-scale structural features, including crossing the hinge zone of the Raleigh antiform, where dip changes from eastward to flat to westward; walking back and forth across the Mesozoic Jonesboro normal fault, where geomorphic features as well as rock types show the location of the fault; and crossing the ductile Falls Lake fault, where mylonitized granitoid gneiss marks a fundamental terrane boundary.

The field guide will be accessible via smartphone, so that descriptions of features can be viewed on the trail. Future plans include utilizing the location services of smartphones to couple real-time location information with the field guide. We hope the guide may inspire similar efforts along other portions of the MST and adjoining trails. This would give more people, including geologists, teachers, students, and interested hikers, access to the educational benefits we envision.



CALENDAR OF EVENTS - 2012

Geological Events in the Carolinas

Courtesy of AEG Carolinas Section – www.aegcarolinas.org. Last updated June 20, 2012

Send updates/corrections to Rick Kolb, Duncklee & Dunham, rkolb0915@aol.com.

Meeting Date, Time, and Location are Subject to Change – Please Verify Prior to the Meeting

Date: Tuesday, July 3, 2012 (first Tuesday of each month)

Event: Engineers Without Borders monthly meeting, Research Triangle Park Professional Chapter

Location: 6:30-8:00 PM at the offices of Camp Dresser & McKee; 5400 Glenwood Avenue, Suite 300; Raleigh

Contact: Sarah Kahn, snkahn@gmail.com

Date: Thursday, July 19, 2012

Event: Carolinas Section Brewpub Social

Location: Big Boss Brewing Company; 1249-A Wicker Drive (between Atlantic Avenue and Capital Boulevard, just inside the Beltline), Raleigh

Time: ~5:30 to 7:30 or so

Details: Big Boss doesn't serve food, but they have different food trucks there every day. Com'on out!

Date: August 9-10, 2012

Event: AEG/AGWT conference on hydraulic fracturing -- North Carolina: Get Ready for Hydraulic Fracturing

Preliminary announcement on page 22 of this newsletter and at www.aegcarolinas.org; register at www.agwt.org

Location: DoubleTree by Hilton Hotel Raleigh, Brownstone – University

CEU's for geologists and engineers will be offered.

Date: Tuesday, August 14, 2012

Event: Meeting of the North Carolina Board for the Licensing of Geologists

Location: 9:00 at Upton Associates; 3733 Benson Drive; Raleigh, North Carolina

Contact: Barbara Geiger, ncblg@bellsouth.net; (919) 850-9669

Date: Thursday, August 23, 2012

Event: Carolinas Section Brewpub Social

Location: Aviator Brewing Company - at the Aviator Taphouse; 600 E. Broad St., Fuquay-Varina

Time: ~5:30 to 7:30 or so

Details: This is a brewpub with a full food menu. It's got a nice deck out back, and seating on the patio and sidewalk out front. Join us after

work for a beer. Details on page __ of this newsletter.

Date: September 11-12, 2012

Event: 5th Annual Geosciences Congressional Visit Days

More information: <http://www.agiweb.org/gap/events/geocvd/index.html>

Location: Washington, D.C.

Contact: Rick Kolb, Advocacy Committee Chairman, rkolb0915@aol.com

Date: September 15-23, 2012

Event: AEG Annual Meeting

Location: Hilton Hotel; Salt Lake City, Utah

Date: September 24, 2012

Event: Lecture on the Panama Canal Expansion Project, presented as part of the Paul Zia Distinguished Lecture Series by the NC State Department of Civil, Construction and Environmental Engineering

Location: Raleigh Marriott City Center

Details: Available soon

Date: October 12-14, 2012

Event: Carolina Geological Society 73rd Annual Meeting and Field Trip

Location: Geology of Upstate South Carolina in the Vicinity of Caesars Head and Keowee-Toxaway State Parks

Trip focuses on petrology of metamorphic and ultramafic rocks and structure/tectonics of ductile and brittle structures in the western Inner Piedmont; base will be Greenville, South Carolina

Contact: www.carolinageologicalsociety.org/CGS/2012_Meeting.html

Date: October 20, 2012

Event: Carolinas Section Fall Field Trip

Location: Part of the Falls Lake Trail in Raleigh

Contact/More Information: To be announced

Date: November 4-7, 2012

Event: Geological Society of America Annual Meeting

Location: Charlotte Convention Center

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 year of membership. Otherwise Annual Dues = \$115.00. Applicants who qualify for Member Class, but are engaged in full-time teaching at the Primary, Secondary or post-secondary level are eligible for Teacher Status (Annual Dues = \$35.00).

AFFILIATE: Applicants for Affiliate Member Class shall be scientists or engineers who work with engineering geologists; teachers engaged in middle-school and high school Earth Science education; or persons interested in engineering geology. Annual Dues = \$75.00 (Teacher Dues = \$35.00)

STUDENT: Applicants for Student Member Class shall be full-time students enrolled in an academic program in the geosciences or in a related field in engineering. Annual Dues = FREE.

INTERNATIONAL: Applicants shall hold the same requirements as for Member Class, but may select from the following dues schedule: \$35, which includes the *Environmental and Engineering Geology Journal*; \$45 with the *Journal*, the *Annual Directory* and the *Annual Meeting Abstracts*; or \$55 with the *Journal*, *Annual Directory*, *Annual Meeting Abstracts* and the *AEG News*.

AEG memberships are based on calendar year. Applications received after October 1 will be entered for following calendar year.

APPLICATION FORM

Please complete this form and mail it with your Annual Dues payment to the Association's Headquarters office for processing. New member applicants do not pay Section dues for their initial year of membership.

Name: _____
(Please print your name as you would like it shown on your membership certificate.)

PREFERRED ADDRESS: _____

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DESIRED CLASS OF MEMBERSHIP: _____ ANNUAL DUES AMOUNT: _____

CERTIFICATION: _____

(Signature)

My signature attests that, to the best of my knowledge, I meet the academic and practice requirements for the membership class I have requested and that all entries on this application are true and correct. I also authorize AEG to charge my credit card for the dues payment, if I selected the credit card payment option.

☐ Enclosed is my check for the amount of Annual Dues of \$ _____

Credit Card Payment Option

☐ Discover ☐ Master Card ☐ Visa Amount of Dues to be charged to my card = \$ _____

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SUBMISSION: Send this form with your check or credit card authorization to:
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Phone: 303-757-2926; FAX: 303-757-2969; AEG Web: www.aegweb.org



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The Carolinas 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. In addition, we donate large quantities of educational resources to science teachers.

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 clients in an informal setting.

Our sponsors provide the financial support that allows us to have reasonably priced dinner meetings, host seminars, provide discounted dinner meeting costs for students and teachers, underwrite the cost of newsletters and our web site, provide geoscience mentors for students and young professionals, and support science education tools to our teachers and in our schools. All costs listed below are per year and end in December. New sponsorships received after October will continue to December of the following year.

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GeoNews Newsletter: Business card size ad (2" high x 3-1/2" wide), four times per year.

Meetings: Listing on a Sponsor Poster, located at sign-in table. Verbal acknowledgement by name in Chairman's introductory comments.

Meeting Exhibits: Space for tabletop display at one meeting. Cost of meeting waived for one person on the exhibit date.

Email Announcements: Listing of your company name on each AEG Carolinas Section email announcement (our email list is currently over 1,000 people)

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Business Card	\$ 40.00
Quarter Page	\$ 60.00
Half Page	\$ 100.00
Full Page	\$ 200.00

Please complete the form below and mail to Jane Gill-Shaler, AEG Carolinas newsletter editor. Please call or email if you have any questions (contact information below).

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Please begin our sponsorship of the Carolinas Section of the Association of Engineering Geologists. Our sponsorship level is:

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Something about your company (use back of page for more room) _____

Please enclose a business card or email ad in jpg, pdf, or doc to Jane Gill-Shaler at janehgillshaler@gmail.com.

MAKE CHECK OUT TO AEG CAROLINAS

Snail mail form and payment to:

Jane Gill-Shaler, AEG Carolinas Newsletter Editor
 1636 West Lexington Ave., High Point, NC 27262

(Modified 12/17/2011)

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(Continued on page 38)

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