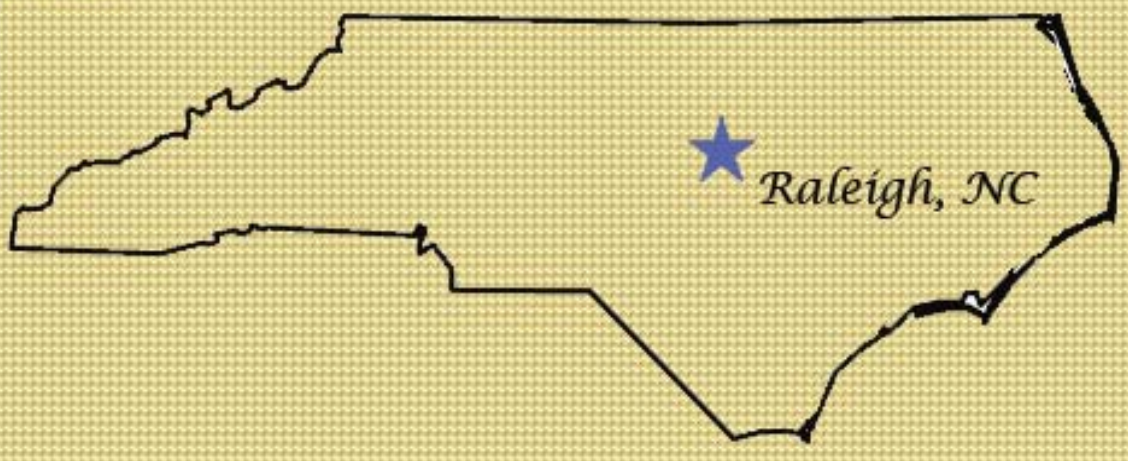
NABGG

National Association of Black Geologists and Geophysicists

Presents

24th Annual Conference

October 12 - 15, 2005



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OXY PERMIAN, part of the Occidental Petroleum family and the largest oil producer in Texas, believes strongly in the future of the Permian Basin and the continuation of its prolific production history. Our name proudly reflects that. We're renewing our focus on exploration. We're continuing to leverage secondary and tertiary technologies to maximize production from existing fields. And we're maintaining our strong tradition of involvement in the communities of the Permian Basin. For more information, please visit www.oxy.com or call 432-685-5600.

OXY Permian

Presents

24th Annual Conference:

Geosciences – Bridging the Gap

October 12-15, 2005

Marriott Crabtree Hotel
Raleigh, NC

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PRESIDENTIAL WELCOME PAGE

Welcome to the 2005 National Association of Black Geologist and Geophysicists (NABGG) conference here in Raleigh, NC. We are pleased that you are joining us for our 24th Annual NABGG Technology Conference.

Throughout its history, Raleigh has also been a home to many of North Carolina's major events and celebrations. The annual State Fair brings thousands of Tarheels to Raleigh each year. Gubernatorial inaugurations, holidays and other observances all give the local citizens a reason to revel.

It has been a while since NABGG has held our annual conference in the Eastern US region. We are proud to have Raleigh be our host city for the 2005 NABGG Technology Conference.

Our conference theme "Geosciences – Bridging the Gap" is symbolic of the growth and expanded network of our membership. We have planned to share with you a broad spectrum of geoscience that we are involved in. We have representation from universities, government agencies, energy industries, and research organizations. One of our goals for this conference is to expand our network through increased participation in all aspects of the geosciences.

Our conference program is packed with panel discussions, technical presentations, exhibitions and career opportunities. Do not miss any moment of it!

All of these sessions will highlight the geosciences and their impact on our society. We have some excellent speakers with topics covering the broader spectrum of geosciences including: 1) Environmental Science 2) Energy Resources 3) Natural Resource Management 4) Geoscience Research, 5) Human Resources and a variety of other topics that "bridge the gap" of geosciences to the real world.

NABGG is very proud to have the opportunity to announce our 2005 NABGG Scholarship Recipients at this conference. We are excited to present these scholars with awards to assist them in their educational pursuits and motivate them to higher achievements in their studies. Please make it a point to congratulate these scholars personally during the Convention.

The Reginal Spiller Award Competition will continue this year with awards being given to the top student technical presentations. NABGG is proud to have its twenty-fourth consecutive year of membership growth. We continue to push forward both as an organization and individuals to make the geosciences an avenue of opportunity for all! I thank you all for attending.

Blessings,

Robert J. Johnson
President
NABGG

State of North Carolina
Office of the Governor
20301 Mail Service Center • Raleigh, NC 27699-0301

Michael F. Easley
Governor

October 12, 2005

Dear Friends:

Welcome to Raleigh for the 2005 National Association for Black Geologists and Geophysicists Conference. I know this conference comes with much preparation.

I commend the National Association for Black Geologists and Geophysicists on its continued dedication to African Americans in the Geology and Geophysics industry. I know that as you meet with your peers to plan the 2005-06 term, you will be able to celebrate the successes of the past year.

Mary joins me in welcoming you to this year's conference. We wish you a successful and productive meeting.

With kindest regards, I remain

Very truly yours,

Michael F. Easley

MFE:mrf

Location: 116 West Jones Street •Raleigh, NC • Telephone: (919) 733-5811

The Birth of the NABGG

In 1979, there were rumblings from a number of minority professionals that they felt the need to connect, communicate, and network with other minority professionals in the geosciences. The voices of our colleagues became louder as time passed and on one given afternoon there was extensive conversation regarding the possibility of setting up an organization that would reach out and let others know that there was an opportunity for individuals with an aptitude in math and science to become Geoscientist. The people involved in the discussions were Curtis Lucas, Allan Harris, James Briggs, James Davis and Michael Carroll. Mr. Lucas was a dominant force at that point with a multiplicity of ideas about what he felt the direction of such an organization should be. In 1980, we met and compiled a list of geoscientist that we knew in the Houston area. This list was compiled with the intent of setting up an initial meeting to table our ideas and to at least make contact with other minority geoscience professionals. There was communication with Mr. Briggs in Dallas and Mr. Davis in Denver and they were charged with establishing similar sessions in their respective cities.

In Houston, we needed a central location to meet, a willing host, and we also needed to have a figure that everyone knew and respected to get this thing off the ground. We found all of these items at the home of Dr. Mack Gipson , who had been a college professor at Virginia State University. We contacted Dr. Gipson and asked if he would host an Ice Breaker/Planning Session at his home. When we told him what the intent was, he indicated that there had been a lot of conversations about doing this kind of thing in the past. At that point, we indicated to him that we were involved with a group of individuals who were planning to do more that talk about it. He agreed to host the session. Mr. Lucas and I split a list of twenty-nine names and began calling and making an appeal to individuals to attend this meeting. We got warm responses from the majority of people that we talked with and the promise from several to spread the word.

The meeting was a success. There was a room full of professionals buzzing with ideas, energy and enthusiasm. Dr. Gipson was a central figure along with Mr. Lucas that evening. It became tremendously obvious that this was at the least, a meeting that everyone there had been looking forward to for some time. Setting up an introductory session and getting people to attend was one thing; setting up an organization and getting everyone moving toward the same objectives would be quite another story. The meetings that followed were held at the homes of some of the charter members. The majority of the meetings were held at the home of Mr. Ken Yarbrough. Mr. Yarbrough was gracious enough to allow us to meet at his home which quickly became a forum for debate and conjecture on how the organization should be set up, what the objectives should be, who should compose the membership, should we incorporate, etc. At times, it seemed as though the discussions were endless.

Other prominent figures arose in these sessions. A fiery, young woman from Sierra Leone, named Rachel Taylor, who was at the time with SOHIO, shared her passion and energy to chair a committee to establish the constitution and bylaws of the organization. Laverne Gentry, John Chance, and Millicent McCaskill assisted in establishing a foundation and base on which the organization could stand. Walter Alexander, an established independent at the time, became a strong advocate of the organization. John Leftwitch and Reginal Spiller became champions of the ideas to involve and inspire youth to consider careers in the geosciences. At a very early point in our series of meetings, we decided on an organization name and on a set of objectives that were reviewed, amended and voted on by the charter members. The name that was agreed upon was *The National Association of Black Geologists and Geophysicists.* The objectives that we established were accepted and remain a focus of our organization today. Its program of scholarship support, local interaction with schools and professional meetings work well to support the enhanced participation of ethnic minorities in geosciences. Through the years, NABGG has awarded over $300,000 to over 200 students for undergraduate and graduate study.

Since 1990, NABGG has become significantly more recognized as a national, professional organization by becoming a member society to the American Geological Institute, the Geological Society of America, and the American Association of Petroleum Geologists. NABGG also has member representation on the National Petroleum Council.

NABGG was established and incorporated in 1981 in Houston, Texas and has been an active organization nationwide with members in the oil and gas industry, academia, government, and most importantly in colleges and universities.

NABGG National Officers

President	Robert J. Johnson	Paradigm GeoTechnology, BV
Vice President	Daniel Samake	BP America
Secretary	Aisha Ragas	Kerr-McGee Oil & Gas
Treasurer	Marian Walters	ExxonMobil
Parliamentarian	Deborah Branch	BP America
Member At Large	Roxanne Lamb	US Geological Survey
Assistant Secretary	Sandra Price	A2D Technologies
Assistant Treasurer	Michael Mitchell	ExxonMobil
Past President	Conrad Allen	ExxonMobil

Advisory Board

Dr. Joe Darden	Michigan State University
Mrs. Patricia Hall	BP America
Ms. Zelma Jackson	Department of Ecology, Washington State
Ms. Carolyn Jones	Output Exploration, LLC
Dr. Patrice Mahob	BP America
Ms. Nicole Scott	ExxonMobil
Mr. Reginal Spiller	Frontera Resources
Dr. A. Wesley Ward	US Geological Survey
Mr. Elijah White	ExxonMobil
Mr. Darryl Willis	BP America
Mr. Ken Yarborough	Osyka Exploration
VACANT SEAT	

NABGG Extended Leadership Group
National Committee Chairpersons

Committee	Chairperson
Merchandise / E-Commerce	Robert Stewart
Website Management	Daniel Samake. Judy Wilson
Assistant Website Coordinator	Laurie Jeffrion-Montgomery
Outreach Committee	Femi Akanbi
Veterans Committee	Ken Yarborough
2005 Annual Conference	Roxanne Lamb
Membership	Elizabeth Watkins
Earth Day	Femi Akanbi, Nicole Scott
2005 Spring Dinner Fundraiser	Amanda Mosola, Elijah White
Technical Programs	Carolyn Green, Ken Yarborough
Mentorship/Student Liaison	Aisha Ragas
AAPG/GSA Exhibits Booth	***VACANT***
Holiday Gala 2005	Geraldine Grant
Scholarship Committee	Roxanne Lamb
Historian	Reginal Spiller
International Relations	Steve Geetan
Geoscience Education	Carroll H. Ellis, Jr.
Student Chapters	Gibran Washington
2004 Annual Conference	Patricia Hall

Regional Coordinators

Eastern Region	Ibrahima Goodwin
Central Region	Sherilyn Williams-Stroud
Western Region	Zelma Maine-Jackson

2005 Conference Planning Team

Thank you to all that have helped make this conference a reality. The team has been very tireless in the efforts to keep all the pieces together. I have enjoyed serving as the Chairperson for the 2005 conference and would not have been able to do this without each of you.

Roxanne Lamb

Conference Chairperson	• Roxanne Lamb – USGS
Conference Planning	• Roxanne Lamb – USGS • Robert Johnson – Paradigm GeoTechnology, BV • Daniel Samake – BP • Aisha Ragas – Kerr McGee • Deborah Branch – BP • Marian Walters – ExxonMobil • Michael Mitchell – ExxonMobil
Conference Registration	• Deborah Branch – BP • Judy Wilson – BP • Marian Walters – ExxonMobil • Michael Mitchell – ExxonMobil
Student Participation	• Aisha Ragas – Kerr McGee
Banquet Planning	• Roxanne Lamb – USGS • Robert Johnson – Paradigm GeoTechnology, BV
Advertisement	• Judy Wilson – BP • Deborah Branch – BP • Robert Johnson – Paradigm GeoTechnology, BV • Roxanne Lamb – USGS
Conference Gifts and Awards	• Teresa Dimmer – ExxonMobil • Elizabeth Watkins – Eni Petroleum
Technical Presentations	• Nicole Scott – ExxonMobil • Elijah White – ExxonMobil • Robert Johnson – Paradigm Technology, BV • Roxanne Lamb – USGS
Past Conference Planning	• Pat Hall – BP • Elizabeth Watkins – Eni Petroleum

2005 – 2006 School Year Scholarship Award Recipients

The National Association of Black Geologists and Geophysicists (NABGG) is honored to provide scholarships to minority students enrolled in geo-science programs. Congratulations to our 2005 – 2006 recipients.

Name	University	Award
Olufemi Akanbi	University of Houston Houston, TX	Book Award
Mark Barthelemy	University of New Orleans New Orleans, LA	Excellent Academics Award
Ernest Fonyuy	University of Missouri – Rolla Rolla, MO	Superior Academics Award
Edwin Greenwood	Southern Illinois University – Carbondale Carbondale, IL	Superior Academics Award
Olubukola Ojo	University of Oklahoma Norman, Oklahoma	Superior Academics Award
Albert Oko	University of New Orleans New Orleans, LA	Excellent Academics Award
Yvonne Paisant	University of New Orleans New Orleans, LA	Superior Academics Award
Joni Verrett	University of Oklahoma Norman, OK	Superior Academics Award
Alton Warren, Jr.	University of New Orleans New Orleans, LA	Excellent Academics Award

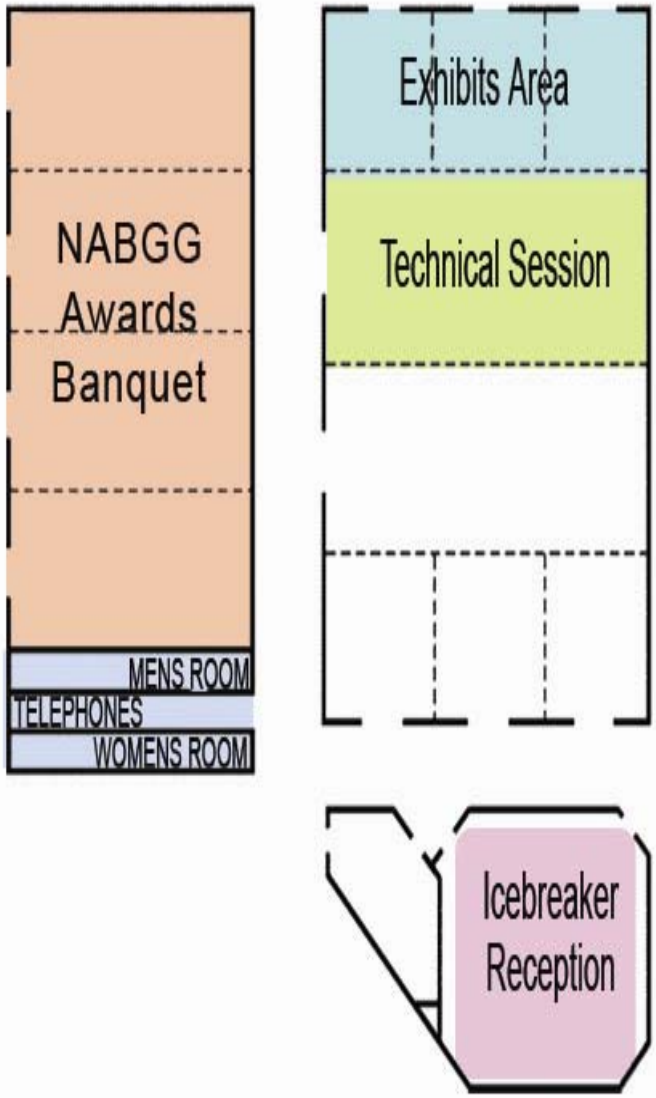
24 Annual Technical Conference Hotel Meeting Space Layout

Icebreaker (Crabtree Room)

Technical Session (Salon E)

Exhibits (Salon F-H)

Awards Banquet (Junior Ballroom)



"Geosciences - Bridging the Gap"

NATIONAL ASSOCIATION OF BLACK GEOLOGISTS AND GEOPHYSICISTS

NABGG

October 12 - 15, 2005
Raleigh, NC

National Association of Black Geologists & Geophysicists
"Geosciences – Bridging the Gap"
October 12 – 15, 2005
Conference Agenda

Wednesday - October 12, 2005 (*Crabtree Room*)

6:30 – 9:30 pm Icebreaker Reception
(Hors D'oeuvres and cash bar)

Thursday - October 13, 2005 *(Salons E-H*)

8:00 – 9:00 **Continental Breakfast & Registration**

9:00 – 10:30 Panel Discussion *(20 minutes each)*
"Bridging the Gap – Your Role in the Geoscience Community"

- Dr. William Porter – Geoscience Professor (Elizabeth City State University)
- Ibrahim Goodwin – Environmental Scientist (EPA)
- Carroll Ellis, Jr. – Earth Science Coordinator (Richmond Public Schools)
- Elijah White – Division Manager - Reservoir Characterization (EM Upstream Research Company (ExxonMobil)

10:30 – 11:50 Technical Session I – *Diversity in the Geosciences*

- 10:30 – 11:15

Christopher Kannan – Geospatial Coordination in North Carolina – NC One Map (USGS - Raleigh, North Carolina)

- 11:15 – 11:50

Zelma Jackson – Groundwater and Urban Environment and Its Implication to Environmental Justice (Washington State Department of Ecology – Olympia, Washington)

11:50 – 12:00 TRANSITION TO LUNCH
(Buffet Style in General Meeting Room)

12:00 – 1:30 **CONFERENCE LUNCHEON**
Luncheon Keynote Speaker – Dr. Susan Eriksson
Director of Education and Outreach, UNAVCO – Denver, Colorado

1:30 – 5:00 Technical Session II – *Presentations*

- 1:30 – 2:00

Tomieka Searcy – Microearthquake Investigations to Reveal Anisotropic Behavior of Seismic Characteristics in the Barnet Shale: Newark East Field, Wise County Texas (University of Oklahoma – Norman Oklahoma)

- 2:00 – 2:30

Albert Oko – Detection of Hydrocarbon Microseepage Anomalies Using Remote Sensing Data and Geochemical Techniques, Wind River Water Basin, Wyoming (Kansas State University – Manhattan, Kansas)

- 2:30 – 3:00

Joni Verrett – Analysis of the Gouge in the San Andreas Fault Zone, Tejon Pass, California (University of Oklahoma – Norman, Oklahoma)

- 3:00 – 3:30

Gibran Washington – Distribution and Significance of the Geochemical Alteration Footprint of a Giant Gold Deposit: Hollinger-McIntyre Mine-Timmins, Ontario, Canada (Wayne State University – Detroit, Michigan)

- 3:30 – 4:00

Shakira Turner – Use of Global Positioning System in Submerged Aquatic Vegetation Mapping (Elizabeth City State University – Elizabeth City, North Carolina)

- 4:00 – 4:30

Zakhia Grant – Coastal Migration and Effect on Shorefront Property Value on the South Shore of Long Island (City of New York University – New York, New York)

4:30 – 5:00 Closing and Wrap-Up

Friday - October 14, 2005

8:00 – 9:00 **Continental Breakfast & Registration**

9:00 – 1:00 Technical Session II – *Presentations (continued)*

- 9:00 – 9:30

Asani Brewton – Detailed fossil preservation and age determination of a Late Devonian marine community in West Virginia (Elizabeth City State University – Elizabeth City, North Carolina)

- 9:30 – 10:00

Carroll Ellis, III – The Developmental Pattern of Richmond, Virginia Based on Its Geology (Virginia Polytechnic Institute and State University [VA Tech] – Blacksburg, Virginia)

- 10:00 – 10:30

Robert Johnson – Integrated Geologic Modeling in Hydrocarbon Exploration and Production (Paradigm GeoTechnology BV, Houston, Texas)

10:30 – 1:00 Technical Session III – *Career Planning Workshop*

Sylvia Davis – Edge Employment, Houston, Texas

- 10:30 – 11:00

Diversity in Geosciences – Career Trends

This paper focuses on the diversity of geosciences career trends initially from an aerial view. The view becomes more focused in the examination of historical and forecasted data combined with geosciences traditional and transferable career opportunities. The review and merging of these information sources when applied individually creates a toolbox for generating a personalized career plan.

- 11:00 – 12:00

Negotiating Growth

Negotiating Growth is an engaging, hands-on interactive session. The discussions and exercises are designed for the geosciences professional who desires to take control of and optimize their career development. Participants will plot their ideal career goals along with true-life personal and professional factors to build the framework of a growth oriented and personal career plan.

- 12:00 – 1:00

The Savvy Professional

Participants are strongly urged to attend Negotiating Growth, although not a pre requisite. The Savvy Professional participant is a proven high performance producer prepared now for their next career opportunity. This fast paced session is designed for the savvy to apply geosciences knowledge, career plans, and methodologies to maximize career strategies.

1:00 Closing Remarks

1:00 - 2:00 **LUNCH** *(on your own)*

2:00 – 3:30 NABGG GENERAL BUSINESS MEETING

6:30 – 9:30 Scholarship & Awards Banquet with Keynote Speaker
6:30 Cash Bar
7:00 Dinner

Saturday - October 15, 2005
9:00 – 11:00 Local Field Trip – Tour of Raleigh/Durham
Conducted by:
Harris Williams – Professor of Geography, North Carolina Central University
Dr. **William Porter** – Professor of Geography, Elizabeth City State University

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In Memory of Dwight Coleman

A Service of Celebration
for
Dwight Morgan Coleman
Entered Eternal Rest: September 7, 2005

TUESDAY, SEPTEMBER 13, 2005
11:00 A.M.

ST. LUKE "COMMUNITY"
UNITED METHODIST CHURCH
5710 East R.L. Thornton Freeway
Dallas, Texas

Reverend Tyrone Gordon, Officiant
Reverend Dr. Zan W. Holmes, Jr., Eulogist

OBITUARY

Dwight Morgan Coleman was born October 29, 1956 in Dallas, Texas, the second of four children of Julius D. and Vernia Mae Coleman. He graduated from St. Mark's School of Texas in 1975, and received a Bachelor of Science Degree in Geological and Geophysical Sciences from Princeton University in 1979.

In 1984, Dwight married Alma Renita Smith, a childhood friend who attended the same neighborhood church. To their union, three children were born.

Dwight was founder of DMC Energy Company. In addition to being a successful businessman, Dwight understood the importance of playing an active role in his children's education and served on the Site-Based Decision Management Board at John J. Pershing Elementary School. He also served on the Board of Trustees of St. Mark's School of Texas.

He enjoyed many hobbies, his favorites being football, scuba diving, fishing, cooking, camping, and attending/watching NASCAR racing.

The Lord called Dwight home on September 7, 2005. He was preceded in death by his mother, Vernia Coleman.

Dwight leaves to embrace his memories: wife, Renita; three devoted children, Megan, Matthew, and Miles; father and stepmother, J.D. and Willie Mae Coleman; three sisters, Raysonia Coleman, Julia Dobbins (Andrew) and Arleen Coleman; one brother, Keith Coleman (Ericilda); and a host of nieces, nephews, friends and neighbors.
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Lunch Keynote Speaker

Dr. Susan Eriksson is the Director of Education and Outreach for UNAVCO, a consortium of universities who use an array of technologies, primarily high precision GPS, to study the deformation of the Earth's crust.

UNAVCO is installing the Plate Boundary Observatory, one of three components of the EarthScope project. Susan Eriksson is a geologist whose primary professional life has been working between the scientific and educational fields to make science, particularly earth science, more accessible to a wide range of audiences. Dr. Eriksson started her professional life in the 'oil patch' using her geochemical and petrological training to study sandstone diagenesis at the ARCO research lab in Plano, Texas. She then moved to Virginia Tech as curator of the mineral museum and teaching faculty in the Department of Geological Sciences. In addition to her teaching over 2000 students in introductory courses, Susan was the first Director of the Virginia Tech Museum of Natural History and served a short term as Associate Dean of the College of Arts and Sciences as a liaison among the university's scientists, science education faculty, and educational initiatives in Virginia.

Awards Banquet Keynote Speaker

Garry A. Harris is the President of HTS Enterprise LLC, which provides engineering services covering nuclear, energy, engineering, environmental, construction, transportation, and quality assurance and control.

Mr. Harris, a twenty-five year veteran of the nuclear industry, has consulted to or performed engineering, licensing, quality control and assurance, operations, spent fuel transportation and storage, and plant maintenance activities at nearly 70% of nuclear plant sites in the US. His professional experience spans various senior positions at Westinghouse Electric, Institute for Nuclear Power Operations and the US Nuclear Regulatory Commission.

Mr. Harris is the Immediate Past President of the Georgia Section of the American Nuclear Society. In additional he serves on three ANS National Committees (Bylaws, Membership and NEED scholarship) and was recently appointed to be Chair Elect of the ANS Membership Committee. He also recently nominated for the ANS National Board of Directors.

Mr. Harris holds a BS in Nuclear Engineering from the University of Virginia, a MS in Technology Management and MS in Quality Assurance and is pursuing efforts to obtain a doctorate in Industrial Engineering. Mr. Harris was also Senior Reactor Operator (SRO) certified both by the Nuclear Regulatory Commission and Westinghouse Electric Corporation. Mr. Harris is also pursuing a diploma in Energy Management from North Carolina State University.

In addition, Mr. Harris is a senior member of the American Society for Quality (ASQ) and holds numerous professional and technical certifications in the field of quality and industrial engineering including ASQ Quality Manager-Organizational Excellence, Six Sigma Black Belt and Malcolm Baldridge Organizational Effectiveness Examiner for the state of Georgia.

Mr. Harris has received and been nominated for numerous professional and civic awards and recognition including the Westinghouse Engineering Achievement Award, NRC High Quality and Special Act Awards, Westinghouse Award of Excellence, Omega Man of the Year, Citizen of the Year, Superior Service and Chapter Presidents Award (Omega Psi Phi Fraternity), National Technical Association (NTA) Samuel R Chevers Distinguished Service and James C. Jones Humanitarian Award as well as Congressional Recognition for community based efforts.

Mr. Harris's current and previous national level leadership experience in professional and technical organizations include; Past National President, National Technical Association (NTA) of engineers and scientists, National Board of Directors of the American Association of Blacks in Energy (AABE), President-Elect, Construction and Design Division, ASQ, Division Council, Energy and Environmental Division, ASQ. He serves on technical and advisory boards at several universities including the University of Virginia, Tuskegee University and South Carolina State University.

2005 Conference Presenters Abstracts

Thank you for sharing your knowledge and or experiences during our 24th Annual Conference. Your presentation has given a brief look at your commitment to the Geosciences in your field of expertise. We look forward to your continued involvement in our organization.

Roxanne Lamb

Geospatial Coordination in North Carolina – NC One Map

Christopher Kannan
USGS
ckannan@usgs.gov

The U. S. Geological Survey created the National Geospatial Programs Office to focus on its mission to meet the nation's needs for current and accurate geospatial information. This office brings together several key activities including Geospatial One-Stop (GOS), *The National Map,* the Federal Geographic Data Committee, and the National Atlas.

The goal is to further the development of the National Spatial Data Infrastructure (NSDI) by partnering with Federal agencies, States, and local communities. Key activities are the Fifty States Initiative done in partnership with the National States Geographic Information Council; the creation of a National Geospatial Technical Operations Center for data review and integration; and the development of an incentive program to facilitate the contribution of partners at state and local levels.

NC OneMap proves to be a model for successful intergovernmental collaboration, rewarding elected officials, government leaders and the citizens of North Carolina. NC OneMap is a comprehensive, statewide program and Internet mapping service that enables data sharing among communities and jurisdictions across the state and provides new opportunities to address regional issues, solve problems and integrate geographic information into the business of government. Counties and cities are capitalizing on their investments in geographic information by using the Internet to help government leaders and citizens make better-informed decisions.

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Groundwater and Urban Environment and Its Implication to Environmental Justice

Zelma Jackson
Washington State Department of Ecology
ZJAC461@ECY.WA.GOV

Handout Provided

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Microearthquake Investigations to Reveal Anisotropic Behavior of Seismic Characteristics in the Barnet Shale: Newark East Field, Wise County, Texas

Tomieka Y. Searcy
University of Oklahoma
tsearcy3@houston.rr.com

Currently, the Institute for Theoretical Geophysics at the University of Oklahoma is developing induced fracture mapping tools to improve exploration for oil and gas within anisotropic layers such as shale reservoirs. To map microearthquake locations over time and space, using hydraulically fractured wells as the source, a seismic tomography model was created using the perforation shot records and a dipole sonic log from a borehole seismic acquisition. The seismic tomography model indicated seismic properties of an anisotropic medium. Therefore, my thesis work revealed evidence for the anisotropic behavior in the Barnett Shale.

Devon Energy Inc. provided microearthquake three component data (unfiltered) from one of its hydraulically fractured wells in the Newark East Field, Fort Worth Basin. I accurately identified quality seismograms (three component seismograms with little or no noise) to determine the body waves' arrival times. I used a program that enabled the use of polarization diagrams to observe shear wave splitting and record the preferential direction for the first shear wave.

After integrating the information from the seismic tomography model, perforation shot records, and the calculated results from the microearthquake analysis, the microearthquake locations were mapped according to an anisotropic model. The microearthquake maps reveal that 88 % of the induced fractures occur in the Lower Barnett Shale. With increasing depth, the microearthquakes trend northeast to southwest. I compared my visual analysis of microearthquake seismograms to an automated program results. Both methods reasonably correspond to one another considering the determined preferential directions of the first shear waves and the microearthquake locations created over time and space.

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Detection of Hydrocarbon Microseepage Anomalies Using Remote Sensing Data and Geochemical Techniques, Wind River Basin, Wyoming

Albert Oko
Kansas State University
oko_man2000@yahoo.com

Landsat thematic mapper (TM) images enhanced through linear stretching, low-pass filtering, and color combinations allowed the detection of structural features and a tonal anomaly possibly associated with geochemical alteration of soils and sediments due to hydrocarbon seepage in the Wind River basin, Fremont County, Wyoming. The anomalous feature is also represented by an abnormal reflectance high above sandstone in the 2.08-2.35µm spectral region. Lineament analysis suggests that at least two episodes of tectonic activity affected the area in the past. Concentrations of iron, revealed through spectral band rationing, correspond roughly to the belts of the Chugwater Formation exposed at the Red Canyon Rim and the center of both the Dallas and Derby anticlines. Clay-rich zones occupy lower elevations. A supervised classification image map produced for the area proved correlatable with the available geologic map. X-ray diffraction analysis of sampled soils suggests an association of mixed-layer illite-smectite depleting into kaolinite in the observed anomalous zones. A consistent oxidation halo flanking one of the anomalous zones revealed by the enzyme leach analysis underscores the presence of a reduced body in the subsurface within the area. The conversion of normally illitic-smectite clays to kaolinite and the distinctive oxidation halo are in line with models

proposed for the detection of hydrocarbon-induced surface anomalies. Overlay of a digital raster graphics (DRG) map of the area with an enhanced TM image of the scene shows that known oil wells are close to the anomalous zones. The x-ray diffraction and enzyme leach results, however, could not account for the conspicuous concentration of ferric irons in the soil samples. This investigation did show potential prospect zones, which incidentally, are producing oil fields in the area. The study indicates the effectiveness of integrating remote sensing techniques with other essential disciplines of geology for mineral and oil exploration.

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Use of Global Positioning Systems in Submerged Aquatic Vegetation Mapping

Shakira Turner
Elizabeth City State University
sdturner@mail.ecsu.edu

Elizabeth City State University's (ECSU) Department of Geological, Environmental, and Marine Sciences uses the Global Positioning Systems as part of our coastal research using Trimble programs and software (GeoXT and Pathfinder Office). The GeoXT is used to navigate to research sites and Pathfinder Office combines the information collected by the GeoXT. This navigation system is formed from a constellation of 24 satellites and their ground stations. We use these "man-made stars" as reference points to calculate positions accurate to a matter of meters. In a sense it's like giving every square meter on the planet a unique address. As part of our research at ECSU we use the Global Positioning System to navigate to submerged aquatic vegetation sites and transect surveying sampling stations. Also control points for Geo-rectification and Signature Development and spatial accuracy assessments.

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Analysis of the Gouge in the San Andreas Fault Zone, Tejon Pass, California

Joni D. Verrett
University of Oklahoma
joni.d.verrett-1@ou.edu

Major faults in the crust display grain size reduction and gouge formation, and the fault gouge is a controlling factor in earthquake instability and fault friction. Analysis of the mechanisms of gouge formation will contribute to the understanding of earthquake mechanics and hazard. We chose to analyze the gouge zone of the San Andreas Fault in southern California, and focused the work on the segment that slipped during the 1857 earthquake in Tejon Pass. We present preliminary results of mapping the components of the fault zone at scales of 1:10 to 1:40 and micro-structural analysis in thin sections. The mapping covered a 152m long by 6m wide profile across the San Andreas Fault. The fault zone is comprised of distinct zones of pulverized granite, cataclasite, and faulted young sediments. The pulverized granite appears as a solid rock, but it is disintegrated into a white powder, and it contains multiple, small localized shear surfaces. The cataclasite is composed of the following four members: a white powdery member, a red member, a banded granite member, and a dark green clastic member. The young sediments that probably originated in a lake environment contain organic material, caliche, and many continuous faults. The many small faults and shear surfaces throughout the outcrop display transport direction which is normal to trend of the San Andreas Fault. Mapping of the microstructures is underway. We will use electron microbeam methods and compositional and image analyses to determine grain morphology and variations in composition. The results of this project will provide a detailed characterization of the fault-zone properties in the most active segment of the San Andreas Fault.

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Coastal Migration and Effects on Shorefront Property Value on the South Shore of Long Island

Zakhia X. Grant
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The Long Island barrier island system is greatly affected by coastal migration and inlet activity through processes of erosion and deposition of sand from ocean wave activity. Shorefront properties in these areas historically tend to have a higher real estate value than the inland parts of the island. This has played an important part in real estate values, and from a governmental perspective, property tax values. However, whenever Long Island is struck by a hurricane, nor'easter, or even a strong storm, the coastline can be affected, and possibly reduce property size. Besides violent weather, there is also the factor of normal coastline migration and sediment transport that can alter the coastline over time. This study will attempt to show how coastline migration may have an effect on shorefront property values by modeling coastal migration of sediment for the barrier island system over a period of time. Predicted changes in the shoreline will be used to determine if shorefront properties will change in aerial extent, having an effect in land value and assessment. Geographic Information System (GIS) will be used to interpret shoreline features to assist in the modeling process as well as communicate modeling results.

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Detailed Fossil Preservation and Age Determination of a Late Devonian Marine Community in West Virginia

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Roadcut operations northwest of the town of Elkins, West Virginia, have exposed a section of Paleozoic marine rocks. The Elkins rocks are dark siltstones and fine sandstones and were deposited an estimated 9.5 km offshore. Fossils were collected from this exposure to more precisely determine the age of the rocks. The overall faunal analysis suggests these rocks were deposited during the Frasnian stage of the Late Devonian and are equivalent to the lower units of the Foreknobs Formation (Mallow through Blizzard Members). The finer sediment at Elkins has allowed preservation of delicate external morphology of the fossils, especially the pelecypod genera Palaeoneilo, Vertumnia, Lyriopecten and Pterinopecten, and the rare productid brachiopod genus Steinhagella. This finer detail has also facilitated species identification and has produced a faunal distribution quite distinct from the temporally equivalent Foreknobs Formation, in that the Elkins fauna contains greater numbers of pelycepods and orthocerid cephalopods. This new data will allow faunal analysis to extend basinward from the generally nearshore, deltaic Foreknobs lithologies and lead to a more detailed biostratigraphic zonation of the deeper marine facies of the Late Devonian central Appalachian basin.

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The Developmental Pattern of Richmond, Virginia Based on it's Geology

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The geology of Richmond and its surroundings have played a major part in the development of the city's layout, use as a port, center for mineral resources, and economic development. In 1607, the history of the city began with the arrival of John Smith and his companions. They had their hard times, but eventually the area began to become a "hot spot" for settlers. Colonel Byrd became known as the "Father of Richmond," and soon after Richmond was formally named the Capital of Virginia.

Richmond lies in between the physiographic provinces known as the Piedmont and the Coastal Plain. This area is known as the Fall Zone, which refers to the quick change in elevation. The James River, which flows directly through Richmond, is characterized by its rapids which are caused by the Fall Zone. These rapids helped make Richmond into a port because all boats had to stop in Richmond and the factories and mills had a major water source. It also gave them the reason for building the Kanawha Canal.

The topography of the city has affected the placement of many roads and neighborhoods, as well as the location of the Richmond International Airport. The historical geology of the area also shows why there was rock quarrying in the Richmond area. In addition, the geology clarifies how the Triassic Basin formed in Midlothian (South-West Richmond), which provided settlers with coal.

Earth science teachers in Richmond Public Schools will be provided with this information. They will be able to use this as curriculum for their classes. The Standards of Learning in the areas of the Geology of Virginia and the Virginia mineral resources will also be supported by the thesis. Above all, students will gain incite into the geology and history of Richmond that they may not have received.

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INTEGRATED GEOLOGIC MODELING IN HYDROCARBON EXPLORATION AND PRODUCTION

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Geologic modeling is the applied science of creating virtual representations of subsections of the Earth's crust. Within the context of petroleum exploration, realistic geologic models are required as input to reservoir simulation packages, which attempt to predict the behavior of reservoirs within various hydrocarbon recovery scenarios.

A relatively new subdiscipline of geology, geologic modeling attempts to integrate a number of geoscientific subdisciplines (Structural Geology, Sedimentology, Stratigraphy, Paleoclimatology, Diagenesis and Reservoir Engineering) into a consistent workflow to create an accurate three dimensional earth model of a targeted reservoir.

A geologic reservoir is generally represented using a 3-dimensional array of relatively small subdivisions, or three dimensional cells. The creation of geologic models is computationally intense, so this workflow requires the utilization of relatively high-speed digital processors.

The reservoir can be managed to maximize recovery and avoid inefficient extraction procedures. Using reservoir simulation, reservoir engineers can identify which recovery options offer the safest and most economic, efficient, and effective development plans.

With every day, access to higher resolution 2D and 3D seismic data, multiple seismic attributes volumes, and more sophisticated, powerful, and easy-to-use interpretation tools, allows for the creation of geologic models by geoscientists in a relatively short period of time.

3D visualization & creation of 2D/3D interpretations with structural validation can help the interpreter decide between multiple controlled geometries and reduce the risk in making critical E&P decisions. A validated structural model significantly reduces the risk when prospecting in a poorly understood basin area; determines the most viable structural interpretation; and helps decipher the evolutional history of basin events. This information helps the geoscientist understand and predict the possibility and timing of hydrocarbon entrapment.

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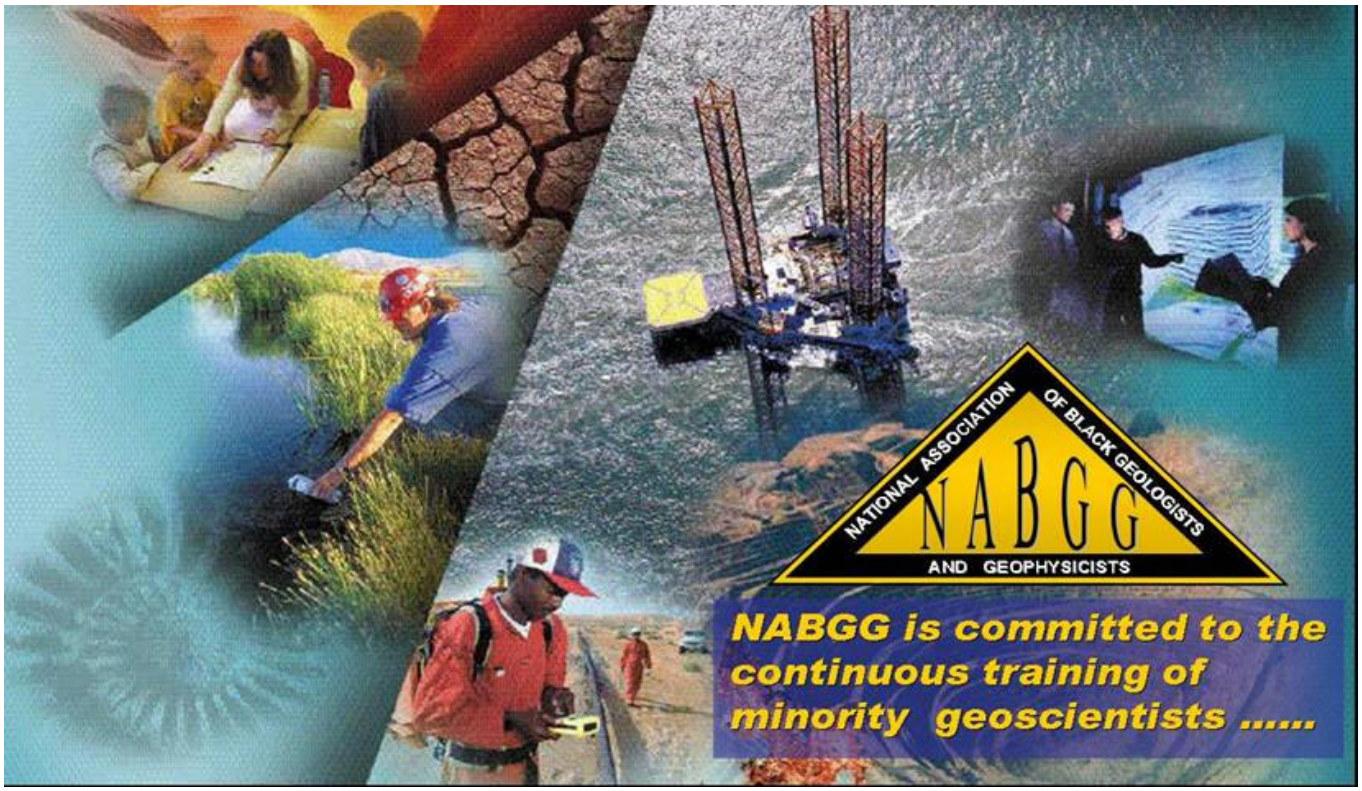

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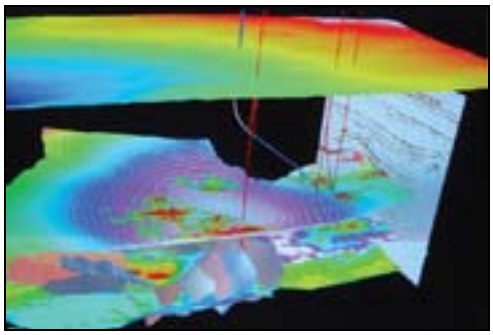

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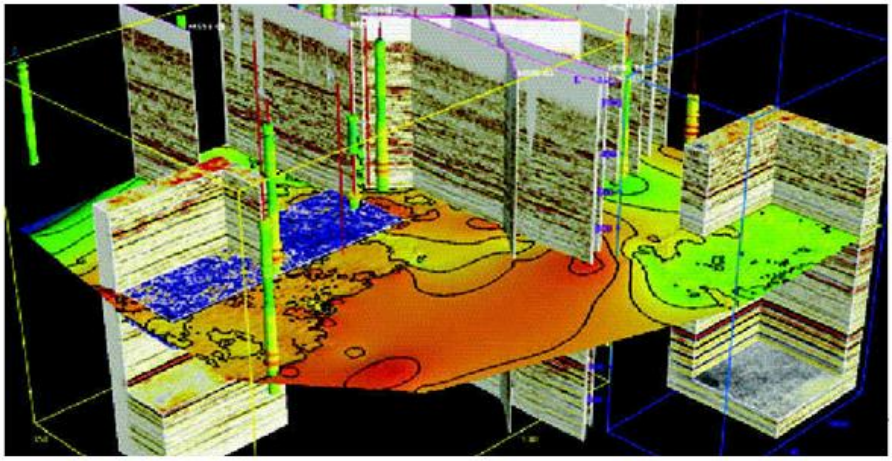


Announcing

UW-BP Graduate Research Assistantships in Earth Sciences

Department of Geology & Geophysics
University of Wisconsin - Madison

BP and the University of Wisconsin - Madison are pleased to announce a Graduate Research Assistantship that is intended for U.S. citizens who come from cultural or ethnic groups that are under-represented in earth science, and who will pursue graduate studies in any field of geology, geophysics, or geological engineering. This is the fifth year of the research assistantship program, and we expect to grant one or more awards to graduate students in the 2006-07 academic year. In addition to a 12-month stipend, the research assistantship includes a tuition waiver, health benefits, and a flexible research fund.

The Department of Geology and Geophysics at UW-Madison is notable for its breadth in the Earth Sciences, and its multiple strengths and approach to teaching and research over its 133 year history are crucial factors in the great success of its graduates. G&G is ranked second in the United States in the number of undergraduate Earth Science majors who continue toward Ph.D. degrees and fourth in the number of Ph.D.s who hold faculty positions (NSF 96-334). Overall, G&G's graduate program is ranked 9th relative to all other earth science departments at public research universities (NRC). Our graduate program has received high recognition in the areas of hydrogeology and sedimentology, which are ranked third and sixth in the nation, respectively (USNWR). The Department has the highest per-faculty external research funding of all earth science departments in the Big 10. Departmental graduates are highly sought-after by the petroleum, environmental, and other industries, and have also been very successful in academic, government, and other career fields.

The 20 members of the G&G faculty are joined by over a dozen staff, ~50 undergraduate majors, and ~80 graduate students and post-docs. Our proportion of women faculty is more than twice the U.S. average (NSF 00-327), and the proportion of women in our graduate population is 1/3rd higher than the national average for geoscience departments (NSF 00-327). Research projects in the department are extremely diverse, ranging from the origin and evolution of life to the study of groundwater contamination in modern aquifers. Exceptional teaching and research facilities are available in the Department, and these have been recently expanded as part of a $5M addition to Weeks Hall, the Department's home. In addition to long-standing strengths in hydrology, sedimentology, geomorphology, paleontology, structural geology, geophysics, and petrology, the Department has recently expanded into new areas of geochemistry, mineralogy, and geomicrobiology.

Applications for Fall 2006 must be completed by January 3, 2006. Detailed information about the application process may be found at *http://www.geology.wisc.edu/prospective_stu/howto_apply.html*, and general information about the Department may be found at *http://www.geology.wisc.edu*. Inquiries regarding applications may be directed to the Graduate Secretary, Jane Fox-Anderson (*jefoxand@geology.wisc.edu*), and questions about the Department in general may be directed to the Department Chair, Prof. Jean Bahr (*jmbahr@geology.wisc.edu*).

NABGG Upcoming Events

Greetings to All NABGG Members and Friends

NABGG Holiday Fundraiser Gala

The Gala will be held on Saturday, ***December 3, 2005****. This year's event will be held in one of the large, elegant ballrooms of* ***Intercontinental Hotel*** *in the Galleria area.*

In addition to an awesome dinner menu, there will be a huge dance floor, a disc jockey, a photographer and fun and games for everyone. Our annual Holiday Toy Drive, which is sponsored by the NABGG Outreach Committee, will also be held at this event.

The cost will be $75.00 per person, which can be paid in installments very soon via Paypal from our website (www.nabgg.org). We are announcing this event early to allow everyone an opportunity to be involved with our organization. We cannot always ask the major oil companies to assist us if we are not helping our own organization. We are asking that each member be responsible for inviting at least 4 guests to the party, inclusive of themselves.

This will be our last fundraiser for the year and we are hoping to generate substantial funds to replenish our scholarship account. The Holiday Fundraiser Gala committee has worked very hard on this event during the first half of the year and has done a fabulous job so far. Now it is time for every member to do their part.

If you have any questions regarding the event, please contact one of the committee members below. We will be glad to assist you.

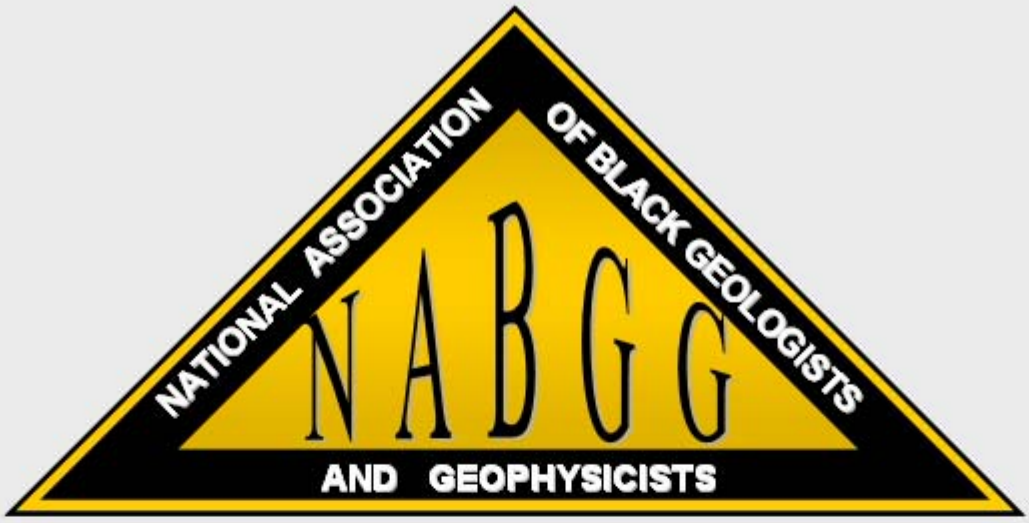
Thank you,

NABGG 2005 Holiday Gala Fundraiser Committee

Ms. Geraldine Grant – Committee Chairperson (713) 366-5239; geraldine_grant@oxy.com

Ms. Marian Walters – Asst. Chairperson (281) 654-7791; marian.v.walters@exxonmobil.com

Ms. Darlene Morris – Asst. Chairperson (281) 654-1410; darlene.r.morris@exxonmobil.com



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2005 Conference Notes

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