TPG

Volume 43, Number 3 THE PROFESSIONAL GEOLOGIST MAY/JUNE 2006

A Publication of the American Institute of Professional Geologists — Professionalism Is Our Purpose www.aipg.org

AIPG 43RD ANNUAL MEETING

"SUSTAINABILITY"

Saint Paul Minnesota

September 23-28, 2006

www.aipg2006.org

2ND CALL FOR PAPERS

We cordially invite geologists/geoscientists from all walks to share your research, experiences, and inspirations related to our theme of "**Sustainability**." We will gladly consider abstracts for presentations on the following topics related to sustainability:

- Theme Sessions - Energy, Minerals, Water, Toxics, Policy & International Aspects;
- Geologic resources as a foundation for society & regional economies;
- Effects of redistributing geologic materials in the environment;
- Interactions of natural hazards with the human population;
- Sustaining the profession and science in general; and
- Education and public policy; or other related topics.

We seek a breadth of material related to the topic, whether it is rooted in completed research or informed speculation. This is an opportunity to explore together the different meanings that "sustainability" can hold for professional geology and those who practice it. A closing Roundtable Session is planned to collectively assess how AIPG can incorporate the theme and your contributions into our future endeavors.

Abstract Submission: ~250 words, plus title, presenter, address, and E-mail address; Word format preferred with standard fonts; E-mail to ctiller@amengtest.com (or contact for alternative delivery arrangements). Our target deadline is **July 15, 2006**.

To submit or discuss abstracts, contact
Charlie Tiller, PG, CPG - Technical Program Chair
651-659-1302 *OR* ctiller@amengtest.com

TPG

Volume 43, Number 3 THE PROFESSIONAL GEOLOGIST MAY/JUNE 2006

FEATURES

DEPARTMENTS

ON THE COVER — The Lake Superior agate is the Minnesota state gemstone. The history of Lake Superior agates traces back to about a billion years ago. The North American continent began to split, creating a large rift valley, and lava welled up in the area of what is now Lake Superior. Bubbles of air were trapped in the lava (similar to the way bubbles of air appear in a pan of water before it begins to boil.) After the lava cooled, water seeped into the holes created by the bubbles and deposited iron, quartz, and other minerals in layers, creating agates. As the surrounding volcanic rock was worn away by erosion or the scouring action of glaciers, agates were released from the lava and moved to other places. "Lakers" are primarily found in exposed sand and gravel deposits, along rivers and streams, or in beach gravel that covers a vast hunting ground in parts of Minnesota, Wisconsin, Michigan, Iowa, Nebraska, Illinois and Kansas. Photo credit: Scott Wolter, CPG-08260.

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For AIPG news and activities go to www.aipg.org.

EDITOR'S CORNER

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Where has 2006 gone? It seems like we were just in Tucson at the ExComm Meeting and I have just finished reviewing the May-June issue of TPG. This issue is packed with a tremendous amount of information. There is something for every one of us in this issue.

Spend some time reviewing the nomination statements from the slate of candidates. There is a great mix of members for President-Elect, Vice President, Treasurer, and yes, Editor. Contrary to popular belief, Editor is not a position for life! For our system to be effective, make sure you vote. Headquarters has made it really easy – you can use the enclosed ballot and mail it back to Headquarters or save yourself 39 cents and vote electronically on the AIPG website. Oh, if you vote electronically, browse around the AIPG webpage.

I have been to Minnesota quite a few times, especially the Duluth and Hibbing areas and have always been fascinated with the geology and geological history of the region. As I reviewed the information for the upcoming 43rd Annual Meeting in Saint Paul in this issue of TPG, I turned in my chair and went online to check out airfare prices! This looks to be a great meeting. It will be a six-day, power-packed meeting including great field trips, short courses, technical sessions, and social activities. The dates for the meeting are September 23 – 28, 2006. Mark it on your calendar!

We are always looking for articles, member information, photographs to grace the cover of TPG, and all other comments from you. Please send them to Wendy Davidson (wid@aipg.org) or Ray Talkington (rtalkington@geospherenh.com).

I hope you enjoy this issue. Keep looking for changes?

American Institute of Professional Geologists (AIPG) is the only national organization that certifies the competence and ethical conduct of geological scientists in all branches of the science. It adheres to the principles of professional responsibility and public service, and is the ombudsman for the geological profession. It was founded in 1963 to promote the profession of geology and to provide certification for geologists to establish a standard of excellence for the profession. Since then, more than 10,000 individuals have demonstrated their commitment to the highest levels of competence and ethical conduct and been certified by AIPG.

The mission of the American Institute of Professional Geologists (AIPG) is to be the superior advocate for geology and geologists, to promote high standards of ethical conduct, and to support geologists in their continuing professional development.

AIPG 43rd ANNUAL MEETING

"Sustainability"

Saint Paul, Minnesota

September 23 - 28, 2006

Hosted by:
The Minnesota Section of AIPG

Welcome to
Saint Paul, Minnesota!

Situated on the bluffs of the mighty Mississippi River is Minnesota's beautiful capitol city, Saint Paul, our location for the 2006 Annual Meeting. Saint Paul's historic downtown offers spectacular views of the Mississippi River while viewing some of the city's Old World charm from architectural buildings along Summit Avenue, the European-style Saint Paul Cathedral to the historic buildings of Saint Paul's downtown including the State Capitol and the Fitzgerald Theater (home to Garrison Keillor's A Prairie Home Companion), and the Landmark Center. Saint Paul is also a thriving center of ideas and new buildings from the Science Museum of Minnesota, the Xcel Energy Center (home of the Minnesota Wild hockey team) and Harriet Island Regional Park - all within an easy walk from our venue.

Just across the Mississippi River to the west is Saint Paul's twin city, Minneapolis. The two cities, known as the Twin Cities, comprise a vibrant metropolitan area that incorporates some of the most scenic urban lakes in the U.S. Just minutes from the downtown district in Saint Paul, Como Park has provided a beautiful outdoor haven including Lake Como and the Como Park Conservatory and Gardens. In Minneapolis, Cedar Lake, Lake of the Isles, Lake Calhoun and Lake Harriet are referred to as the "Chain of Lakes" where visitors can enjoy over 13 miles of lakeside paths within minutes from Minneapolis' downtown district.

The Twin Cities metro region is home to the Mall of America – the largest shopping and entertainment complex in the U.S. making the Twin Cities an international shopping destination. To the east of Saint Paul is the scenic St. Croix River Valley with spectacular evergreen cliffs around Taylors Falls and the charming city of Stillwater where Minnesota was born, famous outlaws were imprisoned, and fortunes were made in lumber and milling.

Exploring Saint Paul or Minneapolis is made easy even during inclement weather! Both cities have an extensive network of enclosed pedestrian walkways, "Skyways" – invented in 1962 in Minneapolis, that connect the various downtown buildings.

The historic Saint Paul Hotel is our site for the 2006 Annual Meeting. Located in the beautiful Rice Park District in downtown Saint Paul, The Saint Paul Hotel is just minutes from everywhere you want to be in the Twin Cities.

Our theme "Sustainability" for the 2006 conference appropriates most all aspects of our professional practice(s). As our Keynote Speaker defines this purpose, "Geoscientists are contributing to an ever-widening list of issues that relate to ensure human well-being. We help to ensure health by addressing toxic substances and waste disposal, and we secure our heritage by providing an understanding of our land, our oceans, the history of life, and a comprehension of our planet. We enhance our wealth by ensuring a supply of energy and materials and by guiding construction. We augment our security by helping society prepare for and cope with climate change and hazards. And we have broad contributions to make to the study of water, which more than any other topic, comprehensively dictates our well-being. Earth scientists will prosper as we focus our efforts on the needs of our society, and as we produce what is needed in a format that can readily be used by a broad range of our clients. And while doing so, we will continue to take a broad approach to our work, to ensure the progress of fundamental knowledge, to facilitate serendipity, and to prepare ourselves for unanticipated requirements. By relentlessly taking this approach, and by repeatedly re-inventing ourselves, geoscientists will have a secure future".

As we prepare for AIPG's 43rd Annual Conference, our broad ranging theme lends a cohesive approach based upon the fundamentals of the geosciences of our professions. It is our goal to maintain a common direction, but keep open the varied aspects we have confronted and will continue to confront for generations to come. Expanding new technologies and applying what we have learned to what we confront will always be an on-going issue to the geoscience profession. However, AIPG's annual conference will always bring us something new to sustain the science and technologies. We have prepared for the 2006 Conference to provide you with diversity, sustainable diversity. Through technical sessions, short courses, keynote presentation, field trips and more, we plan on hosting an Annual Conference that results in years of continued professional success. From the shield, to the field, we welcome you to Minnesota. Thank you for giving us the opportunity to host the 43rd Annual Conference and we promise you the understanding of "Minnesota Nice". Check our website for details www.aipg2006.org

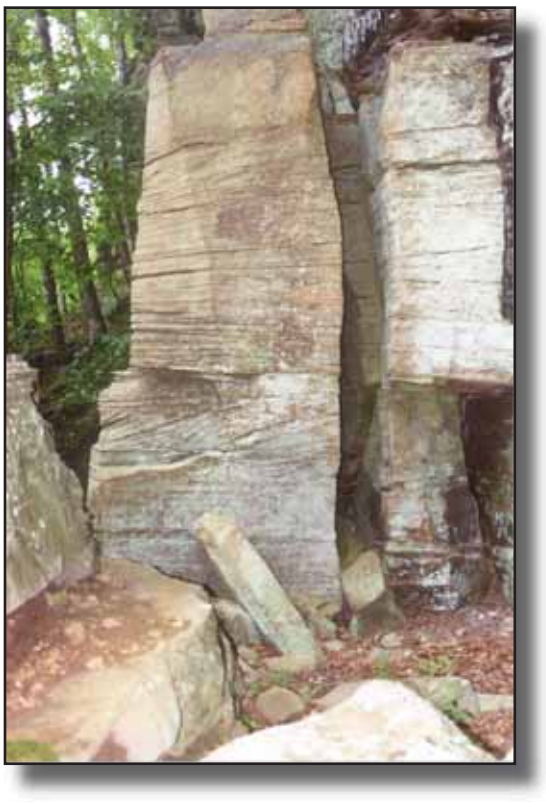
See you in September!

Michael W. Ruddy, CPG, PG, RG, Program Co-Chair
Jane M. Willard, CPG, PG, Program Co-Chair

PROGRAM

SATURDAY, SEPTEMBER 23, 2006	
9:30 am Saturday – 3:00 pm Monday	FIELD TRIP 1 - North Shore/ Mesabi Range (9/23 - 9/25)
9:00 am-5:00 pm	Registration
SUNDAY, SEPTEMBER 24, 2006	
9:00 am - 8:00 pm	Registration
10:00 am - 2:00 pm	SOCIAL TRIP 1 - Welcome to the Mississippi River Brunch Cruise
MONDAY, SEPTEMBER 25, 2006	
8:30 am - 9:00 am	Executive Committee Continental breakfast
9:00 am - 3:00 pm	Executive Committee Meeting
9:00 am - 9:00 pm	Registration
10:00 am - 9:00 pm	Exhibits
9:00 am - 12:30 pm	SHORT COURSE 4 - What is All Appropriate Inquiry (AAI)?
11:30 am - 4:30 pm	SOCIAL TRIP 2 - St. Paul Historic Tunnels, Waterfalls, Bluffs, and Fossils Tour
12:30 pm - 4:00 pm	SHORT COURSE 1 - Tune up for PG and FG Exams
6:00 pm - 8:00 pm	Glacial Icebreaker, cash bar
TUESDAY, SEPTEMBER 26, 2006	
7:00 am - 8:00 am	Past Presidents Breakfast Meeting
7:00 am - 8:00 am	Women in AIPG Breakfast Meeting
7:30 am - 9:30 am	2006 Advisory Bd Meeting
8:00 am - 5:30 pm	FIELD TRIP 4 - Twin Cities Aggregates
7:30 am - 5:30 pm	FIELD TRIP 5 - Pine County Karst
8:30 am - 3:30 pm	Technical Sessions
9:00 am - 9:00 pm	Registration
9:00 am - 4:00 pm	SOCIAL TRIP 3 - Wisconsin Amish Country and Crystal Cave Tour
9:45 am - 11:45 am	2006/2007 Advisory Board Meeting
10:00 am - 7:00 pm	Exhibits
10:00 am - 4:00 pm	Student posters
11:30 am - 1:00 pm	Annual Business meeting/lunch Harvey Thorleifson, Director of the Minnesota Geological Survey: Keynote Speaker
1:30 pm - 3:30 pm	2006/2007 Executive Committee Meeting
7:00 pm - 9:00 pm	Awards Banquet

WEDNESDAY, SEPTEMBER 27, 2006	
7:00 am - 8:00 am	Foundation Trustees Breakfast
7:30 am - 5:30 pm	FIELD TRIP 2 - St. Croix River
8:00 am - 5:30 pm	FIELD TRIP 6 - Karst Geology of Southeastern Minnesota
8:30 am - 3:30 pm	Technical Sessions
9:00 am - 5:00 pm	Registration
10:00 am - 5:00 pm	Exhibits
10:30 am - 2:30 pm	SOCIAL TRIP 4 - Wabasha Street Caves and St. Paul Gangsters Tour
3:30 pm - 4:30 pm	Roundtable Session on Sustainability
6:00 pm - 10:00 pm	Social Banquet at the Science Museum The Kensington Runestone: Compelling New Evidence by author/ geologist Scott Wolter, PG, CPG
THURSDAY, SEPTEMBER 28, 2006	
7:00 am - 8:00 am	Speakers Breakfast
7:00 am - 7:00 pm	FIELD TRIP 3 - Glacial Lake Agassiz
9:00 am - 12:30 pm	SHORT COURSE 2 - Forensic Geology
12:30 pm - 4:00 pm	SHORT COURSE 3 - Intro to Phase I Environmental Site Assessment



Fractures in cross bedded pre-Cambrian age Hinckley sandstone, Sandstone, Minnesota (see Field Trip 5).

TECHNICAL PROGRAM

KEYNOTE SPEAKER
Geoscience for the Needs of Society;

Harvey Thorleifson

Date: Tuesday, September 26
Time: Annual Business Lunch
Cost: Free with Registration

According to our engaging Keynote Speaker: Geoscientists are contributing to an ever-widening list of issues that relate to ensuring human well-being. We help ensure health by addressing toxic substances and waste disposal, and we secure our heritage by providing an understanding of our land, our oceans, the history of life, and a comprehension of our planet. We enhance our wealth by ensuring a supply of energy and materials, and by guiding construction. We augment our security by helping society prepare for and cope with climate change and hazards. And we have broad contributions to make to the study of water, which more than any other topic comprehensively dictates our well-being. Earth scientists will prosper as we focus our efforts on the needs of our society, and as we produce what is needed in a format that can readily be used by a broad range of clients. And while doing so, we will continue to take a broad approach to our work, to ensure the progress of fundamental knowledge, to facilitate serendipity, and to prepare ourselves for unanticipated requirements. By relentlessly taking this approach, and by repeatedly re-inventing ourselves, geoscientists will have a secure future.

Harvey Thorleifson, Ph.D., has been the Director of the Minnesota Geological Survey since 2003. He is from western Manitoba, did his undergrad at University of Winnipeg, and completed a Masters thesis on Lake Agassiz history at University of Manitoba. His Ph.D. at University of Colorado in Boulder dealt with the Hudson Bay Lowland. At the Geological Survey of Canada from 1986 until 2003, he worked on gold exploration, diamond exploration, and water-related projects from Alberta to Hudson Bay. He was the 2003-2004 President of the Geological Association of Canada, and is current President of the Canadian Geoscience Council. He is pleased to now be filling the role of Minnesota State Geologist, to be a proud member of the Minnesota Geological Survey team, and to be working with the full array of earth science agencies that serve the needs of the people of Minnesota, in relation to economic prosperity, public health, natural hazards, as well as appreciation and preservation of our natural heritage.

TECHNICAL SESSIONS and ROUNDTABLE SESSION on *Sustainability*

Date: Tuesday & Wednesday, September 26 & 27
Time: 8:30 am to 3:00 pm
Roundtable: Wednesday, September 27
Time: 3:30 to 4:30 pm
Cost: Covered by Registration

The theme of our annual meeting is "Sustainability." Proposed Technical Sessions include Energy, Minerals, Water, Toxics, Policy, and International Aspects. We seek to present a breadth of educational and entertaining material related to the topic and explore together the meanings that sustainability can hold for professional geology and those who practice it. The Roundtable will allow us to collectively assess how AIPG can incorporate the theme and your contributions into our future endeavors.

SHORT COURSE 1
Tune-up for PG & FG Exams;

Presenters TBD

Date: Monday, September 25
Time: 12:30 to 4:00 pm
Cost: $60 ($80 after August 23)
Students: $25 ($35 after August 23)

Not everyone passes ASBOG's Professional Geology or Fundamentals of Geology exam the first time out, or maybe even the third. Help even your chances by finding out what's important and why. This course may be part review, but it can also offer valuable insights into the thought process you will need to cultivate along the road to professional licensure and the practice of geology. [Minimum enrollment necessary.]

SHORT COURSE 2
Forensic Geology;

Scott Wolter, PG, CPG

Date: Thursday, September 28
Time: 9:00 am to 12:30 pm
Cost: $75 ($100 after August 23)
Students: $25 ($35 after August 23)

This course will investigate several different aspects of forensic analysis of geologic problems focusing primarily on the use of petrography. The course will present the basics of what Petrographic analysis is, the types of laboratory equipment used, and discussion about several examples of interesting geologic problems investigated using these forensic methods. The case studies to be discussed include several types of concrete problems, fire damage assessment at the Pentagon after the 9-11 terrorist attacks, material forensics on a murder case in Las Vegas, and comparative analysis of the weathering of tombstone to determine the relative age of the weathering of the inscription on the Kensington Rune Stone. The course will also discuss the issues surrounding the disparity in the interpretation of data between "hard" scientists and opinion-driven disciplines. [Minimum enrollment necessary.]

Scott Wolter is the President of American Petrographic Services, St. Paul, MN.

SHORT COURSE 3
Intro to Phase I Environmental Site Assessment;

Jane Willard, PG, CPG

Date: Thursday, September 28
Time: 12:30 to 4:00 pm
Cost: $75 ($100 after August 23);
Students: $25 ($35 after August 23)

Students and entry-level geologists are not always well-informed about the expectations in the consulting world. Once of the basic services completed by environmental consultants is the Phase I Environmental Site Assessment (ESA). This course will provide a well-rounded introduction to the subject: what ESAs are, why they are necessary, how they are conducted, and what the ramifications may be. The presenter will offer

SHORT COURSES (CONTINUED)

valuable insights from her nearly three decades of ESA experience. [Minimum enrollment necessary.]

Jane Willard is the President of EnPro Assessment Corp, St. Paul, MN.

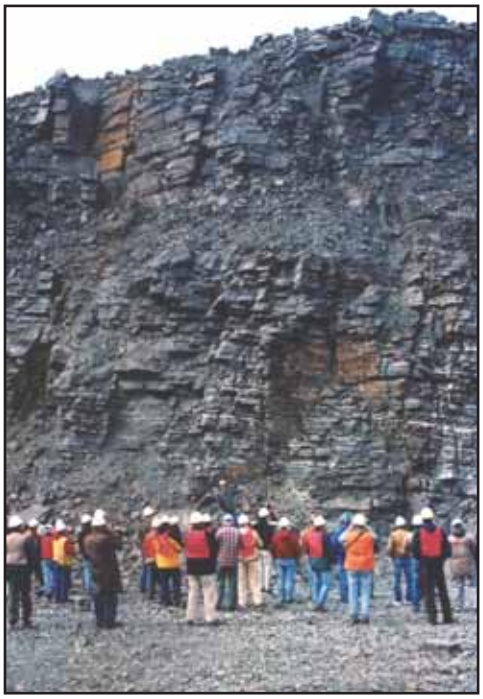
SHORT COURSE 4

What is All Appropriate Inquiry (AAI)?;

Presenters TBD

Date: Monday, September 25
Time: 9:00 am to 12:30 pm (pending sufficient advance interest)
Cost: $85 ($110 after August 23);
Students: $25 ($35 after August 23)

On the heels of the 2002 Brownfields Act, the next wave to hit environmental consulting is the EPA's new All Appropriate Inquiry (AAI) standard. Under AAI, Superfund legal liability protection will require an enhanced level of due diligence for Phase I ESAs compared to what most environmental consultants have produced up to this point. As the AAI standard takes effect in November, this course will occur at an ideal time to help professionals learn what to expect and how to adapt to the changing legal-regulatory framework. [Minimum enrollment necessary.]



FIELD TRIPS

FIELD TRIP 1 — North Shore/Mesabi Range

Three-Day Field Trip
September 23-25, 2006 — 9:30 am Saturday - 3:00 pm Monday

Geology of the Eastern Mesabi Iron Range and North Shore of Lake Superior

The Mesabi Iron Range is the largest iron producing region in the United States and ranks amongst the largest in the world. The discovery of the Mesabi Range proved elusive, as it was crossed over by prospectors many times on their way to gold and iron deposits in the Vermillion Range, in the far northern region of the state. Some of the earliest geologic descriptions came in 1866 from Henry Eames for the rocks that we now know as the Mesabi Range, but it was not until November 1890, that the rich iron ore bodies were discovered near Mountain Iron, Minnesota.

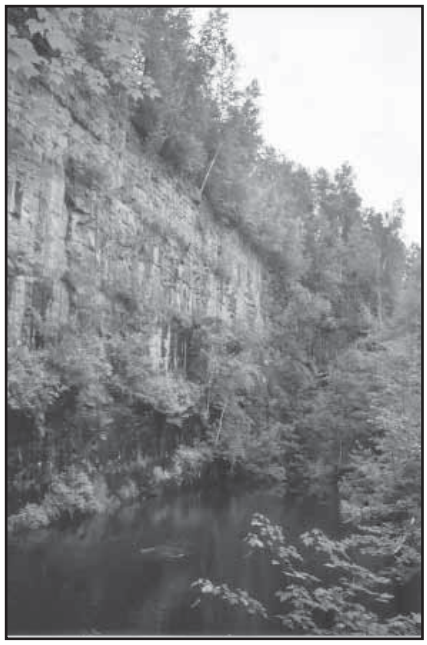
The Biwabik Iron Formation (BIF) extends for approximately 120-miles through northern Minnesota, ranging from 0.25 to 3 miles wide. The silica-rich BIF (called taconite), gently dips southeast and is comprised of 30-40 % iron and 40-50 % SiO2 (plus other minor components). The detailed origin of the iron mineralogy is exceedingly complex. Compounding this complexity is the unique nomenclature and subdivisions of the BIF used by each mine and various geologists. Across the Mesabi Range, fractures, faults and other natural processes have allowed for leaching of the silica from the BIF leaving zones of iron-enriched pockets which were the early targets for miners searching for natural grade ore. These areas (more than 500) have essentially been completely mined out, forming some of the most characteristic post-mining topography across the range. The discovery of the natural grade ore was very important in the United States becoming an industrial giant, and supplied the mineral resources for WWI, WWII, and post-war construction activities. As the natural grade ores were depleted, mining today consists primarily of the more silica rich BIF, and a taconite process was developed at the University of Minnesota. Taconite is an economic term for iron-formation from which the iron can profitably be extracted after fine grinding, followed by magnetic separation and palletizing (Morey, 1993). Today, six taconite plants are in production across the Mesabi Range.

This trip will begin in the peneplaned Archean craton of the Lake Superior area that formed the platform for the Paloeproterozoic depositional environment for the BIF rocks. This regional continental margin extends from Minnesota, Michigan and into Wisconsin. Stops will be also made in active and inactive mines, mine reclamation areas, as well in pre-Cambrian stromatolite beds.

FIELD TRIPS

FIELD TRIP 2
Geology and Hydrogeology Along the St. Croix River

One-Day Field Trip
September 26, 2006 — 7:30 am - 5:30 pm



The St. Croix River was originally designated in the 1968 Wild and Scenic River Act. Water has shaped the geology, culture and history of the St. Croix River valley from a fiery Precambrian oceanic rift system to the encroachment of warm shallow Paleozoic seas, followed by steely-cold Quaternary glaciers advancing and retreating up and down the spine of the valley. Geology controls this natural beauty, unique ecology and varied environments as evident in the varied landscape, soil, sediment and rock formations. The bedrock in the upper portion of the watershed consists primarily of Precambrian lava flows, shale and sandstones, and igneous and metamorphic crystalline formations. Much of the bedrock formations in the lower portion of the watershed consist of Cambrian and Ordovician marine deposits comprising sandstones, shales, and limestone. The age of outcrops southward through the Valley is generally indicative of progressively younger bedrock. The glacial deposits are wide and varied, with glaciation during the Wisconsinan the most prevalent and exposed, deposited as the last glaciers receded up the valley more than 10,000 years ago.

The field trip will explore a small fraction of the rich geology and hydrogeology along the St. Croix River Valley. We will have stops in both Minnesota and Wisconsin that will investigate mineralogy, aggregate industry and mining issues, geomorphology, hydrogeology and groundwater dependant resources, mineral collection, and the splendor of the geologic profession.

Stop 1 Boom Site - Stillwater, Minnesota
Stop 2 Pine Needles Cabin - Marine on the St. Croix
Stop 3 Interstate Park - Taylors Falls, Minnesota
Stop 4 Dresser Trap Rock - Dresser, Wisconsin
Stop 5 Crex Meadow - Grantsburg, Wisconsin
Stop 6 Sand Rock Cliffs Park - Grantsburg, Wisconsin
Stop 7 Rock Creek Pit Rock Creek, Minnesota
Stop 8 Beroun Moraine Pit - Beroun, Minnesota

FIELD TRIP 3
Glacial Lake Agassiz

One-Day Field Trip
September 26, 2006 — 7:00 am - 7:00 pm

This field trip investigates the largest of the glacial lakes, Lake Agassiz, that covered northwest Minnesota, parts of South and North Dakota and the Canadian provinces of Manitoba, Saskatchewan and Ontario. The lake, now gone, was the largest in North America measuring more than 700 miles long and 200 miles wide, expanding over 110,000 square miles. In contrast, Lake Superior, now the largest lake in North America covers an area of only 32,700 square miles. Glacial Lake Agassiz (GLA) formed when glaciers blocked the drainage to Hudson Bay almost 12,300 years ago. GLA lasted until approximately 7,000 years ago. The southern outlet of GLA was Glacial River Warren, which excavated the valley now occupied by the Minnesota River. Lake Agassiz water levels dropped from the Herman beach, the highest beach, down to the level of the Campbell beach, and then later drained to leave the landforms we see today in and around the Red River Valley. This valley now is home to glacial landforms such as kettles, kames, eskers and a rich soil profile on which the regional economy depends for agriculture production. The lake was named in 1879, in honor of Louis Agassiz, a Swiss glacial theorist.

FIELD TRIP 4
Twin Cities Aggregates

One-Day Field Trip
September 28, 2006 — 8:00 am - 5:30 pm

This trip is intended to provide a broad overview of the aggregate mining industry of the Twin Cities Area. We will make stops at some of the largest aggregate mines and quarries in the state, many of these companies are also involved in related businesses such as asphalt and concrete production aggregate recycling and general contracting. Reclamation of urban mining sites will also be addressed at several of the stops.

FIELD TRIPS

The highest-quality aggregate deposits in the seven-county metropolitan area consist of sand and gravel laid down about 15,000 to 20,000 years ago by meltwater from a glacial lobe that advanced from the northeast through the Lake Superior basin during the last glaciation. The Superior-lobe gravels contain abundant particles of durable, non-reactive crystalline rock, and only minor amounts of undesirable rock types such as shale or sulfide-bearing slate. During the last glaciation, the southern edge of Superior-lobe ice lay for some time across central Washington, northern Dakota, and eastern Hennepin counties. Thick, coarse deposits of gravel were deposited within and just beyond this ice margin. The most valuable deposits of Superior-lobe gravel are those that are not deeply buried by the younger Des Moines lobe deposits, which moved into the area from the west and northwest a short time after the Superior-lobe ice melted.

The only bedrock deemed valuable as a source of aggregate in the seven-county metropolitan area is dolostone (sometimes termed dolomite) of the Prairie du Chien Group. Magnesian limestone of the Platteville Formation was formely quarried for aggregate and building stone, but it is no longer used because of its poor mechanical strength and abundant shale partings. The following stops will also feature several different mining techniques from blasting to underwater dredging:

Stop 1 Aggregate Industries Lakeland Plant - Lakeland, Minnesota

Stop 2 Aggregate Industries Nelson Plant - Grey Cloud Island, Minnesota

Stop 3 Aggregate Industries Larson Quarry - Grey Cloud Island, Minnesota

Stop 4 Fischer Market Place/Empire Township Mining District Empire - Apply Valley, Minnesota

Stop 5 Ed Kramer & Sons - Burnsville Quarry - Burnsville, Minnesota

Stop 6 Maple Grove Gravel Mining District - Maple Grove, Minnesota

FIELD TRIP 5 — Pine County Karst

One-Day Field Trip
September 26, 2006 — 7:30 am - 5:30 pm

Pine County, Minnesota is an unusual location to look for karstic features, as the county is underlain by thick sequences of arkosic sandstones, basalts, granites, and other igneous bedrock. These karst features present two challenges to landowners, water suppliers, county and local governments, and environmental professionals. Although surface karst features are best known in areas underlain by carbonate bedrock, they can also form over quartzite or quartz arenite sandstone. Complicated by glaciation, the areas which have undergone solutioning can be mistaken for common glacial features such as lakes or kettle and kame topography.

In central Pine County, the sinkholes have formed through the movement of surface material into an underlying fractures in the Hinckley Sandstone. This infiltration occurs rapidly through the unconsolidated glacial deposits, and transports fine-grained sediment into the underlying system of joints in the Hinckley Sandstone. Such sinkholes range from less than one meter to more than 100 meters in size.

The field trip will explore a small fraction of the rich geology and hydrogeology of Pine County. With the recent publication of the county atlas by the Minnesota Geological Survey (geology) and the Minnesota Department of Natural Resources (hydrogeology), as well as graduate student theses and mineral exploration, Pine County has been a cornerstone of geologic research. We will investigate some of the hydrogeologic features in the county, with stops centered in and around the Sandstone-Askov area.

Stops include an overview of the Hinckley sandstone, the glacial overburden, the Hinckley fault, the Beaver sinks, conservation farming at the Kroon farm, virgin spring discharge in Banning State Park, caves and fracture traces in Robinson Park, Sinkholes along the Kettle River, and other karst features. Participants will depart St. Paul and travel by bus to Pine County, MN and return. The cost of the trip includes a guidebook, bus transportation, any park fees, lunch and refreshments\beverages. Attendees should be prepared for moderate hiking and should be weather-prepared for a Minnesota fall day.

FIELD TRIP 6 — Karst Geology of Southeastern Minnesota

One-Day Field Trip
September 27, 2006 — 8:00 am - 5:30 pm

This field trip will explore a small fraction of the rich geology and hydrogeology of Southeastern Minnesota. We will have stops in both Olmsted and Fillmore Counties that will investigate the geology and hydrogeology of the Decorah edge and the main karst area in Minnesota. Karst is an efficiently drained landscape that forms on soluble rock. Karst is characterized by caves, sinkholes, a lack of surface drainage and other climatically controlled features, and is mainly, but not exclusively, formed on limestone. Karst features arise when rain falls and infiltrates the soil, where the availability of

FIELD TRIPS

carbon dioxide causes the formation of weak carbonic acid. If the slightly acidic soil water contacts with soluble carbonate rocks, dissolution occurs, with calcium, magnesium and bicarbonate ions as by products. Dissolution of the rock is focused where water flow and surface area are greatest, and this is usually along areas of pre-existing fractures, and partings or bedding planes. These features easily conduct the water, and are gradually widened by dissolution, sometimes widening greatly until they become caves or a collapse feature occurs at the surface (sink hole). Karst aquifers are called triple-porosity aquifers (see Worthington, 1999) because water moves within three distinct, but connected, frameworks: matrix, fractures, and conduits. In the matrix, ground water moves relatively slowly, in fractures velocities can be higher, and in conduits the water can move exceedingly fast.

The field trip will explore a small fraction of the rich geology and hydrogeology of Southeastern Minnesota. We will have stops along Highway 52 in both Olmsted and Fillmore Counties that will investigate the geology and hydrogeology of the Decorah edge and the main karst area in Minnesota. We will start with a review of the Decorah Edge hydrogeology, water chemistry, and public policy.

Then we will visit Forestville/Mystery Cave State Park near Forestville, Minnesota. The cave is a maze of over twelve miles of passage that exists in two rock layers with strikingly different compositions. During dry years, the entire South Branch Root River sinks into the cave through gravel filled crevices in the river bottom.

Stop 1 Decorah Edge Geology - Rochester, Minnesota
Stop 2 Decorah Edge Research Center - Olmsted County, Minnesota
Stop 3 Karst Feature - Fillmore County, Minnesota
Stop 4 Forestville/Mystery Cave State Park - Forestville, Minnesota
Stop 5 Forestville/Mystery Cave Environment Center - Forestville, Minnesota

SOCIAL EVENTS

Glacial IceBreaker Welcoming Reception

Date: Monday, September 25
Time: 6:00 to 8:00 pm
Cost: Free with Registration

Minnesota is the land where Ice-Age glaciers made their last-gasp efforts and their deposition left an appealing and diverse landscape. St. Paul sits at the confluence of glacial activity in the state, so it is a fitting place to hold an icebreaker to welcome our guests. It may be "fly-over country," but we like to consider ourselves a small-town big-city kind of place "where everything is above average." At the same time, we like to serve up a helping of Minnesota Nice. Please stop by the Welcoming Reception to get settled in and greet your colleagues.

Downtown St. Paul Geology and Architecture AND Historic Summit Avenue Tours

Date: At your Leisure
Time: At your Leisure
Cost: Free (information comes with registration materials)

Downtown St. Paul is home to many architectural wonders from the early Twentieth Century, starting with your home base the St. Paul Hotel. A prime foundation for the grandeur of these historic structures is the diversity of building stones used. The sense of history is palpable in St. Paul, and this self-guided walking tour is a good place to begin feeling at home during your stay.

If you like to range farther afield, venture by wheel or foot on this self-guided tour along one of the most beautiful and opulent Victorian avenues in America. Historic homes and early fall color abound over four miles stretching from the St. Paul Cathedral to the Mississippi River gorge. This is St. Paul's Sunday Drive.

Social Banquet – The Kensington Runestone: Compelling New Evidence

Date: Wednesday, September 27
Time: 6:00 to 10:00 pm
Cost: $65 (includes dinner)

Scott Wolter will offer an engrossing presentation on the history of the enigmatic Kensington Runestone and his experiences studying it from a geologic and scientific perspective. The feature social event of the 2006 meeting is our banquet on the upper level of the Science Museum of Minnesota, with a panoramic view overlooking the Mississippi River waterfront and bluffs. The SMM is a novel architectural highlight of St. Paul, housing a world-class museum. Attendees will also receive a complimentary admission to the museum during the day (10:00 am to 5:00 pm).

Scott Wolter, PG, CPG is President of American Petrographic Services, St. Paul, MN.

OTHER SOCIAL OPTIONS

Social outings abound in the Twin Cities Metropolitan Area. With sufficient advance interest, we may be able to help with arrangements for group events. Some exciting options you may want to consider are: Mall of America, Minneapolis Institute of Arts, Mill City Museum, Minneapolis Chain of Lakes, Minnehaha Falls/Fort Snelling, State Capitol, Minnesota History Center, St. Croix River valley, Capital City Trolleys, and various cafes and eateries, among others.

SOCIAL EVENTS

SOCIAL OUTING 1 — Welcome to the Mississippi River Brunch Cruise

Date: Sunday, September 24
Time: 10:00 am to 2:00 pm
Cost: $45 (includes lunch)

The Mississippi River is the heart of the nation and also lies at the heart of St. Paul. This classic river boat cruise departs from the docks downtown and heads upriver past classic landmarks and park land to the confluence with the Minnesota River, overlooked by historic Fort Snelling. We would like to welcome you to St. Paul on this brunch cruise complete with tour narrative and an old-time banjo player.

SOCIAL OUTING 2 — St. Paul Historic Tunnels, Waterfalls, Bluffs and Fossils Tour

Date: Monday, September 25
Time: 11:30 am to 4:30 pm
Cost: $45 (includes lunch)

Travel to the heights and depths of St. Paul's special geographic setting. The late-glacial carving of the Mississippi River gorge left picturesque bluffs overlying soft sandstone ideal for tunneling. Waterfalls remain on the cliffs where bluff meets gorge. People have been drawn to these features throughout St. Paul's history, so the landscape holds interesting stories. An added bonus: since the characteristic rocks are Ordovician reefs, there are abundant hot spots for fossil hunting. [While not strenuous, this outing involves some walking.]

SOCIAL OUTING 3 — Wisconsin Amish Country and Crystal Cave Tour

Date: Tuesday, September 26
Time: 9:00 am to 4:00 pm
(pending sufficient advance interest)
Cost: $60 (includes lunch)

Two prime features of southeastern Minnesota and Wisconsin are the Amish enclaves and the karst landscape with easily accessible limestone caves. We will explore these environs on this pleasant day-trip. [This outing involves walking on uneven ground in cool dark surroundings, but it is not expected to be overly strenuous.]

SOCIAL OUTING 4 — Wabasha Street Caves and St. Paul Gangster Tour

Date: Wednesday, September 27
Time: 10:30 am to 2:30 pm
Cost: $45 (includes lunch)

Step out and meet some real characters right out of the gangster era in St. Paul. This outing begins with a tour of the unique Wabasha Street Caves which were transformed into a swank nightclub in the 1930s and remain hopping today. Then we enjoy the company of a couple character guides during a bus tour of gangster-related historic sites in the area. This event promises to be both entertaining and informative.

LODGING

St. Paul Hotel

AIPG has reserved a limited number of rooms at $109.00 for single occupancy on a first come first served basis. Additional rooms may be reserved at a significantly higher rate. A limited number of suites are also available at a discount. Please make your reservations through the St. Paul Hotel by calling (651) 292-9292 or 1-800-292-9292. You can find additional information about the hotel at www.stpaulhotel.com.

Maps and Directions to The Saint Paul Hotel

The Saint Paul Hotel is conveniently located in the beautiful Rice Park District of downtown Saint Paul, Minnesota, on 350 Market St. near the Ordway, Xcel Energy Center and RiverCentre complex, and across the street from Lawson Software and St. Paul Travelers.

For getting around the city, we suggest you inquire with the Concierge for directions on where you need to go. You can also pick up a taxi from the airport or downtown. A taxi from the airport costs approximately $20 one way.

Conveniences

- 15 minutes from the Minneapolis/Saint Paul International Airport
- 15 minutes from the Mall of America and Bloomington
- 15 minutes from the Metrodome and Target Center
- 15 minutes from Minneapolis
- Walking distance from Saint Paul's RiverCentre, Ordway Center, and Xcel Energy Center

Airport Transportation

Transportation to and from the Minneapolis/St. Paul International Airport is available via taxi (approximate cost $20 each way) or via Super Shuttle 1-800-258-3826 (shared van, multiple stops, $12 per person one way or $20 round trip).

The hotel van is also available to the airport for $15 per person, booked based upon availability through the Concierge. We are not able to pick up passengers from the airport at this time.

2006 NATIONAL AIPG MEETING REGISTRATION FORM

NAME (Last) (First) (Middle Initial)	NAME FOR BADGE	Meeting Status	
		Speaker	
COMPANY/INSTITUTION	CPG or MEMBERSHIP NO.	Exhibitor	
		Session Chair	
ADDRESS		Exec. Comm.	
		Membership	
		CPG	
CITY, STATE, ZIP CODE	COUNTRY	Member	
		Student	
PHONE	E-MAIL ADDRESS	Past President	
***SPOUSE/GUEST NAME	NAME FOR BADGE		

Spouse/Guest Registration includes admission to Icebreaker and Exhibits

FEES AND PAYMENT INFORMATION

ANNUAL MEETING REGISTRATION	On or Before 8/23/06	After 8/23/06	Amount
Full Registration (Member*)	$250.00	$300.00	
Full Registration (Non-Member)	$275.00	$325.00	
Daily Registration (Member*) ⊐Sat ⊐Sun ⊐Mon ⊐Tues ⊐Wed	$100.00	$125.00	
Daily Registration (Non-Member) ⊐Sat ⊐Sun ⊐Mon ⊐Tues ⊐Wed	$125.00	$150.00	
Spouse/Guest	$50.00	$50.00	
Student** (Full Registration)	$25.00	$35.00	
Daily Student Registration** Spec. Day(s)_____	$10.00	$20.00	

*AIPG Members Only **Student Confirmation Required ***Registration Required

FIELD TRIPS	Before 8-23/After	No. Attending	Amount
No. 1 North Shore/Mesabi Range (9/23-25)	$225.00/$250.00		
No. 2 St. Croix River (9/27)	$85.00/$95.00		
No. 3 Glacial Lake Agassiz (9/28)	$90.00/$100.00		
No. 4 Twin Cities Aggregates (9/26)	$80.00/$90.00		
No. 5 Pine County Karst (9/26)	$80.00/$90.00		
No. 6 Karst Geology of Southeastern Minnesota (9/27)	$80.00/$90.00		

SHORT COURSES	Before 8-23/After	No. Attending	Amount
No. 1 Tune-up for PG & FG Exams(Mon 9/25) CEUs Available/PDHs (MN)	$70.00/$80.00 $25.00/35.00S**		
No. 2 Forensic Geology (Thurs 9/28) CEUs/PDHs	$75.00/$100.00 $25.00/35.00S**		
No. 3 Intro to Phase I Environmental Site Assessment (Thurs 9/28) CEUs/PDHs	$75.00/$100.00 $25.00/35.00S**		
No. 4 What is All Appropriate Inquiry (Mon 9/25) CEUs/PDHs	$85.00/$110.00		

SOCIAL EVENTS	Unit Cost	No. Attending	Amount
Awards Banquet @ St. Paul Hotel (Tues 9/26)	$60.00/70.00		
Social Banquet @ Science Museum (Wed 9/27)	$65.00		
Downtown St. Paul Geology & Architecture and/or Historic Summit Ave (at your leisure)	free/self guided		
Social Trip 1 – Welcome to the Mississippi River Brunch Cruise (Sun 9/24)	$45.00		
Social Trip 2 – St. Paul Historic Tunnels, Waterfalls, Bluffs, and Fossils Tour (Mon 9/25)	$45.00		

Social Trip 3 – Wisconsin Amish Country and Crystal Caves Tour (Tues 9/26)	$60.00		
Social Trip 4 – Wabasha Street Caves and St. Paul Gangsters Tour (Wed 9/27)	$45.00		
Women in AIPG Breakfast (9/26)	$30.00		
Ice Breaker (9/25) (Must Show Badge)	Complimentary		
Speakers/Moderators Breakfast (9/28)	Complimentary		
Business Lunch (9/26)	Complimentary		
Foundation Trustees Breakfast (9/27)	Invitation Only		
Past-Presidents Breakfast (9/26)	Invitation Only		
		TOTAL AMOUNT DUE	

National and Sectional Meetings	Attending
National Executive Committee Meeting (9/25)	yes / no
2006 Advisory Board Meeting (09/26)	yes / no
2006/2007 Advisory Board Meeting (9/26)	yes / no
2006-2007 Joint Executive Committee Meeting (9/26)	yes / no

Notes

- The Field Trips and Short Courses are subject to cancellation due to lack of participation.
- Registration fees for cancelled events will be refunded to registered attendees.
- Full Registration includes Ice Breaker, Technical Sessions, Exhibits, Business Meeting, Student Posters, Coffee Breaks, and Registration Package.
- CEU Credits Available.
- Please indicate if you have any special dietary requirements.

SPECIAL NEEDS/REQUESTS:_____

METHOD OF PAYMENT

TOTAL AMOUNT DUE $_____

PLEASE CHECK METHOD OF PAYMENT

☐ Check No._____ Enclosed (drawn in U.S. Dollars on a bank located in the US or Canada.)
☐ International Postal Money Order
☐ VISA ☐ MasterCard ☐ American Express *(Credit cards are processed in US dollar amounts only.)*

Card No._____ Expiration Date_____

Print name of cardholder:_____

REQUIRED: Credit Card Billing Address (street, city, state, and zip):

_____

_____

Authorized Signature_____

Mail to:
American Institute of Professional Geologists
1400 W. 122nd Avenue, Suite 250
Westminster, CO 80234
or fax to (303) 253-9220 or register on-line at www.aipg.org
National AIPG Phone Number is (303)412-6205

Refund Policy: Refunds of 100% will be given upon receipt of a written request until August 23, 2006. Notification and full refund for field trips or social activities will be given in case of required cancellations. Cancellations for full convention registration made between August 24, 2006 and September 18, 2006, will be assessed a charge of 10% of the registration fee (to cover administration costs). NO refunds will be given for cancellations received after September 18, 2006, or for no-shows after the meeting.

I understand that submission of this registration form gives AIPG the authority to utilize any photograph taken of me at the conference for conference related publicity (e.g., photo gallery on cd, web site, TPG....). AIPG agrees not to use my likeness for any other purpose. Please contact Catherine O'Keefe if you DO NOT wish to have your image used.

Exhibit Space 2006 National AIPG Annual Meeting

The 43rd Annual Meeting of the American Institute of Professional Geologists (AIPG) will be held at The Saint Paul Hotel in St. Paul, Minnesota on September 23 to 28, 2006. Hundreds of geoscience professionals, educators, and students from Minnesota and around the country are expected to attend. It will be a dynamic meeting with an impressive slate of technical sessions, workshops, and field trips that highlight various aspects of the geology of Minnesota and the surrounding region.

Each year AIPG offers exhibit space to businesses and organizations that are interested in increasing their visibility within the geoscience community. Companies have used it to increase exposure to their products or services. Colleges and universities have used this opportunity to recruit new students to their graduate programs. Groups use the opportunity to gather their members together for luncheon or breakfast meetings since many will plan to attend the technical sessions and field trips offered by AIPG. It is a win-win situation—organizations get an opportunity to communicate with members of AIPG, and members of AIPG are able to find out about what is new in the broader geoscience world.

The planning committee would like to extend to you an invitation to reserve space at this upcoming AIPG meeting. You can reserve an exhibit table for as little as $375 for the entire 4-day meeting (including pre-meeting Welcome Reception). Or you may reserve a room for a catered meeting/meal of your selection. Space is limited; therefore, it must be reserved on a first come first served basis. Please fill out the attached form and submit it with your payment to the address indicated.

Inquiries regarding reservations may be directed to either Kate Kleiter (651) 659-1319 or Paula Berger at (612) 343-0510.

Best Regards,

AIPG
Minnesota Section
Exhibits Planning Committee
www.aipg2006.org

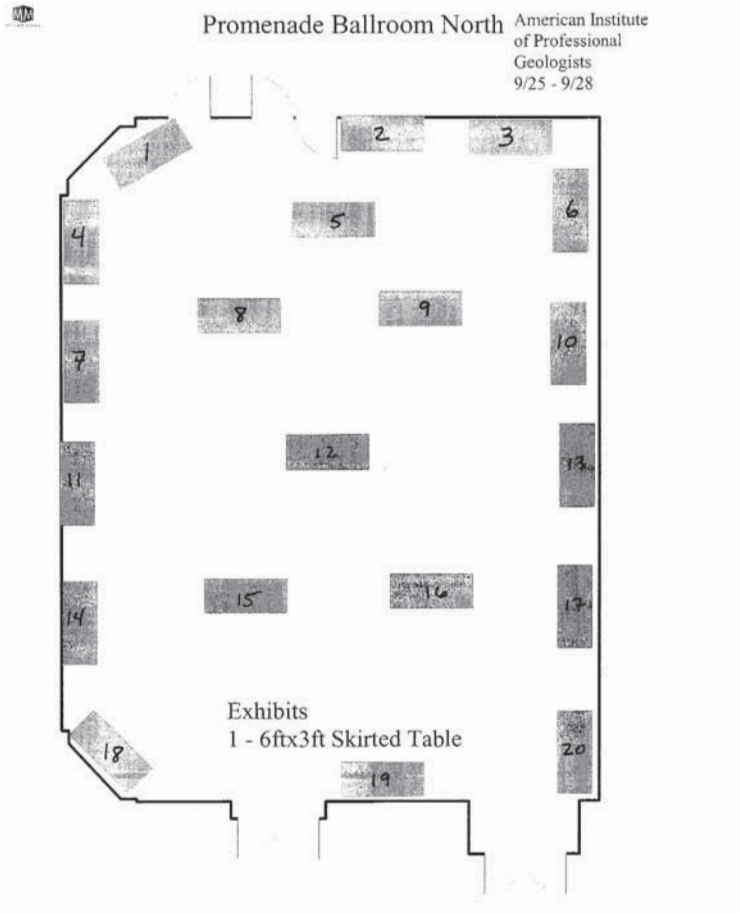


Exhibit Registration

AIPG 43rd Annual Meeting
September 23 -28, 2006
St. Paul, Minnesota
www.aipg2006.org

Contact Information:

Send confirmation and billing information to:

Organization_____ Contact_____

Mailing Address_____

City_____ State_____ Zip_____

Telephone_____ Fax_____

E-mail_____

Name of individual responsible for set up: _____

Telephone_____ Fax_____

E-mail_____

Note: Exhibit fee does not include meeting registration. Two Exhibitor badges will be provided at exhibit registration check-in. Exhibitor or meeting registration badges must be worn by all persons in the exhibit area.

$375 per space _____ number of spaces = _____ Total Reservation Fee

(includes 6-foot draped table. two chairs, and electrical outlet)

Additional costs may apply for special hook-ups. Please call for more information.

Note 1st, 2nd, and 3rd choice for exhibit location below. All exhibit locations are assigned on a "first come-first served" basis. AIPG will attempt to assign requested locations; however, cannot guarantee the requested location will be available.

1st:_____

2nd:_____

3rd:_____

Make check or money order payable to AIPG.

Payment for reserving exhibit space is due at the time the Exhibit Registration form is submitted.

Submit this form with payment to:

Mail to: Kate Kleiter
American Engineering Testing, Inc.
551 Cleveland Avenue North
St. Paul, MN 55114

phone: 651-659-1319
fax: 651-659-1379
kkleiter@amengtest.com

Scott Tinker's *The I in BusIness EthIcs*, TPG, March/April 2006

Dear Editor:

An excellent article, all told, but it starts out on the wrong foot with the first two words: *Ethics are*. Ethics **is**, of course, a singular noun. Ethics is not the plural of *ethic* any more than physics is the plural of *physic*. Just like its contradictory noun, *politics*, ethics **is**, and politics **is**, even if the twain seldom meet.

Unfortunately, this tends to lead one afield as the article continues. A proper definition of ethics is necessary to any discussion of it. Many of the difficulties with trying to solve "ethical problems" are founded in definition. The dictionary would seem to make that all but impossible, but we may back into it by way of its adjective *ethical*. I have arrived at a definition that seems to work in all cases where it is strictly applied: *the system of universal moral principles*. And time is not an issue. What was ethical *then* is ethical *now*, and will be in the future. Ethics is, and must be, inviolate. Otherwise one slides into the morass of moral relativism, where nothing is certain and anything is possible.

Mr. Tinker's framing thoughts are well-put, although there's more black and white than he allows. He's oh-so-right that individuals, not institutions, have ethics, and that the best place to look for it is in the mirror. The individual and humanity have ethics intrinsically--cultures, institutions and other groups do not. Instead they have *values,* which they may define as they see fit. Values are no more to ethics than ethics is to the law, which is itself a system of values that go along with *politics.*

This is no reflection on the value of Mr. Tinker's article; it is rather a common mistake made by many modern philosophers that leads to Rushworth Kidder's *right vs. right* scenario (a copout), and Bernard Gert's trashing of both the golden rule and Kant's categorical imperative. Kidder confuses ethics with values, while Gert's clever nominalism/deconstructionism stresses the *letter* while ignoring the *spirit* of definition.

Ethics is a fascinating subject with far-reaching benefits, and is not really as complex as some would make it. We just have to get back to the basics, avoid personal agenda and begin with truth. Applying ethics will go a long way toward making the world a better place.

Fred L Fox, CPG-01273

Response

I appreciate Fred Fox's thoughtful response to my article "The I in BusIness EthIcs," *TPG*, March/April 2006. I do not pretend to be an expert in grammar or ethics! However, Webster's, American Heritage, and Random House dictionaries all support usage of the word ethics as either singular or plural. The Columbia Guide to Standard American English (1993) adds some clarity: "Nouns ending in -ics, particularly those that are the names of topics or subjects of study, such as acoustics, economics, ethics, politics, and statistics, are treated as singular...Several of them, however, can be treated as either singular or plural: Ethics is a subject you ought to take. His ethics are not admirable."

Mr. Fox and I agree that the subject of ethics is largely a conversation about the individual. We find common ground in observing the rule that subjects and verbs agree in number. I trust that we now can come to some accord that ethics are important and quite complex.

Scott W. Tinker, CPG-10564

Perry Rahn's *The Last Glacier in the Bighorns*, TPG, March/April 2006

Dear Editor:

The March/April issue has some great articles!

The article entitled "The Last Glacier in the Bighorns" is interesting, and well documented. The title however embodies a prediction inconsistent with geologic history. Perhaps our preoccupation with "global warming" clouds our geological perspective.

Ramon E. Bisque, CPG-01595

Dear Editor:

Although not an active participant in AIPG, I have been a faithful mem-

Test Your Knowledge

Questions for this issue are:

1. In geophysics, rock mechanics and the theory of elasticity, let's say that:

   L and U are the Lamé constants.

   E is the Young's modulus.

   P is Poisson's Ratio.

   k is the bulk modulus.

   n is the shear modulus.

   Which of the following equations best relates the bulk modulus, Young's modulus and Poisson's ratio?

   a) k = E/2(1-3P)

   b) k = 3E/2P

   c) k = E/3(1-2P)

2. Of the following iron-rich minerals, which would you expect to be highly magnetic?

   a) Fe_2O_3

   b) FeO(OH)

   c) Fe_3O_4

3. The elevation of a stream at point "A" is 612 feet above sea level. At point "B", the elevation of the same stream is 409 feet above sea level. The distance between points "A" and "B" is 3.2 kilometers. What is the approximate gradient of the stream in feet per mile between the two points?

   a) 203 feet per mile

   b) 55 feet per mile

   c) 101.5 feet per mile

4. Data for a seismic tape is stored in SEG-Y format. You would expect this data to be stored in:

   a) 3 parts

   b) 10 parts

   c) 1 part

5. You are exploring outcrops of Carboniferous age. You find specimens of Eratocrinus and Pronorites. What types of fossils have you found?

   a) Cephalopods and foraminifera

   b) Cephalopods and crinoids

   c) Cephalopods and pelecypods.

Answers on page 54.

LETTERS TO THE EDITOR

ber since the late 1980s, and the TPG is one of the magazines that I always read, every issue.

This recent issue had some statements that pull my chain, and I would like to discharge a little steam.

The Last Glacier in the Bighorns, Rahn, Ray, and Rahn, has a final statement that " This study of the shrinking glacier at Cloud Peak confirms global warming, . . . "

If the study actually confirms global warming, nothing provided in the article supports that final statement.

The study only confirmed the reduction in size of the glacier.

It did not confirm that it was related to temperature.

The glacier could be melting because of an increase in snow algae which would raise the surface temperature.

The glacier could be melting because the area is subject to less cloud cover than before.

The glacier could be melting because of increased dust accumulation on the surface (volcanism?)

The glacier could be melting because of less snowfall precipitation and more rainfall.

The glacier could be melting for a whole bunch of other reasons.

I count on the reviewers of the *TPG* to continue to strive for that high level of quality that you are noted for.

Thanks for letting me take the unsolicited opportunity to speak out. I indeed appreciate your cumulative efforts and I think you all are doing a fine job, indeed.

Harry Day, CPG-07523

AIPG 2006 NATIONAL AWARDS

Ben H. Parker Memorial Award
Robert R. Jordan, CPG-01262
Yorklyn, Delaware

Martin Van Couvering Award
Richard M. Powers, CPG-06765
Lakeland, Florida

John T .Galey, Sr. Memorial Public Service Award
Richard M. Lane, CPG-06091
Suncook, New Hampshire

Honorary Membership
Daivd M. Abbott, Jr., CPG-04570
Denver, Colorado

Honorary Membership
Myrna M. Killey, CPG-06033
Savoy, Illinois

CONGRATULATIONS!

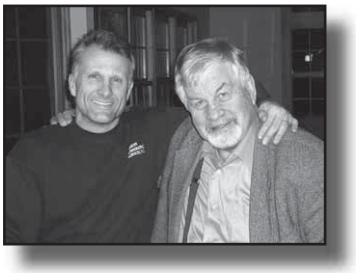
The Kensington Rune Stone, Compelling New Evidence (2006), by Richard Nielsen and Scott F. Wolter, Lake Superior Agate Press

Reviewed by William J. Siok, CPG-04773

Hoax or History?

How often does one find a book which combines history, anthropology, geology, mystery, modern analytical method, and human emotion in a manner worthy of the best fiction? Let there be no mistake, this excellent publication presents a fascinating and compelling account of a Rune stone found in a rural area of Minnesota in 1898. The stone is believed by many to be a record from 1362 left by a Norse expedition, and this account presents very credible evidence supporting this belief.

The Merriam-Webster Dictionary defines rune as "1 : any of the characters of any of several alphabets used by the Germanic peoples from about the 3d to the 13th centuries. 2 : MYSTERY, MAGIC ." This fascinating volume by Nielsen and Wolters attempts (successfully, in this reviewer's opinion) to document the history of the Kensington Rune Stone thoroughly enough to all but unequivocally prove, beyond a doubt, the authenticity of the stone. Mystery is certainly attached to this artifact.

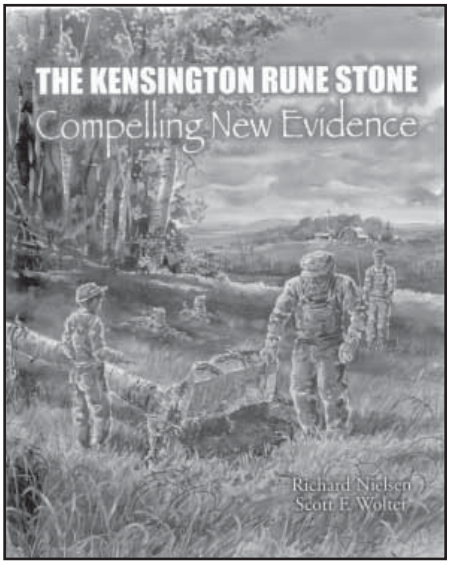


Scott Wolter and Richard Nielsen

Imagine if you will a 31" x 16" x 5" slab of grey rock, inscribed with unusual symbols, unearthed while removing a poplar tree from a farm field. It was discovered entangled in the roots of this poplar. Some early and modern examiners of the stone generally considered its existence as a fabrication, a joke.

A 1899 translation of the Rune stone's message by Northwestern University Professor George O. Curme, found on page 10 of *The Kensington Rune Stone*:

> *"Eight Goths from Sweden and twenty-two Norwegians, on an expedition of discovery from the Vinland of the West. We had camp with two boats a day's journey from this stone. We went fishing one day. After we came home we found a man red with blood and dead. Goodbye, rescue from evil. We have men at the ocean to look after our ship, fourteen day's journey from this island. Year 1362."*



Reading this translation and considering its message sends a chill up and down one's spine. Consider that it was left by visitors to Minnesota three centuries before other Europeans began to settle this continent and that they encountered…what? Read this account and enjoy the mystery, the investigation, and the revelation. You will not be disappointed.

Stepping Stones Across New Hampshire – *A Geological Story of the Belknap Mountains* (2005)

Jay Long, with trail maps by Dave Roberts

Reviewed by Bob Stewart, CPG-08332

The Belknap Mountains are a fine example of a ring-dike complex, although they are not as well known for this geological phenomenon as the Ossipee Mountains, directly north on the opposite side of Lake Winnipesaukee in central New Hampshire. New Hampshire ring dike complexes enjoy a global reputation, and are an integral part of most petrology texts. Jay Long's new book is an excellent introduction to the geology and tectonics of the Belknaps, and more importantly, also serves as field guide for readers interested in understanding the fascinating geology while hiking the myriad trails in the Belknaps.

Part 1 of the book is an introduction to the regional geologic history of New England, and specifically the plate tectonic events leading up to the creation of the Belknap range. The author makes effective use of satellite imagery coupled with color schematic diagrams to illustrate how modern geological settings, such as the Japanese island arc, can be used as a model for the Bronson Hill island arc that formed during the

Taconic Orogeny, which began the story of the Belknap Mountains. The story continues through the Acadian Orogeny, when the Bronson Hill arc and derived marine sediments were metamorphosed into the Appalachian Mountains of ancestral New Hampshire, as the Pangaean supercontinent accreted with the final closing of the proto-Atlantic Ocean in the late Paleozoic Era. Construction of the Belknaps was completed during Jurassic rifting as Pangaea broke apart. Vulcanism resulted in the widespread Moat Volcanics; subsequent intrusion of the White Mountain magma series created the ring dikes during the Jurassic Period, with post-Jurassic erosion creating the Belknap range as seen today.

Long uses a series of four schematic diagrams to illustrate the formation of the ring dike complex, which also includes a core pluton and related collapsed blocks of older volcanic and intrusive rocks stoped from above by the ascending pluton. The author has been careful to use a consistent series of colors in the various schematics to facilitate understanding of the geologic processes, and the graphic art is effectively complemented by a clear, concise text.

Part 2, *Rocks Within and Around the Belknap Mountains*, takes the reader to exemplary exposures of the various lithologies in the range. This section begins with a geologic column and map for the Belknaps, and from that point embarks on a geological tour from the oldest to youngest rocks. A second geologic map is accompanied by a series of inset field photographs of each rock type, and the author continues with more specific photographs and a narrative providing details of the petrography, petrology, and structure at representative locations. Long addresses metamorphism in the Perry Mountain and Rangely Formations, the oldest rocks in the Belknaps, crystal growth, nucleation, and fractional crystallization in various igneous rocks of the White Mountain magma series, and concludes with a discussion of the Rowes Vent Agglomerate and trap syenite breccia, rocks believed to have originated as diatremes during late-stage volcanic activity. Part 2 includes excellent field photographs that are keyed to enlargements of the geologic and trail maps included at the back of the book. The narrative not just describes the rocks and their locations, but also does a good job synthesizing the regional geology.

Part 3, The Continuing Destruction of the Belknap Mountains, discusses the post-Jurassic erosion of the mountains and related isostatic adjustments of the crust, and concludes the story of the Belknaps with the impact of Pleistocene glaciation and post-glacial weathering. Glacial erosion is evidenced by striations and the distribution of erratic boulders. Long has included fine photographs of mechanical weathering of boulders, exfoliation fractures, spalling, potholes, and grus. As in Part 2, the photographs are keyed to specific locations on geologic maps and trail guides.

The final part of the book consists of trail maps:

1. A color topographic map of the central Belknap Range, including the principal hiking trails;
2. A color topographic map, at a larger scale than the first, of hiking trails in the Gunstock Recreation Area;
3. The Mt. Major area, with the location and description of a significant rockfall; and,
4. A map key to the local geology, flora, fauna, and other points of interest.

BOOK REVIEWS (continued)

I have a few complaints, none of which significantly detract from what is otherwise an important and enjoyable contribution to New Hampshire geology. Although Long provides the principal sources of information, only the author names and dates are provided; complete citations are needed. I think the trail maps can stand alone as printed; however, those not familiar with the area or who lack mapping software would benefit from a list of topographic maps for the region. A few large-scale diagrams suffer from "pixelation".

I am personally familiar with the Belknap Mountains only through visiting relatives along the local roads between Belmont and Wolfeboro, NH, and with a picture in my mind's eye of a geological map long ago observed in a textbook. I had originally hoped to try out the trail maps last fall, but an exceptionally busy schedule disrupted my plans, which will have to wait until next summer, when I hope to put the book to good use.

Stepping Stones Across New Hampshire – A Geological Story of the Belknap Mountains (2005), by Jay Long, with trail maps by Dave Roberts. 62 pp. plus trail maps. Peter E. Randall Publisher LLC, Portsmouth, NH 03802 (www.perpublisher.com). ISBN 1-931807-34-5. Distributed by Enfield Publishing and Distribution, P.O. Box 699, Enfield, NH 03748 (www.enfieldbooks.com). Suggested price $19.95.

NEW FROM THE USGS...

OFR 2006-1091. KENTUCKY. Concentrations of Nutrients, Pesticides, and Suspended Sediment in the Karst Terrane of the Sinking Creek Basin, Kentucky, 2004. By Angela S. Crain, 15 pages. Available on line.

TM 5-B1. Determination of elements in natural-water, biota, sediment, and soil samples using collision/reaction cell inductively coupled plasma-mass spectrometry. By John R. Garbarino, Leslie K. Kanagy, and Mark E. Cree, 88, pages. Available from the U.S. Geological Survey, Information Services, Box 25286, Denver Federal Center, Denver, CO 80225. Available on line.

other 165. LOUISIANA. Concentrations of selected herbicides, herbicide degradation products, and nutrients in the lower Mississippi River, Louisiana, April 1991 through December 2003. By Elisabeth A. Scribner, Donald A. Goolsby, William A. Battaglin, Michael T. Meyer, and E.M. Thurman, 84 pages. U.S. Geological Survey, Information Services, Box 25286, Denver Federal Center, Denver, CO 80225. Available on line.

SIR 2005-5281. TENNESSEE. Sinkhole Flooding in Murfreesboro, Rutherford County, Tennessee, 2001-02. By M.W. Bradley and G.E. Hileman, 38 pages. Available from the U.S. Geological Survey Branch of Information Services, Box 25286, Denver Federal Center, Denver, CO 80225, USGS Scientific Investigations Report 2005-5281, 38 p., 20 figs.

WDR-ND-05-1. NORTH DAKOTA. Water Resources Data--North Dakota, Water Year 2005, Volume 1 Surface Water. By Robinson, S.M.; Lundgren, R.F.; Sether, B.A.; Norbeck, S.W.; Lambrecht, J.A, 569 pages. Available on line.

SIR 2005-5248. NEW MEXICO and TEXAS. Description of Piezometers and Ground-Water-Quality Characteristics at Three New Sites in the Lower Mesilla Valley, Texas, and New Mexico, 2003. By Edward L. Nickerson, 27 pages. Available from the U.S. Geological Survey Earth Science Information Center, Open-File Reports Section, Box 25286, MS 517, Denver Federal Center, Denver, CO 80225, USGS Scientific Investigations Report 2005-5248, 27 p., 8 figs. Available on line.

FS 2006-3007. ARIZONA, CALIFORNIA, NEVADA, UTAH. Sediment yield and runoff frequency of small drainage basins in the Mojave Desert, California and Nevada. By Peter G. Griffiths, Richard Hereford, Robert H. Webb, 4 pages. Available on line.

SIR 2006-5020. CALIFORNIA. Regression Model for Explaining and Predicting Concentrations of Dieldrin in Whole Fish from United States Streams. By Lisa H. Nowell, Charles G. Crawford, Naomi Nakagaki, Gail P. Thelin, and David M. Wolock, 30 pages. Available on line only.

USGS Toll-Free Information:
1-888-ASK-USGS (1-888-275-8747)
or http://www.usgs.gov

REQUEST FOR NOMINATIONS

The AIPG Awards Committee is seeking nominations for future recipients of the Ben H. Parker Memorial Medal, the Martin Van Couvering Memorial Award, the John T. Galey, Sr. Memorial Public Service Award, Honorary Membership, and Outstanding Achievement Award. The qualifications for these awards can be found below. Nominations for these awards, accompanied by supporting statement, should be sent to AIPG Headquarters, c/o Honors and Awards Chr., 1400 W. 122nd Ave., Suite 250, Westminster, CO 80234.

BEN H. PARKER MEMORIAL MEDAL

The Ben H. Parker Memorial Medal is the Institute's most distinguished award. It was established by the Executive Committee in 1969 in posthumous honor of a truly great leader, who devoted much of his life to improve the quality of geology and geologists and the services they provide. The medal is awarded to individuals who have long records of distinguished and outstanding service to the profession.

The most important criterion for this medal is a continual record of contribution to the profession of geology. A wide variety of contributions can be considered, such as (a) the education and training of geologists, (b) professional development of geologists, (c) service to the Institute, (d) leadership in the surveillance of laws, rules, and regulations affecting geology, geologists, and the public, and (e) activity in local and regional affairs of geologists.

MARTIN VAN COUVERING MEMORIAL AWARD

The Martin Van Couvering Memorial Award was established by the Executive Committee in 1979 in posthumous honor of the first president of the Institute. Martin Van Couvering made the presidency a full-time occupation for the first two years of the Institute's history. His dynamic leadership, diplomacy, and organizational abilities established the solid foundation from which the Institute has grown. Few, if any, have given so much to the Institute.

The most important criterion for the Martin Van Couvering Memorial Award is service to the Institute. As in other awards, a wide variety of contributions to the Institute may be considered. By far the most important contribution a geologist can make to the Institute is that of time. It is the contributions by individuals to the Sections, the committees, and special projects that enable the Institute to enhance the practice of geology.

JOHN T. GALEY, SR., MEMORIAL PUBLIC SERVICE AWARD

The American Institute of Professional Geologists' Public Service Award was established by the Executive Committee in 1982 in recognition of one of its primary purposes: service to the public. In 1992, it was renamed the John T. Galey, Sr., Memorial Public Service Award, in posthumous honor of our fourth President, whose long professional career was a continuum of service to both the geological and the general public.

Recognition of public service is important because so many Members have distinguished themselves and the Institute by giving expert testimony to governmental commissions and committees, and by providing geological expertise where it was needed by the public at large.

The application of geology to the needs of the general public may be in many different forms. Recipients of this award have outstanding records of public service on the national, state, or local level well beyond their normal professional responsibilities.

AWARD OF HONORARY MEMBERSHIP

Since 1984, AIPG has conferred Honorary Membership to those who have an exemplary record of distinguished service to the profession and to the Institute.

OUTSTANDING ACHIEVEMENT AWARD

The Outstanding Achievement Award was established by the 1989 Executive Committee to honor a non-member of AIPG who is widely recognized as a major contributor to the profession of geology. The award is not necessarily given annually, but only when the Awards Committee recommends an outstanding candidate to the Executive Committee for their consideration.

American Institute of Professional Geologists
Nomination form for 2007 AIPG Awards

(*Please check one)*

☐ Ben H. Parker Memorial Medal ☐ John T. Galey, Memorial Public Service Award

☐ Martin Van Couvering Memorial Award ☐ Award of Honorary Membership ☐ Outstanding Achievement Award

NAME OF CANDIDATE:_____ Telephone:_____

Address:_____ Fax:_____

Address:_____ E-Mail:_____

NAME OF PERSON MAKING THE NOMINATION:_____ Telephone:_____

Address:_____ Fax:_____

Address:_____ E-Mail:_____

Signature:_____ Date:_____

Supporting Statement (In brief here, **please submit detailed letter of support)**:_____

_____

_____

RETURN TO: AIPG, Attn: Awards, 1400 W. 122nd Ave., #250, Westminster, CO 80234. Ph. 303-412-6205, Fax: 303-253-9220
DEADLINE: Completed nominations must be received by **December 15, 2006.**

The Unintended Book Project: AUTHORS WANTED

A few years ago hydrogeologist Jim Jacobs was researching a book on methyl tertiary butyl ether (MTBE), a gasoline additive that has become a widespread groundwater pollutant. During the process of writing the MTBE book, it appeared that there were a series unintended consequences where the wrong decisions or policies were made and the process of using MTBE in gasoline continued until the unavoidable outcome occurred.

What fascinated Jacobs about the MTBE example was the seeming lack of communication between multidisciplinary teams, even after the problem was identified. As a result, he started to look for what happens when large-scale experiments and projects go wrong, terribly wrong. MTBE was added to gasoline to lower air emissions and solve air pollution challenges in Los Angeles and other cities. Over the years, the use of MTBE has created a nationwide groundwater problem, partly related to the conditions of the underground tanks that stored the gasoline with MTBE. The chemical characteristics of MTBE allowed it to travel easily in groundwater and made it more difficult to cleanup than other chemicals. MTBE has become a poster child for unintended consequences with a complex environmental problem being legislated with poor communication between multi-disciplinary teams. Groundwater cleanup of MTBE in gasoline in the United States has cost several billions of dollars to date.

After coauthoring a book on MTBE, Jacobs realized these large-scale mistakes and miscalculations should be cataloged and used as a source of lessons learned for many fields, including science, engineering, medicine, law, business, and politics. The problem was to develop a network of authors who could submit short, interesting, non-technical stories that can be included in a series of books. For that challenge, Jacobs brought in Jay Lehr, PhD, as co-editor. Lehr is a veteran of over a dozen scientific book projects. A contract with the University of Michigan Press was soon inked for *Unintended Consequences, Volume I.* A web site (www.oopsfiles.com) was developed for the project.

Currently Looking for Authors

Developing the *Unintended Consequences* books is based on objective submissions by thousands of volunteer authors from around the globe. This approach of having numerous contributors to this project will yield the broadest collection of Unintended Consequences that has ever been compiled. The use of an army of volunteer authors has a rich history: It was first used to compile the original Oxford English Dictionary (OED) in the mid-19th century. More recently, on-line encyclopedias such as Wikopedia have used similar techniques updated for the electronic age.

The volunteer authors for *Unintended Consequences* books include scientists, engineers, lawyers, policy makers, medical professionals, business experts, students, and a host of other keen observers to create the most comprehensive assortment and analysis of unexpected inventions, discoveries, breakthroughs as well as human failures and miscalculations ever published. The first volume is planned for publishing in 2007.

One question that Jacobs is frequently asked is whether the stories have to have negative results. Jacobs answers, decidedly to the contrary, "some of the most innovative products and ideas have come from careful observations of experiments that did not go exactly as planned. These stories and lessons learned are an inspiration for business opportunities and scientific breakthroughs." The editors believe that surest way to minimize future miscalculations and errors is by being more knowledgeable of past mistakes. The old adage that "those who lack a sufficient knowledge of history are bound to repeat it" has been borne out time and time again.

If we recognize the patterns of failure and lessons learned from historic events, future errors in the solution of complex problems can be minimized. The failures and associated lessons learned apply to everything from building bridges, to designing safe consumer products, developing resources, planning businesses, legislating taxes, or creating successful social programs. By studying dozens of case studies from numerous fields and understanding the causes and warning signs of failure, we can learn positive lessons from unfortunate outcomes and sometimes tragic historical events. The case studies will show how errors in judgment, unforeseen events, a lack of communication, a reliance on assumptions and a host of commonly used but flawed human problem solving methods are inadvertently introduced in attempts to solve a problem. Catastrophic failures in the future might be avoided or at least minimized, while creative ideas may be strengthened by the lessons learned from this new book.

Typical submissions will be between 500 to 1,400 words, written for the general public. Each published contributor will receive one free copy of *Unintended Consequences Volume 1*. For more information: www.oopsfiles.com; Contact: Jay Lehr at mailto:e3@e3power.com

AIPG BYLAWS UPDATE

(February 10, 2006)

2.3.1.1. Continuing Professional Development

A voluntary program for recognizing Continuing Professional Development (CPD) activities by Certified Professional Geologists has been approved by the Executive Committee. Participation in the CPD Program is voluntary for those who initiate the CPG application process prior to July 1, 2006. Applicants who initiate the CPG application process on July 1, 2006 or later must participate in the CPD program upon award of the CPG. Details about this program can be found on the Institute's web site and descriptions of and discussions concerning the CPD have been and will continue to be published in The Professional Geologist.

The Importance of a Long-Range Perspective

Michael D. Lawless, CPG-09224, Blacksburg, Virginia

As geologists, we bring a unique perspective of the depth of time to our professional activities. It is this long-term perspective when combined with execution of short-term goals and strategies that can make us successful in many endeavors. The strategic planning process that we completed in 2001, and the process planned for this year, will allow us to outline those short- and long-term goals and develop strategies for meeting those goals. Several ongoing efforts will undoubtedly be continued, such as our expanded efforts to attract students to our membership, the process of strengthening AIPG's certification program, and developing our advocacy program for the profession.

By increasing student membership and establishing student chapters at colleges and universities we are involving potential members of the profession in our advocacy activities. This involvement underscores the importance of active professional development in building a successful career. It also helps AIPG recruit future geologists who can be long-term members of the Institute. One of the challenges will be the ability of AIPG to evolve along with the changes in the profession and changes in geology curricula at colleges and universities. Many geology departments, or at least individual professors, have begun to have seemingly more frequent discussions with professional geologists in order to make graduates of their programs more employable. AIPG certainly has an opportunity to facilitate such discussions.

Increasing student membership is a viable long-term solution; short-term solutions for our success are less tangible and more difficult to implement. One of the main arguments against membership we have all heard from state-registered geologists is, "state registration has rendered AIPG irrelevant." The primary message that I try to get across to geologists who respond this way is another line that we have all heard, "state registration protects the public, AIPG represents you and your profession." Even with this seemingly simple and direct response recruiting additional members from established professional geologists remains a challenge. The steps that the staff and Executive Committees have taken over the past several years to elevate our visibility and strengthen our alliances with other geologic organizations have gone a long way toward demonstrating AIPG's important advocacy role; we need to continue those efforts.

Certainly, current events and policy issues have demonstrated the importance of geology and a geologic perspective to addressing global challenges ranging from living with natural hazards to developing and diversifying energy sources to sustaining and delivering potable water supplies. The focus on these issues provides us with an opportunity to increase our advocacy role at the local, state, national, and international levels. The universal nature of these issues and the importance of geology in maintaining our current standard of living, as well as improving that standard across other areas of the globe, allows us to relate the profession of geology to the average citizen on a very personal and real level.

I am honored to have the opportunity to serve AIPG as your President-Elect. AIPG has made great strides over the past several years toward ensuring the long-term success and viability of the Institute. I am committed to continuing and furthering our Institute's progress in advocating for the profession of geology, attracting student members, and demonstrating the relevancy of AIPG certification in the face of state registration programs. If elected I will continue the important work carried out by the staff and Executive Committees during the past several years.

"...supporting the professional development and careers of geologists."

Daniel J. St. Germain, CPG-07858, Cornwall, New York

It is with a strong sense of commitment, duty, and enthusiasm that I accept the nomination to be AIPG's President-Elect. Each President-Elect must have a clear vision for AIPG that not only is consistent with the policies and directives of previous Presidents but also allows for an opportunity to build on the current success of the organization in a way that reflects the needs and wishes of its membership. My vision for AIPG incorporates the reality that the value of the CPG certification is decreasing and we must re-focus membership services to provide value for all geologists - including state licensed professional geologists that now make up close to 50 percent of our organization. Geology as a profession has changed dramatically over the last 40 years and AIPG's role in the profession must also change. AIPG must evolve into more of a professional advocacy and educational society and rely less on CPG certification as our primary focus. Once freed from being perceived as only a certifying organization, AIPG will be able to develop programs that raise the public's awareness of geology and earth science, support educational and career development programs for our members as well as continue to provide a certification tool to those geologists who desire the CPG title.

Our members include mining geologists, petroleum geologists, environmental geologists, and a multitude of other geologic specialties each with their own professional need. To survive as a relevant and meaningful organization, AIPG must proactively seek out and learn to provide all the services that our members need. A few months ago, I participated with a group of officers and advisory board members in a strategic planning session. This resulted in the development of several long-range goals that will enable AIPG to continue to provide the CPG certification, add membership services needed by state licensed geologists; and expand our online education systems available to our members, as well as other geoscientists, and earth science teachers. These and other programs will allow us to expand the universe of potential new members – those that are interested in joining a professional earth science advocacy and educational organization, but do not need or are not interested in achieving CPG certification.

It is important to AIPG's future that we not only continue to provide technical courses for CEUs (which many of our members need to maintain their state licenses), but also offer "professional development" training to help our members grow as project managers, client managers, practice managers, and business executives. In my opinion, there is no greater value that a professional organization can provide than to offer opportunities to help advance its member's careers. With aggressive marketing, these courses will increase membership and non-dues generated revenue.

The time has come where we must openly and actively support existing state licensure programs and those AIPG members that are lobbying for new state licensure efforts. As an executive committee member and president of the Northeast Section, we provided thousands of dollars in financial support to groups that successfully led the licensure efforts in New Hampshire and are currently battling their way through the New York legislature. The AIPG should do more to support state licensed professional geologists and more must be done at the National level.

In summary, the reality is that the CPG certification is not as valued or sought after as it once was and AIPG must re-focus membership services to a new generation of geologists. I believe that it is vital to AIPG's success to support the professional and career development of geologists and to help prepare our members to be leaders in their respective specialty areas. One of AIPG's greatest attributes is that we represent all geologists, not just geologists from a particular specialty area or business sector. I believe that we need to be more of a professional advocacy and educational society and that ultimately this is our future. Two decades from now the vast majority of the current CPGs will be retired and membership demographics predict that most new members of the AIPG will join in the Member category for non-Certification reasons. We need to recognize, even embrace this reality and re-shape AIPG into an organization that will better serve both its current and future members.

Candidate for AIPG National 2007 Vice President

Virginia T. McLemore, CPG-07438, Socorro, New Mexico

I have been asked to run for National Vice-President. I was your editor from 2001-2003 and enjoyed working with the executive committee as well as performing editorial tasks. I look forward to returning to the executive committee as Vice-President, if elected.

As geologists we are entering an exciting time for our profession—one that I have long awaited for. Commodity prices have increased over the last two years and mining and petroleum exploration and production are increasing significantly. We are entering an economic "boom" that could last for a decade or more. Future production and consumption of minerals and petroleum will increase as population increases worldwide and as people demand an increasingly better quality of life. China and India will likely become major consumers of minerals and petroleum because of their large population, thereby increasing the demand for minerals resulting in an increase in price. Companies will continue to explore for new deposits in known mineralized areas. Mining and petroleum production can and should be done according to today's environmental standards. AND geologists form the core of these extractive industries as well as meeting the resulting environmental challenges and in protecting society from geologic hazards. Furthermore, there is a strong desire by society towards a sustainable economy, where mining is a temporary part of the local economy, and other, more sustainable industries are developed that will allow for continued growth of mining communities when the mine closes. Water supplies in many areas of the world are in short supply and geologists and hydrologists must meet these every increasing demands for more fresh water. AIPG and its members should be and are meeting these challenges. I became a working geologist near the end of the last mining "boom" in 1980, so I have been waiting for and welcome this opportunity for most of my career. Our profession and our Institute have changed dramatically since I became a working geologist, from an organization representing mostly geologists working in the petroleum and mining fields to one representing a broad spectrum of geologists working in many fields, including petroleum and mining, environmental geology, geologic hazards, geohydrology, and urban geology. All of these fields and specialties will be needed in the decades to come and AIPG needs to be on top of the many challenges facing our profession.

Our Institute, at the state level, must continue to take the lead in state certification where appropriate. We need well-defined legislative programs at the national and state levels to promote our profession and enable us as an Institute to help solve geological problems that affect the public. And, we can not forget the challenges facing our extractive industries, mainly how to operate within new stricter environmental regulations and how to correct public misperceptions, yet provide the natural resources our industrial society requires. AIPG is on track as an active organization meeting these challenges with successful fly-ins to Washington D.C. to meet with our government agencies and legislators, increasing membership, publishing a credible news journal (TPG), by conducting exciting and technically interesting annual meetings, and other functions. But we still have many challenges facing our institution. We must maintain the momentum that past executive committees have started.

As editor, I feel that I have left my mark and I have been proud of our achievements. AIPG does not make money from their publications, yet our members look towards the TPG for peer-reviewed articles, viewpoints, and information on government affairs and ethics. We have provided this information to our members in TPG and kept the cost down by publishing TPG 10 times a year instead of 12 times a year. The membership directory is printed only for members that request it; the directory is available to all members on our Web page. This also resulted in substantial savings to AIPG. We also added new features to TPG during my tenure. The 2003 Student Issue was a success and well received and is an annual issue. The History of AIPG by R. Proctor was edited and published during my tenure. I feel that I can accomplish similar achievements as Vice-President.

According to the Institute by-laws (section 5.3.2), the Vice President shall act as liaison between the executive committee and the section presidents as well as be ready to assume the duties of the President should misfortune occur. These are important responsibilities that the Vice-President must oversee. I have been a 4H leader since 1984, and the motto of 4H is quite pertinent here: "Make the Best Better." That is essentially what I plan to do: improve and build upon what other Vice-Presidents have done before me to strengthen AIPG, especially by communicating with the section presidents, find out what works in their section as well as what the problems and challenges are. As Vice-President not only will I assume the duties and responsibilities of the office, but I will be an active member of the Executive Committee, promote membership, and participate in AIPG activities. I am looking forward to meeting these challenges as Vice President for your Institution!

Candidate for AIPG National 2007 Vice President

Jane M. Willard, CPG-06979, St. Paul, Minnesota

The mission of the Vice President is to be a liaison between the Sections and the Executive Committee. Liaison can mean many things, but I view the position as primarily one of facilitation, specifically facilitating the exchange of ideas and solutions among Sections, between the Sections and the national staff and officers, and between the Institute and other associations. In the world of internet communications, it is a lot faster to communicate and a lot easier to do so within large groups. And as an association, we do not yet do that enough between our Sections, whether it is to pass on a great idea or to ask for help with a particular problem. As Vice President, my primary goal would be to set up an active email network among the Sections.

In doing so, the areas I would want to emphasize would be membership development, continuing education and programs, and public relations. The Institute's membership numbers are only as good as that of the Sections especially in the post licensure era. But we often completely reinvent the wheel when it comes to recruitment. Although local/regional refinements are always necessary, the core of member recruitment is the same throughout the country (and across organizations).

For most Sections, their main purpose is to provide continuing education to their members and others of the geologic community, but how many of us in Minnesota know what is being done in the Northeast Section, for example. And beyond exchanging ideas and speakers, we can do things like determining what would most benefit our Sections in the way of on line short courses or other resources.

Finally, public relations can be another struggle for Sections when we approach the subject on our own. Most states do not have geoscience in their secondary curriculum, and some states have dropped geology from their universities. This happens even though there is no time when geoscience is not critical to natural resources and the public health and welfare. And as individuals we have encountered adults who do not know a geologist from a genealogist (ask me about that story sometime).

So why do I want to spend my time and resources on behalf of the Institute? Primarily because I have benefited from it for 25 years. First of all, in the early years before licensure, the CPG gave me credibility. Secondly, the meetings of the local Section allowed me to get to know all the players in town, so to speak, which was incredibly beneficial in job searches. The Institute and the Section gave me wonderful role models for my own professional development as a geologist and a business owner and for creating the Minnesota chapter of the Association for Women Geoscientists. Participating in planning the national meeting the last time it was here in Minnesota in the 1980s was a great organizational experience. And the national meetings have provided me with opportunities to learn details of geology in other regions as well as the work lives of other geologists. Giving my time and experience to the organization is my way of giving back to a group that has served me well as a professional geologist.

Maintain and Strengthen AIPG's Financial Standing

Dave A. Sadoff, CPG-09933, Castro Valley, California

Several weeks ago I received a call from AIPG National asking if I would accept a nomination to run for National Treasurer. My initial reaction was mixed. On the one hand, like all of us, my time and energy are pulled in various directions by family, career, civic duties, volunteering, hobbies, etc. On the other hand, I have always enjoyed my interaction with the AIPG family through my California Section official duties since 1998 (currently President), two stints on the National Executive Committee in 2001 and 2002, and the numerous National annual meetings I have attended. I also considered what I have to offer as Treasurer – experience in financial policy and practice is one of my strong suits.

So, I have accepted the distinct honor of being nominated as a candidate for Treasurer of AIPG. I do not take this opportunity lightly. If elected, the membership can be assured I will wholeheartedly dedicate my time and energy to successfully perform the significant duties required of this office.

I recognize that my primary responsibility as Treasurer is to supervise the collection and disbursement of all funds of the Institute; and to keep accurate records of all financial transactions, funds, and securities of the Institute. As Treasurer, I will bring the sound financial practical knowledge I have gleaned from my experiences as a business owner, California Section AIPG Treasurer, and treasurer of a non-profit organization. I look forward to transferring my fiscal management skills into beneficial service to the Institute.

I will support the strong financial management style presented by the Institute's Executive Director. Under Bill Siok's directorship, a once bleak balance sheet is now on very sound financial ground. Although our financial picture is currently rosy, I remember less fortunate times in the late 1990s. As a result, I will always be cognizant of the financial health of the Institute, and will proactively utilize sound fiscal strategies and practices to keep the Institute well into the black. I will only support a budget that is justified and efficient, and one which complies with AIPG Policies and Goals.

Just over 85% of AIPG's revenue is provided by membership dues. At the risk of sounding redundant, we must continue to seek new qualified individual and corporate memberships. To that end, I endorse the creative recruitment tools first proposed by Rick Powers – namely, the use of the blue membership application cards, and the addition of the Corporate Member category. I understand the direct correlation between the membership totals and the financial health of our organization, and will work with the Executive Committee to improve on our numbers. I also look forward to working with the ExComm on other issues, such as enhancing the value of AIPG membership, the continuing professional development program, state licensure issues, and advocacy for the geologic profession, to name a few.

My previous AIPG officer experience has provided me with an awareness of the level of time and effort required to perform the duties of Treasurer. I am ready, willing and able to productively serve in that capacity. With your help and your vote, I look forward to serving as your Treasurer in 2007 and 2008.

VOTE!

AIPG Members eligible to vote for AIPG National Officers are encouraged to fill out and mail the enclosed ballot or vote electronically on the AIPG National Website — www.aipg.org. All paper ballots must include the voters name and AIPG number to be valid. To vote electronically members must login to the member portion of the website and include their name and AIPG number to be valid. If you do not know your login and password contact the AIPG National Headquarters office by phone (303) 412-6205 or e-mail (aipg@aipg.org).

Candidate for AIPG National 2007-2008 Treasurer

Ronald J. Wallace, CPG-08153, Roswell, Georgia

First of all I would like to thank the Institute in offering me the opportunity to run for Treasurer. I accept the challenge and look forward to the demands of the job if I become a member of the Executive Committee. First of all I should say something about my background and past experiences as being a Treasurer. In 1989-1990 I was treasurer of the Environmental Committee of the Houston Geological Society. During those years we were active in helping petroleum geologists transition into environmental geology careers after the down turn in petroleum. In my years living in Houston, Texas I was active in volunteer fire fighting for nine years. Rural Fire Districts were approved in the late 1980s and I was appointed as a Harris County Rural Fire Commissioner and treasurer for the district until I moved to Georgia. While being a fire commissioner I was also the treasurer for the volunteer fire department for three years.

In moving to Georgia I made a conscious decision that I needed to give my time to professional organizations and not continue in fire fighting. From 1999-2000 I was chairman of the Georgia Ground Water Association. During that time we developed a fate and transport groundwater modeling class for hydrocarbons that we are still using for continuing education training and to help finance activities for the Georgia Section. We are in the process of developing a fate and transport class for chlorinated solvents. The past two years I represented the sections as an advisory board member of the Executive Committee. During that time I have written a few articles on different activities from field trips to short courses sponsored by our Section. I think it is important to bring value to the membership by offering field trips that are both educational and fun for the family. We also offer short local trips to remediation sites and most recently to a landfill. A year ago we started a student chapter at Georgia State University. This has been very rewarding to myself in meeting the students and to see how enthusiastic they are about geology. They are very much interested in learning what we as professionals do for a living and some are already studying for the ASBOG test. It is not easy to add membership and to get more of the students involved. I am convinced it takes a number of years to establish a good working relationship with the students and to work with the faculty.

One of my goals would be to help the Sections start student chapters. Most members as alumni can go to their university to see if there is interest and to give a talk on geology careers and what the Section and National has to offer the students. We are competing against geology clubs and Sigma Gamma Epsilon but I am convinced that if we show what the student can gain they will want to join, but it does take time and a commitment. The Section needs people that are willing to take on the responsibility to work with the students, attend their meetings, and to interact between the Section and Chapter.

Another area of interest is to strengthen the Sections. I think it is important that each Section can learn from each other and I think we need better communication between the Section presidents or other officers. Presently the Sections get together once a year at the National Convention. Through email or setting up a bulletin board at National we can discuss different issues. I think the different Sections that do not have web sites need to get with National and have one set up and to add articles or at least a calendar of events. With Nationals help you can have a very good web site for your membership. Many of our membership travel across the country for business and this would give them an opportunity to visit another Section and to see what other sections are doing.

Having attended Executive Committee meetings the last two years has given me insight on the working at the National level and the budget process. The Executive Director and Executive Committees have done a very good job in controlling the budgets. It was an honor working with the Executive Committee and National Headquarters and I hope you will vote for me so I can continue to serve the membership.

Candidate for AIPG National 2007-2008 Editor

Gail G. Gibson, CPG-09993, Orange Park, Florida

During my professional lifetime, I have worked in petroleum exploration, economic mineral exploration, and hydrogeology; founded and was CEO of my own consulting company; and held both administrative and faculty positions in higher education. In each and every one of those experiences, two important axioms kept reappearing. One is that willing, effective, and efficient sharing of pertinent information is a key element of successful programs and projects, as well as of one's professional and personal stature among peers and friends. Secondly is to spontaneously and willingly provide credit where that credit is due.

In the post-secondary academic world, those who teach most often arrive at those positions with excellent technical credentials in their disciplines, but completely lacking in the skills to communicate effectively with the diverse audience of students. I am sure that each of you reading this can think of an undergraduate or graduate professor, who was unanimously voted "world's worst instructor." Then over a beer or cup of coffee, there would be lengthy discussions of who was deemed to be good instructors, and why. In hindsight, and often unconsciously, we compare our performance to that of those "good instructors" whether we are in a classroom or on the jobsite with a client, or communicating information with the general public or our peers.

I have been fortunate to have been associated with individuals who have not been reticent in sharing constructive criticism, praise, or suggestions on how better to present a point or reach a broader audience. I believe at least some of that constructive criticism, praise, and suggestions has taken root and flourished. I often think how great it would be to distill and bottle that input, and put a tiny drop on the tongue or writing hand as needed. The next best thing is to follow in those footsteps and try to share with (and continue to learn from) others through service to American Institute of Professional Geologists (AIPG) and The Professional Geologist (TPG).

As the broad discipline of Geology becomes more compartmentalized into an ever-growing list of sub-disciplines, publications (both electronic and paper) become more numerous and reflective of the immense quantities, and greater detail, of information being collected, analyzed and published. Technology has certainly altered the way we communicate, often isolating us from the "real world". We save time by using e-mail, publishing to the Web, taking our professional development from the Web, and using cut-and-paste techniques to write what are largely boiler plate reports. Groups like AIPG can adapt to this technology as its membership directs.

However, we have filled that "saved" time with other activities, such as expanding our client base. Reading books for technical information or for pleasure is becoming a lost art for many of us. Journals with lengthy articles frequently reside in growing stacks on the coffee table, unread, except perhaps for the abstracts and more rarely the conclusions. The law of superposition comes to mind when the growing stack of unread journals simulates a mass wasting event from table to floor. To save time, reports become more boiler plated, often with background information not being current because of the ease of cut-and-paste capability.

The professional membership of AIPG is diverse in interests and needs, strapped for time to maintain currency in the discipline, serve clients; and to attend seminars, field conferences; and to meet and learn from others in the discipline. The TPG provides a platform for relatively short, succinct information articles (e.g., case studies) that can address some of the information currency questions as well as provide contacts where questions and discussions can begin. I have served as an Associate Editor for TPG for four plus years, as textbook reviewer and as a peer reviewer for Southeastern Geology.

As editor of TPG, my goals would include:

- maintaining and enhancing communications with AIPG members;
- fostering the professional quality and information value of TPG by encouraging manuscript submittals for either topical editions of TPG or a smorgasbord of topics in each number of the journal;
- working with AIPG members and staff to encourage and support student, as well as pre-college teacher, involvement in AIPG activities; and
- be an advocate for increased involvement of the membership in TPG and AIPG.

Candidate for AIPG National 2007-2008 Editor

Douglas F. Scott, CPG-09852, Spokane, Washington

"This morning I took out a comma and this afternoon I put it back in again" (Oscar Wilde, Irish poet and dramatist). Such is the work of an editor, a job burdened with punctuation, correct grammar, decisions on what should stay and what should be deleted, and ultimately, the decision of whether an article is worthy for inclusion in "The Professional Geologist".

The responsibility of the AIPG National Editor is one I consider a challenge and a privilege. A good peer-reviewed issue should provide its members with articles that will peak their interest and provide a mechanism for continuing education. For many members of AIPG, "The Professional Geologist" may be the only publication they have time to read; hence it is the editor's responsibility to ensure the articles are timely, technically accurate, and relevant.

My experience with writing, publishing, and reviewing professional papers began in the early 1980's. I have authored 40 published papers (16 in the last 5 years), co-authored 9 published papers, and served as a technical reviewer for 16 papers (for both AIPG and SME). In 2004 I was selected to be on a committee that reviewed and ranked more that 20 papers for the prestigious 2004 NIOSH Alice Hamilton Award. I currently serve as an adjunct professor at both the University of Missouri-Rolla and the University of Arizona, teaching web-based courses about "Disease and Illness in Mining".

I have presented 29 lectures, seminars, workshops, and conference presentations at universities, colleges, and professional conferences and have co-developed a 3-day workshop for teachers titled, "Minerals Mining and Me", which is offered for 1.5 semester hours (re-certification credits) through the Colorado School of Mines annually in Colorado and Montana.

My professional work experience (U. S. Bureau of Mines and NIOSH) includes geologic mapping (geologic structure relative to rock bursts), mineral resource evaluations, geophysics (seismic tomography to map stress and electromagnetic signals as indicators of stress), and disease and illness issues in mining (e.g. welding fume exposure and under-reporting of disease and illness in mining). I am a registered geologist (no. 232) in the state of Washington, a Certified Professional Geologist with AIPG (no. 09852), and a Registered Geologist with SME (no. 4068137). Currently, I am a Research Physical Scientist with NIOSH – Spokane Research Lab (mining health and safety research lab).

As a lead researcher I am responsible for conducting mining health and safety research (develop project ideas, develop project work plans, and implement research) and reporting the results in both published papers and at professional conferences, workshops, and seminars. I would bring to the position of AIPG National Editor more than 26 years of experience in both authoring and reviewing professional papers. My goal is to attract high quality articles relevant to the practice of geology, geological research, and geological engineering. Accomplishing this goal would include:

- Soliciting quality article submissions from leaders in research, geology, and geological engineering;
- Making "The Professional Geologist" an electronic journal to minimize costs associated with producing "hard copies"; and
- Actively soliciting suggestions for improving "The Professional Geologist."

"The Professional Geologist" is a quality publication; however, we can make it better by offering our readers topics covering diverse areas of geologic expertise and providing the information in a timely and accurate manner.

CANDIDATES FOR AIPG NATIONAL 2007 PRESIDENT-ELECT

Michael D. Lawless

CPG-09224
Blacksburg, Virginia

Statement of purpose or goals you have for AIPG:
To continue to strengthen the Institute by expanding our role as advocate for the profession of geology.

Universities Attended	Degrees Granted	Dates
Bates College	B.S., Geology	1986
Old Dominion University	M.S., Geology	1989

Company	Title	Dates
Environmental Tech. Engineering	Hydrogeologist	1988-90
IMS Environmental	Senior Hydrogeologist	1990-93
EnviroTech Mid-Atlantic	Director of Environmental Services	1993-95
Dewberry & Davis	Senior Geologist	1995-96
Draper Aden Associates	Environmental Program Manager/Associate	1996-present
Draper Aden Associates	Member of Board of Directors	2002-03

AIPG Activities	Title	Dates
AIPG Virginia Section	Secretary/Treasurer	1996
AIPG Virginia Section	President-Elect	1997
AIPG Virginia Section	President	1998
AIPG Virginia Section	Advisory Board Representative	1998
AIPG Virginias Section	State Reg/Leg Comm. Chair	1998-present
AIPG National	Wetlands Policy Comm., Chair	1998-2000
AIPG National	State Affairs Comm., Member	1998-99
AIPG National	Subcomm. for Professional Practice, Chair	1999
AIPG National	Secretary	2000-01
AIPG National	Membership Comm., Chair	2002
AIPG National	Honors and Awards Comm., Member	2005-06

Daniel J. St. Germain

CPG-7858
Cornwall, New York

Statement of purpose or goals you have for AIPG:
Strengthen AIPG, support professional development and the careers of geologists, expand state licensure of professional geologists, and advocate geology to the public.

Universities Attended	Degrees Granted	Dates
Long Island University	B. S. Marine Geology	1984

Company	Title	Dates
Geraghty and Miller, Inc.	Scientist	1984-1988
Leggette, Brashears, & Graham, Inc.	Senior Hydrogeologist	1988-1990
Eckenfelder, Inc.	Senior Hydrogeologist	1990-1993
Storch Associates	Senior Hydrogeologist	1993-1995
Malcolm Pirnie, Inc.	Associate	1995-present

AIPG Activities	Title	Dates
Northeast Section	Executive Committee, Member	1998-2000
Northeast Section	President-Elect	2001-2002
Northeast Section	President	2003-2004
Northeast Section	Past-President	2005-present
Northeast Section	Angelo Tagliacozzo Memorial Geologic Scholarship Committee, Trustee	2001-present
Northeast Section	Section web-site developer and coordinator	2000-present
Northeast Section	Organized Section Field Trips	1999, 2003, 2004, 2005
Northeast Section	Testified New Jersey Senate Commerce Committee in Support of PG Legislation	2003
Northeast Section	41st Annual Meeting Committee, Financial Chair	2004
AIPG National	NE Section Representative, Washington DC Fly-in	2001-2002
AIPG National	Advisory Board Representative	2005-present
AIPG National	Developed and Reviewed Academic Requirements for CPG Review Committee, Member	2005
AIPG National	Annual Meeting Committee, Member	2005-present
AIPG National	2008 Annual Meeting Steering Committee, Member	2006-present
AIPG National	Bylaws Committee, Chair	2005-present
AIPG National	Strategic Planning Committee, Member	2006-present

CANDIDATES FOR AIPG NATIONAL 2007-2008 TREASURER

Dave A. Sadoff

CPG-09933
Castro Valley, California

Statement of purpose or goals you have for AIPG:
To maintain and strengthen the financial status of the Institute; and to soundly perform the duties of the Treasurer. I intend to work with the Executive Committee in their endeavors to foster sustained membership growth, which will further the financial strength of AIPG.

Universities Attended	Degrees Granted	Dates
California State Univ., Hayward	B.S., Geology	1986

Company	Title	Dates
Applied Earth Technology	Geologist	1986
Crosby and Overton	Geologist/Senior Geologist	1986-1992
Environmental Bio-Systems	Principal Geologist/Owner	1992-2001
AIG Consultants	Senior Consultant	2001-present

AIPG Activities	Title	Dates
California Section	President	1998-2000, 2002-present
California Section	Secretary and Newsletter Editor	2000-2001
California Section	Screening Board Chair	2003-present
AIPG National	Advisory Board Representative	2001
AIPG National	Advisory Board Representative	2002
AIPG National	Honors and Awards Committee, Member	2005-present

Ronald J. Wallace

CPG-08153
Roswell, Georgia

Statement of purpose or goals you have for AIPG: To keep AIPG in a strong economic position and to use our resources wisely. We need to help develop more student chapters and to give the students opportunities to attend Section meetings and National meetings. We need to develop a means to communicate with the Section presidents more often than only at the Annual meeting. They need a means to use their collective knowledge.

Universities Attended	Degrees Granted	Dates
Lamar University	BS Oceanographic Technology	1973
University of Kansas	MS Geology	1979

Company	Title	Dates
Skidaway Inst. of Oceanography	Research Technician	1973-1976
Exxon Company, USA	Geologist to Senior Petroleum Geologist	1979-1990
Exxon Company, USA	Marketing Engineer	1990-1992
Engineering Science	Senior Geologist	1992-1995
Applied Earth Sciences	Senior Geologist	1996-1997
Sierra Piedmont	Project Geologist	1997-1998
Mill Creek Environmental Services	Senior Geologist	1998-1999
Georgia Envir. Protection Division	Senior Geologist to Advanced Geologist	1999-present

AIPG Activities	Title	Dates
AIPG Georgia Section	Executive Committee	1997-1998
AIPG Georgia Section	Vice President	1999-2001
AIPG Georgia Section	President	2002-2006
AIPG National	Advisory Board Representative	2004-2005

CANDIDATES FOR AIPG NATIONAL 2007 VICE PRESIDENT

Virginia T. McLemore

CPG-7438
Socorro, New Mexico

Statement of purpose or goals you have for AIPG:
To assist the executive committee in increasing membership, incorporating the new corporate membership, incorporating the new Continuing Professional Development (CPD) Program, and assist active membership participation at the section and national level.

Universities Attended	Degrees Granted	Dates
New Mexico Institute of Mining and Technology	B.S. Geology, B.S. Geophysics	May 1977
New Mexico Institute of Mining and Technology	M.S. Geology	May 1980
University of Texas at El Paso	Ph.D. Geoscience	December 1993

Company	Title	Dates
New Mexico Bureau of Geology and Mineral Resources	Senior Economic Geologist	1993-present
	Geologist	1980-1993
Urangesellschaft, USA, Inc.	Assistant field geologist	May-Sept. 1999
Socorro County Assessor's Office	Drafter	July 1976- May 1977
Natural Gas Pipeline Company of America	Exploration geologist	July to Sept. 1975

AIPG Activities	Title	Dates
AIPG National	Editor-elect	2000
AIPG National	Editor	2001-2003
New Mexico Section	Executive Committee Member	2000-present
New Mexico Section	Local speaker for state meetings	

Jane M. Willard

CPG-06979
St. Paul, Minnesota

Statement of purpose or goals you have for AIPG:
To maintain and enhance the connections between Sections and National, among Sections, and between the association and other professional associations, to develop further the Continuing Education Program, and to increase the public awareness of the geologist's role in society and the environment

Universities Attended	Degrees Granted	Dates
Carleton College	BA English	1971
Buffalo State University (NY)	MS Education	1974
Kansas University	MS Geology	1980

Company	Title	Dates
Teacher Corps(Lackawanna NY)	English and Geoscience teacher intern	1971-1972
Peace Corps (Afghanistan-Helmand Arghandab Construction Unit)	Engineering English Instructor	1972-1974
Language House Iran (Esfahan)-Imperial Iranian Army Aviation Corps	Aviation English Instructor/Curriculum Developer	1976-1978
Barr Engineering	Field Geologist	1980-1985
Twin City Testing	Sr Project Manager/Site Assessment Coordinator	1985-1988
EnPro Assessment Corp	President/Principal Geologist	1988-present

AIPG Activities	Title	Dates
AIPG National	National Education Committee	1984
MN Section	President	1989 and 2002
AIPG National	Advisory Board Representative	2005
AIPG National	Annual Meeting CoChair (2006)	2004-present

CANDIDATES FOR AIPG NATIONAL 2007-2008 EDITOR

Gail G. Gibson

CPG-09993

Statement of purpose or goals you have for AIPG: As editor, I would strive for the continued production of a quality publication, a publication with information useful to our membership; to promote the sharing of that information both within and outside the membership through The Professional Geologist and annual meetings; encouraging participation of graduate and undergraduate students, encourage professional involvement of AIPG and its members with K-12; all the while working to strengthening the position and stature of AIPG.

Universities Attended	Degrees Granted	Dates
University of New Mexico	Ph.D.	1975
Ohio State University	M.S.	1967
Ohio University	B.S.	1964

Company	Title	Dates
Florida Community College at Jacksonville	Associate Dean for Mathematics and Natural Sciences; Professor of Geology and Environmental Sciences	2002 - Present
University of South Carolina – Salkehatchie Regional Campus	Dean for Academic Affairs	1998 – 2002
Collier County Government	Senior Hydrogeologist	1990 – 1998
UNC Charlotte	Director of Math and Science Education Center and Assist. Professor of Geology	1982 – 1990
Sul Ross State University	Assistant Professor of Geology	1999 – 1981
Trans-Pecos Geological Consultants, Inc.	Founder & CEO	1987 – 1989

AIPG Activities	Title	Dates
AIPG National	Associate Editor	2000 - Present

Douglas F. Scott

CPG-09852

Statement of purpose or goals you have for AIPG:
Attract high quality articles relevant to the practice of geology, geological research, and geological engineering.

Universities Attended	Degrees Granted	Dates
University of Washington	Master of Public Health	2001-2003
University of Washington	Certificate of Public Health	1999-2000
Chadron State College	Bachelor of Arts – Earth Science	1970-1976

Company	Title	Dates
NIOSH – Spokane Research Lab	Research Physical Scientist	2005-present
NIOSH – Spokane Research Lab	Research Geologist	1996-2005
U.S. Bureau of Mines	Geologist	1978-1996

AIPG Activities	Title	Dates
AIPG National	Associate Editor	1998-present

PROFESSIONALISM and the IMPORTANCE of AIPG

Lawrence C. Weber, CPG-07120

What does it mean to be a "professional?" What qualities are expected from a "professional?" How does a person become a "professional?"

Obviously we look to the substance of earning a living or working for monetary compensation as one attribute of professional activity; but, of course, the concept of "professionalism" involves much more. To me the concept of professionalism embodies the ability to work within a system of standards - standards of conduct, educational preparation and service-oriented performance. These standards are established by a group of individuals that are collectively qualified to speak on behalf of that group's common cause. The group should consist of the successful, dedicated, respected and admired practitioners, those who are knowledgeable of the technical content of the profession and who are honor-bound to serving others fairly and ethically. It is within this "peer group" that the qualities of the professional are defined and the achievement of "professionalism" can be confirmed. Professionals are not freelance renegades doing whatever they want to do, however they want to do it. Professionals recognize their limitations and work in recognition of their responsibilities and obligations to others, namely their clients, employers, peers and society in general. They accept and attempt to uphold the high standards that set them apart as "professionals."

How are the standards of professionalism recorded and conveyed to the practitioner?" Or, in other words, how does a person learn to become a "professional?" It has to be through association and communication with those who have already achieved professional status. Caution; not all persons who claim to be "professional" truly are. If you have not yet come across the self-proclaimed "professional" – one who upon casual inspection appears well-qualified and of good character, but later is found to be dishonest and poorly qualified – you are fortunate. If you are so unfortunate as to have encountered one of these non-professional "professionals, then the importance of AIPG and the message that it proclaims –competency! integrity! ethics! surely resounds with an importance that may have been less obvious before that painful encounter.

The role of AIPG and the importance of your membership go way beyond the services that the organization can provide, way beyond the credential of certification, way beyond the camaraderie or the business contacts or the available educational opportunities. It goes to the very heart of "Professionalism." It allows you to be part of that peer group defining the "professional." It gives you access to learning, mentoring, career growth and meaningful involvement in activities that shape you and your career. It makes you a part of an organization dedicated to improving and strengthening our profession and you as a "professional." I hope you value your membership as much as I value your membership.

Larry

AIPG Section Websites

AIPG Section Website links are on the AIPG National Website at www.aipg.org. Click on the top right drop down menu and click on Section Websites.

If your section does not have a website contact AIPG Headquarters to get one setup (wjd@aipg.org). AIPG Headquarters will maintain a website for your section. Several sections (AZ, CA, CO, GA, HI, IL Chapter, NM, OK, PA, and TN) are examples of websites hosted by AIPG National.

Is Your Profile Correct?

It is important to keep your address, phone numbers, and e-mail information up to date in our records. Please take the time to go to the AIPG National Website <www.aipg.org> login to the member portion of the site and make sure your information is correct. You can edit your record online. If you do not know your login and password you can e-mail National Headquarters at aipg@aipg.org or call (303) 412-6205.

Thank You AIPG Volunteers

William J. Siok, CPG-04773

Some AIPG members intentionally place themselves "in the know" about AIPG activities. They do this by volunteering time, energy, and resources on behalf of the AIPG membership and the profession. AIPG *is* a volunteer organization. The reality that AIPG is a true volunteer organization is a fact which accounts for AIPG's accomplishments.

The AIPG headquarters staff is small. There are three full-time and one part-time employee. The staff is productively busy managing the business side of AIPG and addressing the routine, as well as the unique, concerns and problems which confront members. But the work of headquarters is but part of the overall effort which makes AIPG successful. A few examples are appropriate to underscore the time and energy which volunteers contribute to accomplish important AIPG objectives. Very often an officer or staff member will be asked why AIPG does one thing (like certify professional geologists) and not another (like establishing a permanent presence in Washington, D.C.).

Of course, there are many aspects to the answer, but the actual response to all such inquiries is that the decisions to-do or not-to-do something are made by the Section and National Executive Committees according to the AIPG Bylaws. Those who serve in any leadership capacity, section or national level, are elected from among those who volunteer. The AIPG Bylaws confer upon them the authority and the responsibility to make decisions affecting AIPG. Not surprisingly, those who offer to serve are able to have direct influence in the directions taken by AIPG, since they are the ones who have taken on the responsibility TO direct AIPG. Certainly, like any elected officials, Section and National Executive Committee members do their best to take into consideration the opinions and wishes of their respective constituents (AIPG members). In the end though, they exercise their best judgment when a controversial issue arises or when the time comes to establish priorities.

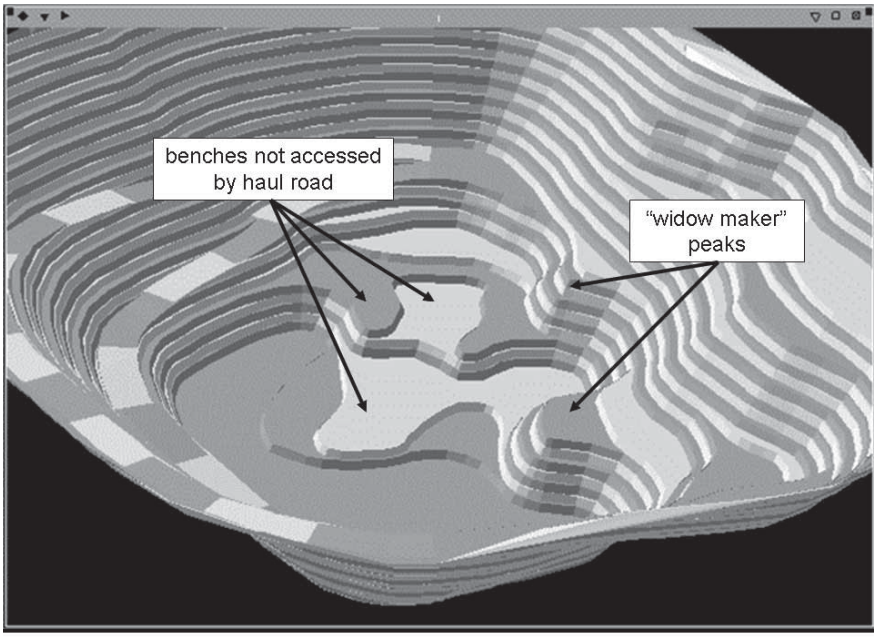
Largely, the point of this abbreviated civics lesson into the basic governance of AIPG is that the AIPG organizational leadership always strives to make decisions which would be in the best interest of the greatest number of members. Every now and then, an unhappy member contacts us with a complaint or an admonition. Most times, the subject is a worthy one. When responding to these members, and after discussing the specific issue, I often recommend that the individual take an active role in the Section or even on the National level. It probably will not surprise you that in most cases, the member fades into the background, not to be heard from again. Of course, there also are the legitimate conflicting opinions among members in which this member says "AIPG must do...", that member says "Under no circumstances should AIPG do...".

All can appreciate both the sense of frustration and of satisfaction which accrue to members of the Executive Committees. But these volunteers are the AIPG leaders and deserve the support and gratitude of all members.

The other major group of volunteers, but less recognized, are those who staff the Standing and *Ad Hoc* Committees. These individuals contribute a great deal of personal time and energy to complete routine, yet obligatory, AIPG work. Sincere expressions of appreciation are extended to the members of all section and national committees, especially Membership Screening, Annual Meetings, Nominations, Honors and Awards, Education, Ethics, and the myriad of ephemeral ad hoc committees which dutifully complete a project and disband.

Most certainly AIPG has a great deal to accomplish going into the future. Once the financial resources are available for increased professional staff to conduct more of AIPG's business, the Institute will not need to be as dependent upon its volunteers. Meanwhile, *thank you to all AIPG volunteers for getting the job done!*

**Compiled by David M. Abbott, Jr., CPG-04570,
2266 Forest Street, Denver, CO 80207-3831,
303-394-0321, fax 303-394-0543, dmageol@msn.com**



What's wrong with this computer program-generated mine design?

Engineers vs. Scientists (column 102, Mar/Apr 2006)

Greg Hahn, CPG, does think about pit designs and commented on the pit design contained in column 102. I have reproduced the pit design again in this column so that the discussion below makes sense.

Hahn commented, "I have to disagree with you on what is wrong with the pit design. First, from the angle of the drawing, you cannot tell whether the ramp accesses the lower benches or not. The haul road disappears from view behind the high-wall in the foreground of the drawing. In fact, it probably does access all benches if viewed from the other side of the pit.

"But there is something wrong with the pit design, that any engineering geologist or mine geologist should identify immediately. There are two 'widow peaks' in the pit design, on the right hand side of the pit drawing. These are multiple-bench convex outward surfaces, which are in tension, and which, especially given the depth within the pit and the lithostatic pressure and possible pore pressure under which they would exist, are susceptible to failure. These should be eliminated to minimize failure potential, by smooth-walling the designed wall on that side of the pit. The most stable pit slopes (all else being equal) are those that are concave-outward and in compression, not convex-outward.

"Of course this drawing of the pit design does not reveal the geologic structures which would be exposed in the pit, and these would likely have more to do with slope stability of this design than anything else."

Hahn's comment illustrates what I love about receiving comments on this column. Everyone has his or her own perspective on the issues presented and helps us all see more than we did before. I personally will stick with my earlier opinion that the wide benches on the far wall are not accessed by either the haul road or by narrow roads along the benches themselves from the hidden portion of the haul road on the near side of the pit. It appears to me that in most cases, the benches have been cut back to final cuts which have not left room for big equipment to move. But this is a matter of opinion. Hahn's pointing out of the "widow peaks" is something not previously recognized. As Hahn recognizes, we lack the geologic stratigraphic and structural information to assess the likelihood of potential failure of the "widow peaks." But simply recognizing the potential for them is important, because, having recognized the potential problem, you can investigate it. If the problem is unrecognized, nasty surprises can happen.

And, lest we forget, the point of the topic was over-reliance on computers without paying attention to the actual geology and the necessities of mining engineering like bench access.

Should a Subordinate Sponsor a Supervisor for Certification?

Larry Austin, CPG, Chairman of the National Screening Committee, occasionally sends the Ethics Committee very interesting questions. Austin's latest question involved an applicant for CPG who listed as one of his sponsors a CPG who works for him. The question is whether sponsorship by subordinates constitutes an irresolvable conflict of interest? Austin noted, "We clearly indicate that sponsorship by relatives and spouses is out but I do not think we have indicated directly that sponsorship by a subordinate is just about as bad."

My two bits are that this is a question that can depend on the circumstances. I am thinking of my own situation when applying for my CPG. I worked for the SEC and much of my work was non-public. I therefore had to have sponsorship letters from SEC colleagues and a supervisor (none of whom were geologists, but they did have some idea of what I did). There may be the occasional CPG applicant who works in a sufficiently restricted and non-public environment that sponsorship by a subordinate may be the only way to get some information on details of the applicant's work. Nevertheless, the conflict of interest exists. Generally, I think it is probably a not a good idea to have subordinates be sponsors. In the particular case presented by Austin, I am not sure that the restricted and non-public environment I have cited exists (although I do not know

the details). I suspect that everyone would be more comfortable with the addition of another CPG sponsor in addition to the subordinate. **Mac Armstrong,** CPG, agreed with this position.

Ted Wilton, CPG, wrote, "I can appreciate Larry Austin's concern in this matter. I would find it difficult (but not impossible) to decline my boss' request to be a sponsor were I approached to do so. However, we need to trust our fellow CPGs' judgment and ethics as best we can. However, I would have a very serious problem with an application if more than one subordinate were to sponsor a particular candidate.

"It would seem to me that the local and national screening boards would need to be especially careful in such cases, but I am not of a mind to suggest that AIPG should automatically reject an application if one of the sponsors is a subordinate of the applicant. If there are two other independent sponsors I would lean toward accepting the application and follow the recommendations of the screening boards.

Rima Petrossian, CPG, commented, "I can see why there might appear to be a conflict of interest, or at the least, an uncomfortable situation for a boss asking for a subordinates' sponsorship. In flat organizations, this is much less of a problem, one day the project leader, next day the team member. I would like to think that we could all feel good about this sort of opportunity, one that a boss would feel comfortable enough to ask a subordinate for a favor of a recommendation without feeling extremely embarrassed, and also that it would be allowed in the organization. We are having more input into our boss' reviews (360s as they are called in state government) every day, so the situation is changing for subordination and hierarchy, even in a bureaucracy! I have been in such a situation for writing a recommendation but I felt comfortable and happy to be able to be of such a help to my boss' boss. Nevertheless, not all relationships are equally sympathetic! I cannot really think of a good reason why not to allow a junior member of an organization, who has earned the right in AIPG to be a sponsor, not to be able to do so for anyone they deem worthwhile. The exception would be if they were coerced as part of retention of a job or project. In that case, the individual could always say they felt uncomfortable about the situation, but that may not get them out of the situation. If only this were an easy geological question."

Ron Yarbrough, CPG, agreed with Petrossian noting, "I recommended by boss at the Corps [of Engineers] for a position on a powerful committee in Illinois. Since I was an Illinois citizen and had been active in water resource planning I knew that he would do a good job. He did do a good job. Sponsorship of a talented person is an honor no matter what your position."

Fred Fox, CPG, wrote, "I see no reason why an ethical subordinate cannot sponsor a superior professional. After all, a boss can recommend a staff member—I have done it. Rank really has nothing to do with it. Competence has. I have been in the position of **not** recommending a boss—even going so far as to actively oppose it because the boss only was looking to pad his resume while not being qualified."

Michael Ruddy, CPG, contributed his thoughts. "My first thoughts were 'if the subordinate is qualified, and his supervisor is qualified and all corresponding documents and background meet the requirements, then this is not an issue—in brief: innocent until proven guilty.' *However*, not quite knowing the situation and the relation between the subordinate and the supervisor makes one have to stop and think. For example, is the subordinate being influenced to promote his/her supervisor without repercussion on the subordinate's employment? How long has the subordinate been employed under the supervision, or within the same division of the firm? How long has the subordinate been a CPG via AIPG? We must assume, initially, that peer pressure may be an influence (traditional response), and transition to a conclusion may, or may not be in order. With the changes you proposed to the bylaws regarding signature on the application/renewal forms that signify no action has been taken by any state or federal agencies, or that no sanctions have been imposed to the applicant by other agencies, then we, ourselves, have to give both the applicant and the subordinate a fair trial by accepting the application for CPG. Keep in mind that the applicant may not know (well) CPGs other than what has been submitted. This is not a conflict of interest (in my opinion) and if this eventually demands actions to be taken, please look at the background of the subordinate—again, length of time as a CPG, licensed by state authorities and more. If they are both on the up and up and everything is in order on the application, then, we can not assume a conflict of interest or a breach in the ethical conduct of either the applicant or the respondent. If there is, then it will show, given some time. We are not above the Bylaws and we should send a welcome to the new CPG as well as a pat on the back to the subordinate for supporting and sponsoring a new member into AIPG. Trust and ethics are what AIPG is all about. No conflict of interest or the like, in my opinion."

Students: Can the Same Term Paper Ethically Be Submitted to Different Classes?

Bill Dixon (CPG) related a story from his student days that poses an interesting ethical question. During his freshman year, Dixon took an English course that required a term paper. The academic objective was the process of creating a well-written term paper, complete with references, etc.; the subject of the term paper was up to the students. During the same term, Dixon took a geology course, which also required a term paper describing the geology of the student's home county. The geology professor graded not only the geology, but had the reputation of being a harder grader of English mechanics and writing than the English teacher. This situation raises the question, would it be ethical to write a single term paper on the geology of one's home county and submit it to both classes? One professor friend gave me his answer to this question, but I would like to hear yours first.

Topical Index to the Professional Ethics and Practices Columns

I have prepared a topical index covering columns that have been placed on the AIPG web site in the ethics section. The index is in PDF format. The original file is in Microsoft Excel format. If you would prefer the Excel file, send me an e-mail and I will send it to you. I will update this index periodically and post the new copy on the AIPG web site. If you have suggestions on organization, please let me know.

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READERS' Bill of Rights for Practicing Geologists

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and

Richard J. Proctor, CPG-05091, Consulting Engineering Geologist, Past President, AIPG

Introduction

There is a strong basic legal premise that the general citizenry deserve to be protected from incompetent practitioners of the learned professions as well as from poseurs claiming to be members of the professions. We geologists know this form of protection in the form of professional registration and certification and this form of assurance to the public was a founding concern for AIPG.

Competence in practice has three yardsticks of measure: 1) licensure (registration or certification); 2) maintenance of current technical competence and 3) adherence to a cannon of ethical behavior.

This article is concerned with the condition of our current technical literature as one of the three primary pillars supporting the knowledge base of our professional practice.

Role of Our Professional Technical Literature

A relevant bachelor's degree from an accredited institution of higher learning and a stated period of apprenticeship form the basis for application for consideration of licensure. Once the license is granted, after passage of some form of examination, the public remains protected to the degree of functionality of that license and of the licensure board and the supporting laws.

Once licensed the professional geologist is charged with maintaining personal competence and this requires each geologist to indulge in an active practice and to read and write relevant technical literature and/or to attend appropriate lectures or to complete additional accredited academic training.

For this reason alone, our technical literature becomes the underpinnings of long-term maintenance of technical competence. It is for that reason that the practicing geologist deserves to receive relevant and appropriate technical literature and this is a primary role of the technically-based professional societies established primarily on the grounds of gathering and transferring technical geologic knowledge.

Practitioners Deserve Relevant Technical Literature

To the degree that technical transfer of geologic knowledge is one of the fundamental bases for establishment and ongoing existence of the technical geologic societies, it stands to reason that their periodic and annual meetings, field trips, and journals should have a fundamental content of value toward maintenance of technical competence relevant to practice.

A General Impression of Technical Relevance

There is a general and long-standing, prevailing belief among practitioners of applied geology that the technical content of our journals is wanting in terms of relevance to practice. This thread of discussion is common but this notion seldom reaches print, as a basis for open consideration and discussion. That is the direct purpose of this article.

What Constitutes "Relevance" Of Technical Literature?

We believe that it is the basic responsibility of the author of a technical manuscript to declare or otherwise demonstrate the nature of relevance of content, for whatever purpose is intended. This burden is hard to deny and we believe that it is always appropriate for the author to declare to the potential reader, in the abstract, the introduction, the body of the paper, and the summary, how the content of the paper may be turned to advantage by the reader.

A second step then becomes important and that is for the editor and editorial board of the journal to justify acceptance or rejection of submitted manuscripts, not only on the basis of quality of composition and content, but to test the value of the paper in terms of its charge to provide relevant technical literature for the membership.

Why Technical Literature May Not Be Relevant To Practice

Most serious readers of geological literature carried in journals representing a membership of geologists practicing in the applied geosciences are capable of rapid assessment of the relevance of the technical literature provide them by their societies. These very individuals, however, are in the minority of those who write for the journal. The reasons for this traditional shortfall potentially are numerous, but likely are dominated by these considerations:

- Apparent constraints on direct use of content controlled by employer or client;
- Lack of available personal time for devotion to compiling technical papers;
- A mistaken concept, on the part of the practicing geologist, that a particular topic of personal involvement may not be of interest to the readership; and
- Lack of incentive, or even discouragement by the employer, toward published technical writing by their employed geologists.

If we ask the simple question of breadth and depth of personal experience as a basis for selection of relevant topics, then there follows a presumption that the one largest sector of potential technical authors may be "out of touch" with what content may be relevant to practice. This body of society members is

largely populated by university faculty, most of whom no longer have access to practical applications of geology due to the present-day situation in which applied geology has become a priced commodity riddled with bid-shopping and consequently our teaching colleagues no longer receive the usual peer-review and quality-assurance assignments. Hence, most university faculty, still striving to publish relevant materials, often put out manuscripts or marginal value in application to practice.

How Theoretical Papers Tend to Fall Short of the Needs of Practitioners.

Needs of practitioners are traditionally met when the author selects a topic for which there is a well-founded, stated declaration of a demonstrated or generally known, recurrent problem or concern for which the services of applied geologists are called upon to address and, hopefully solve. When the author fails to take the consideration to match demonstrated need for technical treatment, the chances are high that the resulting technical paper falls into a category of non-utility to the practitioner.

Protecting the Practitioner from Irrelevance of Content

The authors suggest that the editorial boards of our technical journals move to adopt a "Bill of Rights" for their readership. We offer a generic Bill of Rights for Readers of Technical Geologic Literature, to address the following requirements:

1) All authors should be required to state the case by which they advance the content of the paper to be of direct use in practice; if a paper is purely theoretical, this should be stated by the author, or the author should declare an assumed potential for application;

2) Where papers are based in mathematical analyses, the author should make clear the degree to which the equations are based on functions that are actual, versus, assumed, and;

3) Where mathematical analyses are employed the relevant degree of plus/minus accuracy known or expected should be declared; and

4) The author should clearly define any and all assumptions that have been made with respect to the physical (or chemical) properties, characteristics, parameters and other qualities that represent the geologic media that are treated in the paper.

A Call for Action

We do not advocate that the practicing membership of the geological professional societies abandon their memberships out of their personal frustrations of not being served by their own journals. But we do call for action, both from the memberships and from the editorial boards, to recognize this issue and to take appropriate action.

For those of us who believe that a "Bill or Rights" should be adopted we call for at least a declaration of intent and applicability be incorporated somewhere within the body of each manuscript, thus correcting a consistent present flaw of avoidance of the issue of relevance.

Even more effective would be the concerned, long-term participation of applied geologists in joining the ranks of concerned society members who are taking the time to serve as manuscript reviewers for such of our geological journals as serve practicing professional geologists. Better yet, such concerned members of the profession should also consider coming forth to serve on editorial boards where their concerns may someday and in some way be heeded more directly.

As a manuscript reviewer or member of an editorial board, also providing reviews, you the practicing member of the profession, will be in a position to question the acceptance of manuscripts that show no statement or evidence of application to actual use by members of the profession.

Summary

It is our belief and concern that our professional society technical literature generally is not meeting the real needs and full measure of potential use to the bulk of the membership of our societies. We put this concern in front of the profession and invite the membership and readership to comment in this column in The Professional Geologist. At least in this sense, we will have the issue "out in the open" where it can no longer be neglected.

Allen Hatheway (allen@hatheway.net) is an early-retired Professor of Geological Engineering who has practiced for 44 years, in his native Los Angeles, and at San Francisco, Boston, and in Misouri. He has served his profession as a teacher, soldier, public servant, and consulting firm staff and partner. He is professionally licensed as Geologist and/or Engineer in several states (AZ, CA, MA, ME, and MO), but swears that his formal education has been strongly tempered in the School of Hard Knocks. He serves as one of AEG's ambassadors to AIPG, as an Honorary member (2002) and past president of the former (1985). He and wife Dina split their time between Big Arm, Montana and Rolla, Missouri.

Contract Language — Part II

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Back in Column 10, I wrote about indemnification and limitation of liability language in contracts. I would like to return to the topic of contracts and discuss some additional clauses. As before, the sample language that I will be using in this article is taken from the "ASFE Contract Reference Guide, Third Edition" by John Bachner, which was published by ASFE and co-sponsored by AIPG.

Standard of Care

This is clause that can cause you a whole lot of trouble. Watch carefully for wording like:

> *CONSULTANT warrants that CONSULTANT'S experience, knowledge, and expertise qualify CONSULTANT to implement CONSULTANT's scope of service in accordance with the highest professional standards.*

The use of words like "highest professional standards" creates problems. What does the "highest standard of care" mean? The standard of care is usually defined as the ordinary diligence exercised by fellow professionals performing the same services under similar circumstances in the same time period and area. Note that it is "ordinary diligence" not highest diligence. I once visited with an environmental consulting firm in Chicago and while discussing contracts with them, they proceeded to tell me about a project they were looking at. The project was a Phase I Environmental Site Assessment for a law firm (strike one), that submitted a 26 page contract (strike two), and that included a clause that stated that the consultant would perform their services consistent with that of a "first class" consulting firm (strike three). I do not know what a "first class" consulting firm looks like. Most firms think that they are better than the average firm. You have to watch out when you are contractually required to be better than average.

Remember that the standard of care language needs to take into consideration the geographic and temporal differences in standards. What may be the standard in coastal plain sediments in New Jersey may not be the standard in a glacial till area in New York State. The temporal consideration is just as important. Over time, standards change due to new knowledge or improved technology. You want to be judged by the standards in effect at the time you did the work not the standards at the time the negligence claim is filed.

Insurance

This is an area where client demands are sometimes unreasonable or simply illogical. One of the more popular client requests is that they be named as an additional insured on your professional liability policy. Most if not all insurance carriers will not allow this. Adding the client as an additional insured would require your insurance carrier to defend the client in the event of the third party claim. You could find your self in a situation where your policy limits were eaten up with costs to defend your client and leaving nothing to cover your defense costs or any indemnity payments. This is not in your best interest.

Another area is where the client requires that you maintain your insurance for a set number of years after the project's completion. It is impossible to be able to guarantee that you will be able to have coverage years into the future. There could be changes in the insurance market where insurance is either no longer available or is cost prohibitive. The client needs to understand this. Look for language that acknowledges the potential for the insurance to be cost prohibitive.

Another requirement is the client wants 30 days notice from the carrier in the event of cancellation, non renewal, or material change in the policy. Most carriers will agree to provide client notification of cancellation or non-renewal as spelled out via endorsement to the policy. The requirement of notification of material change is problematic as there is not a clear definition of material change. Agreeing to that requirement would put your carrier in the position of having to notify the client if a reserve was being posted or raised on a claim or a claim payment was being made. Your carrier is not likely to agree to that.

Lastly, one of my favorite requirements, which seems to be a popular one in California with entities such as the Port of Long Beach or the Los Angeles Department of Water and Power, is to have a "special endorsement" added to the policy. These endorsements usually include some of the items already discussed, but the real problem is adding

the endorsement itself to the policy. Professional liability policies can be written on admitted or non-admitted paper. Admitted paper has been approved by the state insurance commission in regard to the policy wording and rating of the risk. The carrier has to strictly adhere to the state requirements and is usually limited to only using endorsement wording that has been filed with the state. Non-admitted paper is also know as excess and surplus lines paper and is not constrained by rates and filings. The special endorsement usually requires that the policy be written on admitted paper but the adding of a special or manuscript endorsement puts the carrier in violation of the admitted paper regulations. Trying to explain to the client that they can not have their cake and eat it too can be exasperating.

Consequential Damages

These are damages that result as a consequence of another event such as a factory impacted by a power failure caused by a drill rig severing an underground power line. The cost to repair the power line is a direct damage, while the loss of profits from the factory being shut down is a consequential damage. As you can imagine, consequential damages can be expensive. Having a limitation of liability clause as was discussed in Column 10, would help limit your exposure to consequential damages. However, to further protect yourself, it is suggested that you include a provision in your contract to provide a mutual waiver of consequential damages. An example of such language is as follows:

CLIENT shall not be liable to CONSULTANT and CONSULTANT shall not be liable to CLIENT for any consequential damages incurred by either due to the fault of the other, regardless of: the nature of this fault; or whether it was committed by CLIENT or CONSULTANT, their employees, agents or subcontractors; or whether such liability arises in breach of contract or warranty, tort (including negligence), statute or any other cause of action. Consequential damages include, but are not limited to, loss of use and loss of profit.

Right of Entry

This is not a concern if your client owns the property that you need to investigate. However, many times the client does not own the site so the client may try to shift the responsibility for obtaining right of entry to the consultant using language like:

CONSULTANT shall obtain all permits and licenses that are needed to enter the project site in order to conduct the tests and collect the data required.

This may require you to spend significant time obtaining the permit or obtaining permission from the property owner. This is not the best use of your time. Also if your project is a lump sum project, you might find a significant number of hours utilized in obtaining permissions that were not taken into account at the time you bid the project.

A better right of entry clause would be:

CLIENT shall provide for CONSULTANT's right to enter from time to time property owned by CLIENT and/or other(s) in order for CONSULTANT to fulfill the scope of service indicated hereunder. CLIENT recognizes that CONSULTANT's use of exploratory equipment may cause some damage, and understands that the correction of such damage is not part of this AGREEMENT.

This puts the onus on the client to get your firm access to the property. Be sure to get the go-ahead in writing from the client. I had worked on a Superfund project near Allentown, Pennsylvania and we needed to do some test borings on adjacent properties. According to the consulting firm representing the PRPs, we had permission to access the properties. As we were pulling augers upon completion of a boring, a landowner came over and asked what we were doing on the property. I explained that we were collecting soil samples as part of the closure investigation. He responded that he wanted to know what we were doing on the property without his permission. I told him that we were told we had permission to be on the property. Apparently, he had not been contacted and therefore had not given permission. Fortunately, for me and the drillers the owner was not armed. I am sure some of you have stories of being on the wrong end of a shotgun as a property owner wants you off his land.

The other important issue in the above clause is putting the property restoration responsibility on the client. Drill rigs will rut lawns, crack sidewalks, and cause other damage. Restoration costs could cut into your profit margin so it is better to let this sit with the client.

DISCLAIMER: This article should not be construed as legal advice. I am not a lawyer nor do I play one on television. Competent counsel with expertise the professional service contracts should be consulted.

Send comments to: Martin Andrejko, CPG-08512, Senior Underwriter, XL Design Professional, 520 Eagleview Blvd., Exton, PA 19341, (610) 321-9227, Fax (610) 458-8667, e-mail: martin.andrejko@xlgroup.com.

The Attack of the BLOG

Duane A. Carey, CPG-10305

They are everywhere, and they seem to multiply like some prolific alien species in a B-Movie. From the inane personal blogs, that seemingly have no purpose, to the typically more thoughtful political and news blogs, the blog phenomenon appears to be here to stay. Interestingly, blogging can be a useful tool for professionals to grow their businesses. To find out more about how geologists can employ this technology, I recently sat down with Marci De Vries, owner of 4Syndication, a Baltimore-based firm specializing in search engine optimization and blogging software. My questions are followed by Marci's answers below.

What are blogs and how can geologists use them to promote their businesses? "Blog" is short for "Weblog", which is a technology developed a few years ago to make it simple for people to publish on the Web, even if they do not know how to build web sites. Bloggers do not have to know anything about HTML or servers or transferring DNS address to get started – they just sign up for a blogging service and they are live on the Web in minutes. Often the software is free.

Geologists have very specialized expertise. Posting some of this information to a blog is one way to provide a lot of good information via the Web in a way that is constantly up-to-date and helps build credibility for the individual geologist or firm.

So if I have a website, why do I need a blog? Most anyone who has worked with their Web site for a while knows that the format is cumbersome. Often there is news that should be uploaded to the site but there either is not a good place to put it on the site, or it is too much work to program it.

Blogs simplify the act of posting news as well as providing an appropriate format for "all that other stuff" that does not need to be a part of your main site.

Additionally, blogs have a technology format that is read more easily by the search engines, so the news posted on a blog delivers greater visibility on the Web than a static site alone.

Why are blogs read more easily by the search engines - is it because they do not contain all the "fluff" of graphics, flash animation, etc? Yes, that is part of it. Web sites are not standardized, so the engines have a difficult time reading the sites and then indexing the information in an appropriate way.

But there is more – most blogs have an RSS feed associated with them. RSS feeds are a translation of the blog into XML, which is a programming language that is simple for the engines to read. With this system the blog posting can be indexed more correctly. It also allows every combination of words within the posting to be understood by the engines and delivered appropriately in response to search engine queries.

Okay, so this is where you start to lose me. I have read that RSS stands for Really Simple Syndication, but the whole process seems anything but simple. Does the RSS feed do this translation automatically, so all I need to do is type in my text and hit a button? It is still simple – do not lose faith. As a blog publisher, the RSS translation happens behind the scenes and you do not need to "do" anything to make it live.

You may have heard about RSS as a way to subscribe to blogs from your desktop. That process is still easy, but not quite as automatic as it is for publishers.

How does someone get started with a blog? What are the various options? There are a number of free or low-cost options available on the Web. Try Googling "Free blog software" and you will have them all to choose from. The easiest free ware to set up is at blogger.com. Basically you just type in your user information and within minutes you have a blog. Moveabletype.org is a low-cost option that has some increased functionality compared to free software such as Blogger.

At the high end are blog applications customized for businesses – these include visitor statistics information and an interface that can be customized to your Web site's design criteria. At the top of this category, some blog software even includes search engine optimization and online content distribution. My company, 4Syndication.com is an example of a high-end business blog software.

Once your blog is live, you will want to build an editorial calendar and stick to your publishing schedule. You can blog as frequently as every day or as rarely as once a month and still receive good results from your blog.

Can you define "good results"? For example, if someone invests the time to blog once a week (assuming the content is relevant, well-written, etc.), what should they expect,

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increased web visitors to their web site? What percentage increases have you seen? We have tracked results in 4Syndication software and seen an increase of between 5,000 and 13,000 new eyeballs per month. These are not usually visitors who came to the blog from the publisher's Web site; rather, these are visitors who found the blog postings in search engines and content aggregators across the Internet.

Many of our blog clients have seen inquiries directly from the blog within three months' time. By the three month mark, their blogs are linked and referenced all over the Web, drawing an enormous audience.

To put some numbers to this story: if your Web site usually draws 2,000 visitors per month (the average for a 15-20 person company), the blog more than doubles this number right away. If the number of inquiries per month is seven or eight (which is good for a 15-20 person services company) they can increase inquiries by 20-200%. With larger companies these numbers thin out a little, but they are still measurable and significant increases.

Duane Carey is President of IMPACT Marketing & Public Relations in Columbia, Maryland. He was a consulting hydrogeologist for 11 years prior to launching a marketing consulting firm in 2003. He earned his MBA at Johns Hopkins University (JHU), and is a Certified Professional Geologist (#10305) and past President of the Capitol Section of AIPG. In late 2005, he took over the helm of IMPACT, which was founded in 1990 by one of his professors at JHU. He can be reached at 410-312-0081 or duane@MilkYourMarketing.com

SCIENCE IN THE NEWS

from Sigma Xi,

Fossil Called Missing Link From Sea to Land Animals from the New York Times

Scientists have discovered fossils of a 375-million-year-old fish, a large scaly creature not seen before, that they say is a long-sought missing link in the evolution of some fishes from water to a life walking on four limbs on land.

In two reports today in the journal Nature, a team of scientists led by Neil H. Shubin of the University of Chicago say they have uncovered several well-preserved skeletons of the fossil fish in sediments of former streambeds in the Canadian Arctic, 600 miles from the North Pole.

The skeletons have the fins, scales and other attributes of a giant fish, four to nine feet long. But on closer examination, the scientists found telling anatomical traits of a transitional creature, a fish that is still a fish but has changes that anticipate the emergence of land animals - and is thus a predecessor of amphibians, reptiles and dinosaurs, mammals and eventually humans. http://tinyurl.com/o5eyw

Planets May Form Around Dead Stars from Discovery News

Astronomers have made a curious finding of a dusty disk of material that may hold planets in orbit around the dense, dead relic of a massive star.

The chance of life in this system is highly improbable, as any planetary environments would be unsuitable for liquid water and the relatively lightweight chemical ingredients for life - oxygen, hydrogen and organic molecules - would have been obliterated in the star's death throes, scientists who made the discovery said Tuesday.

"This is not Malibu," Chas Beichman, an astronomer with NASA's Jet Propulsion Laboratory in Pasadena, Calif., said Tuesday. "This is not what the search for habitable planets is likely to find is a very attractive place." http://tinyurl.com/ry8dr

Hurricane Forecast: Active, But Calmer Than Last Year from the Washington Post

MIAMI, April 4 -- The 2006 hurricane season will not be as ferocious as last year's, when Hurricane Katrina devastated New Orleans, but will still be unusually busy, a noted forecasting team predicted Tuesday.

The Colorado State University team led by William Gray, a pioneer in forecasting storm probabilities, said it expects 17 named storms to form in the Atlantic basin during the six-month season starting in June.

Nine of the storms will probably strengthen into hurricanes, with winds of at least 74 mph, the team said, reaffirming their early prediction in December. http://tinyurl.com/ke4eo

California Moves On Breakthrough Plan to Cut Greenhouse Gases from the San Francisco Chronicle

Sacramento -- A landmark plan for reducing greenhouse gases in California beginning in five years moved forward Monday with the backing of Gov. Arnold Schwarzenegger and legislative leaders.

The plan, drawn by administration advisers, would put in place a series of groundbreaking programs including a requirement that companies keep track of their greenhouse emissions and report them to the state.

Even before the ink was dry, key legislative leaders announced their embrace of the plan's ambitious goals and their intent to introduce legislation that would impose hard limits on future emissions. http://tinyurl.com/mh8n6

A Changing World Means a Changing Job Market for Geoscientists

Nancy Price, SA-0382

It is a changing world out there. As the rate of growth of the world's population continues to increase, the demand on natural resources, such as oil, gas, and clean, drinkable water, also continues to increase. The world is facing an energy shortage and a water shortage. In addition, people are becoming more aware of the severe environmental impacts that are caused from our society's current and past choices All of these issues are finally moving out of the confines of science and are becoming serious social worries and problems. We are past a time of naïve unaccountability and are entering a time where smart and responsible choices are needed. Environmental and energy issues are beginning to have a noticeable affect on business practices, public policy and international relations. It is not long before the effects trickle down to also have a large impact on the job market.

Geology and the geosciences profession will be among those fields that will be greatly affected by this changing world. This is due to the fact that these issues intimately involve the earth and earth processes. I recently read of the SECUREarth initiative (Scientific Energy/Environmental Crosscutting Underground Research for Urgent Solutions to Secure the Earth's Future) in an AGU publication and it made me aware of the importance certain areas of geology will play in solving many of the issues the world is faced with. These will undoubtedly be the areas where the jobs will be available in the future:

Environmental Remediation

This has been an important area in the past and will continue to be important in the future. As our understanding increases of how chemicals affect living systems, our need to clean up industrial sites and areas with contaminated soils or groundwater will also increase. Trained geologists with experience in proper chemical disposal will be the best qualified for these types of jobs.

Hydrology and Groundwater Studies

Clean, drinkable water is expected to become a limited resource in the future because of changing climate patterns and an increased demand from a growing world population.

There will be a need for geologists who can both understand groundwater systems and who can manage those systems to the extent that a supplier will be able to effectively meet demands in all perturbations of climate. In addition, there will be a need for qualified individuals who can work toward keeping our current aquifers clean and functional as sources of useable water.

Oil and Natural Gas

Although there is a push to turn away from a petroleum-based society, a complete separation from oil and natural gas as energy sources is still far in the future. Also, as developing countries increase their need for energy, the demand for oil and natural gas will continue to increase driving up prices and increasing pressure to decrease costs. This will create a need for geologists who can extract as much oil or natural gas from the ground as possible while at the same time decreasing the environmental impact.

Geomicrobiology

In the effort to find a biological solution to our problems, some scientists are turning to microbes. Industrial processes create waste products, which then build up in the environment. If we can find a bacterium that will digest and break down the byproducts of industry, then the issue of waste disposal is easily solved. With this as a starting point,

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the world of geomicrobiology has the potential to explode. Microbes could be an important component of site remediation and even for the production of safer, cleaner, and new forms of energy. Geologists who can study the interaction of microbes with earth materials will be best prepared to take advantage of the jobs produced in this area.

Geothermal and Alternative Energy

Of course, on the opposite side of the oil and natural gas coin is the drive to find alternative sources of energy. One choice is geothermal energy. For geothermal energy to work as a major energy supplier, a geothermal system needs to be large enough and reliable enough to produce the minimum amount of electricity for large-scale commercial purposes. To achieve this, geologists need to find a way better to control underground geothermal systems to ensure a reliable flow of hydrothermal fluids as well as identify places geologically feasible to develop new geothermal stations for increased production.

Waste Disposal

Finally, there is the issue of what to do with the waste products that we have already created, or more specifically nuclear waste disposal and CO_2 sequestration. Disposal of both nuclear waste and CO_2 has been aimed at underground storage. This raises the issue of whether or not the places of disposal are ideal or even safe. The dangers of fractures and faults in underground storage areas for nuclear waste have brought up the issue of leakage and contamination. The safety of these storage areas has to be considered on an extremely long-term basis because of the length of time that nuclear waste remains toxic. In addition, for CO_2 sequestration to become a reality, there needs to be porous layers underground that it can be pumped into without the worry of leakage or subsequent chemical reactions with the concentrated CO_2. Innovative geologists who can understand and model complex earth systems will be needed to address these issues.

With all this in mind, I am not advocating that geology students change their focus and pursue a field that is going to be in demand in the future. If a direction or career is in your heart, please follow your bliss. I am simply trying to introduce an issue that as a future practicing geologist you cannot ignore: it is harder to find a job in some areas versus others. It is, therefore, not a bad idea to be mindful of where the jobs may be in the future while you are still in school and making these decisions about your career. Keep an eye on the world and have enough foresight to anticipate where geology as a field may be going. Things are changing, be sure to stay with them.

If you have any ideas, questions, or comments about this article, the upcoming article, or any other issues, please feel free to contact me via email at: nancyaprice@yahoo.com.

STUDENT APPLICATION FORM

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Last Name: First Name: Middle Initial :

College/University: Geological Degree: ☐ BA ☐ BS ☐ MA ☐ MS ☐ PhD ☐ None Year:_____

Address: City: State/Zip:

School Phone: Home Phone: E-mail:

ATTESTATION: I attest that I meet the requirements for AIPG Student Adjunct (currently enrolled in a geological science degree program) and agree to abide by AIPG Bylaws and Code of Ethics.

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Have your faculty sponsor complete the statement below before submitting **OR** AIPG will contact your sponsor(complete name & ph. #)

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I certify that I am a member of the faculty of the _____ department at _____ _____, with the rank of _____, and that the statements made by the applicant in this application are true to the best of my knowledge or belief. I am ____/am not ____ the applicant's faculty advisor.

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Application for Certified Professional Geologist

AL-Michael G. Bersch
Univ. of AL, P.O. Box 870164, Tuscaloosa, AL 35487-0164

OH-Mark R. Boardman
Inst. of Envir. Sciences, Boyd Hall, Miami Univ., Oxford, OH 45056

NV-Kevin M. Conway
P.O. Box 50835, Sparks, NV 89435

SD-Kevin M. Elliott
29017 Tower Court, Pierre, SD 57501

CO-Leonard J. Karr, II
173 White Ash Drive, Golden, CO 80403

NV-Thomas R. Kilbey
485 Tina Ct., Sparks, NV 89436

NY-John H. Kreiger
P.O. Box 360, S. Gully Rd., Cragsmoore, NY 12420

NV-Arthur R. Leger
2338 Sunrise Dr., Reno, NV 89509

CA-Edward P. Lump
Envir. Equalizers, Inc., 5845 Avenida Encinas, Ste. 128, Carlsbad, CA 92008

NV-Laurence G. Martin
3154 Clan Alpine Dr., Sparks, NV 89434

MA-Joshua C. Millard
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NY-Kevin P. Murphy
215 West Ave., Patchogue, NY 11772

ID-Bruce R. Otto
333 Provident Dr., Boise, ID 83706

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1555 Zolezzi Ln., Reno, NV 89511

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O'Brien & Gere, Inc., 5000 Brittonfield Pkwy, Syracuse, NY 13221-4873

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OH-Tim J. Agnello MEM-0805
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MT-Brian P. Bergeron MEM-0411
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NC-John M. Stewart MEM-0704
Trigon Engrg. Consultants, 313 Gallimore Dairy Rd., Greensboro, NC 27409

New Certified Professional Geologists

CO-Jeffrey W. Brame CPG-10950
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KY-Craig W. Daniels CPG-10960
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MI-Andrew J. Lahaie SA-0899
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Preferred Mailing Address: ☐ Home ☐ Business Self-Employed?☐Yes ☐No Birth Year:

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AIPG Section Activities on Registration

Ronald J. Wallace CPG-08153

For many years now the individual AIPG Sections have taken the lead in legislation concerning licensing of professional geologists. Recently there have been four states that have quite different issues on registration of professional geologists.

Michigan and Oklahoma entered bills to their legislature for the creation of the license for geologists. The Michigan Section is working with both Democrats and Republicans to gain support for bills (HB 4440, 4441, and 4442), which would establish Geologist Licensure. The point of contact with the Section is Walt Bolt or Kevin Lund but the entire Michigan Executive Committee has been the force behind the bills. The Section resolved any issues with the Professional Engineers but they are receiving opposition from the Michigan Oil and Gas Association (MOGA). MOGA claims the licensure of geologists will cost the oil and gas industry millions and is bad for commerce. The Section requested proof of their claims but no examples were offered. Presently the Section is trying to raise money to hire a lobbyist in the State Capital to explain their position and either work with MOGA to resolve the issues or challenge MOGA's claims. The bills are still in committee and it is unknown if they will be voted on. The Section is also trying to find ways to connect the geologist licensure with protection and management of groundwater and land use.

The Oklahoma Section created a committee chaired by Joe Foster and comprised of AIPG and AAPG representatives, Dr. Charles Mankin with the Oklahoma Geological Survey, and others to review and comment on the proposed licensure. The Section gained support from a Democrat to author the bill in the House (HB1972) and a Republican in the Senate. Another version of their bill that was contentious to the petroleum industry circulated the Capital. Resistance was also encountered by Society of Independent Professional Earth Scientists (SIPES). They perceived the bill as Big Brother interfering in their business. The Oklahoma Section quickly reacted to the other bill and questions charged by others in stating their would be a grandfather clause and exemptions from required licensing for petroleum and mineral exploration geologists. The bill emphasizes the need for licensing of geologists involved with public health and safety and the environment. The bill went to the State House but was tabled to allow time for people to review the bill. Two petroleum companies and the Oklahoma Independent Producer's Association (OIPA) had concerns with the bill. The Oklahoma Section feels that the bill was moving too fast so time was needed for others to read and study the bill. The Section hopes to move the bill forward and continue to promote the bill and have all geologists read and support it.

South Carolina completed their second year of trying to preserve their P.G. license. The governor has been trying to eliminate the Board of Registration for Geologists and replace it with a certification. The title would change from P.G. to Licensed Geologist. The governor is trying to eliminate and deregulate some of the licensing boards to decrease the size of government. Jim Ferguson and Bill Wood have been active in getting out any up dates and meetings by email and attended and testified at subcommittee hearings. The South Carolina Association of Environmental Professionals has also been active in attending hearings and had meetings with the Division of Professional and Occupational Licensing. The elimination of the Board was dropped in committee but there had been fears that it would be attached to other legislature. As of now the proposed elimination has been stopped but may be introduced by the governor in the future.

Tennessee currently has a geology registration law without any testing or a Geology Board. A person can be registered as a geologist and after five years of work experience can be a P.G. The Tennessee Section is in the early process of polling their members and Tennessee licensed geologist to determine the amount of support for more stringent rules. A geologist registration act was proposed in 1999 but withdrawn because of it was not supported by the Department of Commerce and Insurance, or by its staff attorney. The Department raised questions about the number of staff required to administer the act, as well as the cost involved

So what have we learned in this legislative process? You need to have the support of the entire geology community. If you cannot win them then why go through the process. Identify all the stake holders and get all their issues for and against. Meet with them one on one to resolve any issues and try to gain their support. You need to have a single point of contact to meet with each stake holder group. Depending on the number of organizations you are working with you may need three or more people that only communicate to their assigned stake holder. Your biggest challenge may come from the petroleum and mining organizations. Never allow an exemption into the bill without a commitment of support from the group that will gain from the exemption. Seek support from your clients, regulators, local government, other civic groups. Stay in close contact with your supporters.

Now you are ready to go to the legislature. Put together a white paper outlining what geologists do, why licensure is good for the public protection, and get your letters of support into a brief that can be given to legislators or their staff. Identify an up and coming legislator that is open to sponsoring the bill. Make the bill cost neutral for the state to enforce. You will now need a lobbyist or a geologist with lots of free time located in the capital that can act as a single point of contact and one voice in telling the goals and fend off the opposition. It is not an easy process and may take years and tens of thousands of dollars to get passed by the state legislature.

AIPG Membership Totals

	As of 04/05/05	As of 04/11/06
CPG - Active	3,550	3,536
CPG - Retired	450	439
Member	506	515
Registered Memb.	13	11
Associate Memb.	16	20
Student Adjunct	308	292
Honorary	21	24
Corporate Member	4	3
TOTALS	4,868	4,840

California Section

SEVENTH ANNUAL CCGO SACRAMENTO DRIVE-IN!

CCGO Delegates will drive, fly, and hitchhike (or at least share a ride) to our state capitol from all over California to attend the 7th Annual CCGO Sacramento Legislative Drive-in (Lobby Day) on Tuesday March 7, 2006.

The purpose of the CCGO Drive-In is to bring attention to the need for regulations and laws requiring high-quality geologic work for public protection, and to fund the appropriate state and local programs that are needed or mandated by the government. As part of the outreach, CCGO plans to meet with many legislators, as well as policy makers.

We are planning to meet with Judy Wolen, AEG Lobbyist and CCGO Legislative Analyst. CCGO is planning to meet in the morning with Paul Sweeney, Executive Officer of the Board for Geologists and Geophysicists (BGG). We will discuss legislation and bills to watch. Later we will meet with geologist Stephen M. Testa of the State Mining and Geology Board (SMDG).

We will also meet with Dr. Parrish, State Geologist with the California Geological Survey (CGS). He had also been the Executive Director of the BGG, SMDG, so he will be well aware of the issues of concern to geologists.

Last years visit: 6th Annual CCGO Drive In

Front, left to right: Charles Nestle (CCGO VP, AEG So Cal); Judy Wolen (CCGO and AEG Lobbyist); Jennifer Davis (AWG Student Representative); Back, left to right; Matthew Hawley, AEG So Cal; Jim Jacobs (Former CCGO President, AIPG, GRA), Jason Preece, CCGO President, AEG Sacramento; Rick Blake (AAPG, CCGO Former President)

Capitol Section

The Capitol Section (including Maryland, Delaware and Washington D.C.) met for a membership/dinner meeting on Thursday, February 16, 2006. The guest speaker was Dr. Alan Cutler, geologist and author of the book, The Seashell on the Mountaintop. Topics of discussion included membership development, ideas for future events/field trips and Professional Geologist (PG) licensure in Maryland. PG licensure in Maryland is definitely a hot topic in the Capitol Section, and there was excellent round table discussion on the matter during the meeting. We plan to establish a PG Licensure Committee and explore the possibilities of making this a reality. We certainly welcome any advice from our fellow Sections. Also, please keep an eye out in upcoming TPGs for Capitol Section Past President Duane Carey's column on marketing - the business side of being a geologist.

Jake Wilburn, MEM-0122,
Capitol Section President

Colorado Section

2006 Legislative Reception Report

By Tricia Beaver and Anne Weber, 2006 Reception Co-Chairs

The 2006 annual Legislative Reception for the Geosciences in Colorado was held February 16th at the University Club. Although it was a bitterly cold evening, a roaring fire in the massive fireplace of the lovely College Room set the stage for a successful reception. Every participant had an opportunity to meet with legislators and state officials in a relaxed and social environment to provide educational and scientific information on the importance of the geosciences to our State.

Although positive RSVPs had been received in advance from more of Colorado's elected legislators than in years past, the weather did reduce final attendance. However, the legislators in attendance expressed significant interest in geoscience issues and participants used the opportunity to engage in more in-depth discussions on the critical issues under current consideration by the legislators.

Exhibitors who helped fund the 2006 Reception were: Colorado Division of Water Resources, Colorado Energy Research Institute, Colorado Geological Survey, Colorado Ground Water Association, Colorado Oil and Gas Conservation Commission, Colorado School of Mines Department of Geology and Geological Engineering, Rocky Mountain Association of Geologists, and Friends of Dinosaur Ridge.

In addition to the Exhibitors, a mixture of professional organizations, academic departments, trade associations, companies and individual geologists also financially supported the 2006 Reception as Co-Hosts: Bill Barrett Corporation, Bjork Lindley Little, Colorado Mining Association, Colorado Oil and Gas Association, Cordilleran Compliance Services, Denver Museum of Nature and Science, Duke Energy Field Services, Kerr-McGee Rocky Mountain Corporation, O&G Environmental Consulting, Peters Geosciences, Petroleum Development Corp., Pioneer Natural Resources, University of Northern Colorado Department of Earth Sciences, Weber Law Firm, Welborn Sullivan Meck & Tooley, and Whiting Petroleum Corporation, along with individual co-host CS-AIPG members David Abbott, Larry Anna, John Haun, Logan MacMillan, Ron Pritchett, David Rhode, and John Rold. We also thank all CS-AIPG members who participated through their individual attendance and/or financial support.

The 2006 Reception program included a list of Exhibitor and Co-Host organizations websites, including the AIPG website, as a take-away resource for participants to obtain additional information. These programs will be distributed to all legislators, even those who were unable to attend.

Georgia Section

Georgia State University Chapter

The GSU AIPG student chapter has a full slate of great activities planned for our spring semester. We have already visited Hickory Ridge Landfill where we spent an informative afternoon with geologists and other waste management professionals working at the site. At our monthly meeting on Tuesday, March 21st, Kelly Adams, GSU graduate and Advanced Geologist at the EPD, joined us to discuss the ASBOG FG exam and how students can better prepare themselves for the working world of geology. Next up, we are very pleased that AIPG National President Larry Weber visited us on the afternoon of Friday, March 31st. Our esteemed Georgia AIPG president Ron Wallace gave a presentation while we enjoyed the best pizza in downtown Atlanta (Rosie's!). Afterwards we visited a remediation site. If all this weren't enough, on Thursday, April 6th we held our annual GSU Geology Career Night. Professional geologists from the public and private sectors gave brief presentations on their careers and companies/agencies with time for networking and refreshments afterwards.

Beth Lavoie, SA-0729
GSU AIPG Student

Chapter President
bethlavoie@yahoo.com

P.G. PROPOSED LEGISLATION

Senate Bill SB 434 proposes the requirement for continuing education in order to renew your P.G. license. It passed out of the Natural Resources Committee but held in Senate Rules Committee.

HB 1546 would create a State Licensing Board for Professional Soil Scientists. Passed committee vote. Both of these are probably dead this session unless they are amended onto another still active bill.

Ed Hood with Allied Waste discussing a methane well.

Meetings

We had 17 people attend our February 24, 2006, field trip to Hickory Ridge Landfill. The weather turned out to be great for a Friday afternoon. I would like to thank Christy Kehn-Lewis and Kevin Collins from the EPD for their discussion and Ed Hood with Allied Waste, for showing us the operations of the landfill.

The Georgia Association of Water Professionals Spring Conference was on April 4 and 5, 2006, at Callaway Gardens. There was sessions on groundwater and sponsored by Georgia Ground Water Association. The EPD UST Program and Solid Waste gave three talks at this conference and Ron Wallace will be giving one of them on new and upcoming initiatives by our program. AIPG will be represented with three members giving presentations.

Ron Wallace, CPG-08153,
AIPG Georgia Section President

Hawaii Section

The AIPG Hawaii Hawaii Section held a meeting on April 6th with guest speaker Stephen J. Martel, Professor in Geology and Geophysics, UH-Manoa; "Curvature of the Earth and the Formation of Sheeting Joints".

Abstract: The Earth's internal stresses interact with the topographic surface to affect many phenomena. Sheeting joints ("exfoliation joints"), are widespread manifestations of this interaction. These opening-mode fractures form subparallel to the Earth's surface, bounding roughly concentric slabs of rock that resemble the layers of an onion. They occur worldwide in all major bedrock types, attain in-plane dimensions of hundreds of meters, exert a strong influence on groundwater flow, and help produce spectacular scenery, as in Yosemite National Park. The mechanism that causes them has been enigmatic. They are widely regarded as forming in response to "removal of overburden", but large fractures do not open in rocks merely by relieving a vertical compressive stress. High fluid pressures, thermal effects, rock heterogeneity, and weathering also are rejected as primary causes of these fractures. Tensile stresses normal to the surface appear to be required for large exfoliation fractures to open. Intriguingly, high surface-parallel compressive stresses are widely documented where exfoliation joints occur. The equations of equilibrium reveal that the rate at which the normal stress perpendicular to the topographic surface changes with depth (i.e., the "tensile stress partial derivative") depends on the two principal curvatures at a point on the surface (k2 and k3) and the associated surface-parallel compressive stresses (P22 and P33), neither of which need be principal stresses. At a traction-free surface, as the surface of the Earth can be idealized, this derivative equals P22 k2 + P33 k3 - rg cosb, where r is the material density, g is gravitational acceleration, and b is the slope. This general solution is independent of material rheology, does not require the solution of a boundary value problem, and applies to bodies of arbitrary shape. The tensile stress normal to the surface is zero at a traction-free surface, so where the tensile stress derivative is positive, the tensile stress normal to the surface must become positive in the subsurface. This condition can be met if the compressive stresses are sufficiently high (negative) and the surface is convex (k<0) in at least one direction. This solution accounts for the key characteristics of sheeting joints and has broad implications for a host of phenomena relevant to geologists and engineers.

Michigan Section

INQUIRY ON MICHIGAN LICENSURE OF GEOLOGIST

Please make any replies to this inquiry via e-mail to Walter Bolt at WBolt@manniksmithgroup.com.As you may know, over the past two years the Michigan Section of the AIPG has been leading efforts to pass House Bills 4440-4442, which would provide for the licensure of professional geologists in the State of Michigan. This effort has been a significant undertaking requiring a great deal of time and energy, which we believe will ultimately benefit our profession as a whole, us individually, as well as public we serve. Throughout this process we have communicated with (and solicited feedback from) other professional groups who may be stakeholders in this effort such as Michigan Department of Environmental Quality, Michigan Environmental Council, Michigan Groundwater Association, Michigan Association of Environmental Professionals, Michigan Aggregate Association, and Michigan Oil & Gas Association. In addition, we successfully met with the Michigan Society of Professional Engineers (MSPE) to resolve concerns that they had to the initial bill language and have garnered their support for our effort. In addition to support from MSPE we have received letters of Support from organizations such as:

1. American Institute of Professional Geologists;
2. Michigan Basin Geology Society;
3. Michigan Waste Industries Association;
4. Michigan Association of Planners; and
5. Michigan Water Environment Association.

If passed, we believe this legislation will enhance the credibility of professional geologists, protect the public's health, safety, welfare and the environment, and demonstrate a higher level of educational attainment and technical competency. We believe that the areas of practice that geologists operate in is of fundamental importance to public safety, not only to promote the wise and safe extraction of minerals, water, and energy resources, but also to protect the public from natural disasters, environmental contamination, and to provide information to other licensed professionals which is essential for safe and responsible land use. The bills, and information regarding these bills -- including current status, Frequently Asked Questions, a Fact Sheet, and Letters of Support -- are currently on the Section home page at http://mi.aipg.org. However, discussion on the merits of the proposed bills should continue. All AIPG members and geologists working in Michigan may not be in agreement with proposed licensure legislation or may not be fully informed regarding these bills, which are now before the Regulatory Reform Committee in the Michigan State House of Representatives. The Michigan Section Executive Committee

is interested in your comments regarding licensure of geologists. The Executive Committee believe that professional discussion regarding licensure is an on-going process and if appropriately applied your input will result in even better legislation. The Executive Committee seeks your input to which we will present information in the next newsletters that address questions or concerns that are raised. Please reply including: 1) Are you a Michigan Resident? 2) Do you support the licensure of geologists? Why or why not? 3) Do you have any specific comments or issues to improve the legislation? 4) Are you able to assist in this legislative effort? 5) Are you a member of another geology-related technical or professional organization? If you are, does that organization support licensure? 6) What specialties or areas of geology do you practice? 7) Are you licensed as a geologist in any other states? If so, what states? 8) Do you work exclusively in Michigan? If no, what other states do you work? Do those states require licensure? 9) How many years of experience do you have practicing geology?

South Dakota Section

At the March 15, 2006 annual business meeting and luncheon of the South Dakota Section, Dr. James Fox (Professor of Geology and Geological Engineering at the SD School of Mines and Technology) was selected as the winner of the 2006 J.P. Gries Geologist of the Year Award. This award is presented annually by the South Dakota Section to a geologist who has done exemplary work in South Dakota. A photo of the award presentation is online at http://www.sdsmt.edu/space/sdaipgMar2006AnnualMeeting1.htm

Dr. Fox's nominators, Christopher Pellowski, SA and Dr. Kelli McCormick, wrote the following about Dr. Fox's recent work …

> "The work and legacy of Dr. J. Paul Gries continues today through the efforts of Dr. James Fox at the South Dakota School of Mines and Technology. During the fall of 2004, Dr. Fox created the J. P. Gries Geologic Resources and Mapping Laboratory in Room 334 of the Mineral Industries building on the SDSM&T campus to act as a repository for the data collected and cataloged by Dr. Gries. Dr. Fox has spent many years constructing stratigraphic cross-sections across basins of interest to the Oil and Gas industry using electric logs. In 1993, Dr. Fox published twenty-two cross-sections of the subsurface geology in the Powder River Basin. Currently, Dr. Fox is collaborating with the South Dakota Geological Survey on constructing nine west-east cross-sections across South Dakota. Dr. Fox has relied heavily on data in the J. P. Gries collection for lithological and geophysical logs of oil and gas and water wells and preliminary extent lines of various Paleozoic and Mesozoic formations in South Dakota. With these data and additional records of wells and test holes drilled east of the Missouri River from databases compiled by the Oil and Gas Section of the State Minerals and Mining Program and the South Dakota Geological Survey, Dr. Fox is correlating Paleozoic and Mesozoic formations and facies changes in the subsurface across South Dakota. This published work will be central to gaining a better understanding of the subsurface geology of South Dakota as well as adding to the Governor's 2010 Oil and Gas Initiative. With these outstanding contributions, we believe it is only fitting that we recognize Dr. Fox as the 2006 J. Paul Gries 'Geologist of the Year'."

Thank you!

Tom Durkin. CPG-09138
President, SD Section AIPG

Answers to Questions on Page 15

1. The answer is "c" or k = E/3(1-2P). The proof follows:

   By definition of the Lamé constants, we know that:

   $L = k - (2/3)(n) = PE/(1+P)(1-2P)$

   $U = n = E/2(1+P)$

   Then:

   $k - (2/3)[E/2(1+P)] = PE/(1+P)(1-2P)$
   $k - E/3(1+P) = PE/(1+P)(1-2P)$
   $k(1+P)/P - E/3P = E/1-2P$
   $k(1+P)/P = E/1-2P + E/3P$
   $k(1+P) = EP/1-2P + E/3$
   $k(1+P) = [3EP + E(1-2P)]/3(1-2P)$
   $k(1+P) = [E(3P + 1 - 2P)]/3(1-2P)$
   $k(1+P) = E(1+P)/3(1-2P)$
   $k = E/3(1-2P)$

2. The answer is "c" or Fe_3O_4.

   Hematite, Fe_2O_3 , is typically silver (may be tiny, glittery flakes) to gray to red in color with a red to red-brown streak, a hardness of 5-6.5 and specific gravity of 4.9-5.3. This iron ore is useful for its red pigment. It is also utilized in the construction of steel tools, nails, bolts, vehicles and in developing steel used in engineering structures.

   Goethite, FeO(OH), is typically dark brown to black in color (with radiating layers), has a yellow-brown streak, a hardness of 5.5-6 and specific gravity of 4.3. This hydrous iron oxide is useful in the manufacturing of steel tools, nails, bolts, vehicles, steel for engineering structures, brass and bronze.

   Magnetite, Fe_3O_4, is typically dark gray to black in color, with a dark gray streak, a hardness of 6 and specific gravity of 5.2. This mineral is magnetic and is generally used in the manufacturing of steel for engineering structures, brass, bronze, tools vehicles, bolts and nails.

3. The answer is "c" or 101.5 feet per mile.

   By definition, the gradient of a stream is the vertical drop in a given horizontal distance. Since 1 mile is equivalent to 1.6 kilometer, the 3.2 kilometers between points "A" and "B" are equivalent to 2.0 miles. The elevation drops from 612 feet to 409 between points "A" and "B", thus 203 feet. The gradient of the stream expressed in feet per mile is 203/2 = 101.5 feet per mile.

4. The answer is "a" or 3 parts.

   SEG-Y data format (Society of Exploration Geophysicists Y format) dates back to the early 1980s and is still widely used today. It consists of three parts. The first part is a 3200 byte card image header with 40 lines of text and 80 characters per line of text data, describing the tape. The second part is a 400 byte header containing information about the contents of the tape. The third part consists of the actual seismic traces, with each trace having a 240 byte trace header.

5. The answer is "b" or cephalopods and crinoids.

   Eratocrinus is a crinoid of Mississippian age, a cladid with a pearl shaped crown and arm structure. **Pronorites** is a Pennsylvanian cephalopod with an involute discoidal shell and complex goniatite sutures.

Tom Cavanaugh, CPG-10493, has joined O&G Environmental and will be assisting clients with his broad geological and project management experience. A Senior Geologist and Project Manager with over 30 years of management and field experience, Tom as a strong working knowledge of oil and gas and water resources industry practices. This broad background allows him to help clients effectively and efficiently plan and operate projects, on time and within budget.

Tom as expertise in environmental and subsurface investigations, natural resource exploration and exploitation, water rights, stratigraphy, mapping, and research. His experience includes all aspects of groundwater protection and supply from permitting, drilling, and logging, through completion design and construction, pumping tests, chemical sampling, and regulatory compliance. Other experience includes basin groundwater studies, geothermal wells, construction dewatering, geological hazards evaluations, well head protection plans, engineering geology, and resource valuation. Tom has a Bachelors degree in geological engineering and a Masters degree in geology. He is a Certified Professional Geologist.

Thomas Cusack, CPG-07843, has been named vice president and principal of Leggette, Brashears & Graham, Inc. (LBG).Tom is based in LBG's Shelton, Connecticut office. A certified professional geologist, he has over 25 yers of professional experience in ground-water supply development, aquifer protection, regional water supply management, environmental assissments, and environmental contamination investigations. Tom earned a B.S. degree in Geology from Syracuse University. he is a member of the Assocaition of Ground-Water Scientists and Engineers, and the American Water Works Association.

Rob Good, CPG-09454, has been named principal in charge of the new Farmington, Connecticut office of Leggette, Brashears & Graham, Inc. (LBG), a professional ground-water and environemntal engineering services firm. An LBG Vice President, Mr. Good has over 20 yeras of project management experience with with complex geologic and hydrogeologic investigations. He has been responsible for coneptual design, implementation and reporting of detailed field assessments for all types of ground-water supply and ground-water remediation projects. Rob is a Certified Professional Geologsit by the Amerian Institute of Professional Geologists (AIPG) and a Licensed Environmental Professional in Connecticut. He is active in several professional organizations, including the Association of Ground-Water Scientists and Engineers; American Institute of Mining, Metallurigical and Petroleum Engineers; Connecticut Business and Industry Association; and the Connecticut and Metroplitan Gold Course Superintendents Associations. Rob earned a B.A. degree in geology from Franklin and Marshall College.

Joseph Standen, MEM-0410, has been named a senior associate by Leggette, Brashears & Graham, Inc. (LBG). Joe is based in LBG's West Chester, Pennsylvania office. His almost 17 years of proefssional enxperience includes management of hydrogeologic investigations involving hydrocarbon, heavy metal and volatile organic compound contamination of ground-water; water-supply projects for municipalities and land developers; site assessments for property transfers; an dliaison between clients and state regulatory agencies. Joe is a Professional Geolosit in Pennsylvania and a Licensed New Jersey Subsurface Evaluator. He holds a B.S. degree in earth science from Wester Chester University and is a member of the Association of Ground-Water Scientists and Engineers (National Ground Water Association) and the Assocation of Engineering Geologists. He resides in Newtown Square, Pennsylvania.

The National Executive Committee met in Tucson in February for the spring meeting. The Committee used this opportunity to visit the AIPG Educational Exhibit at the 2006 Tucson Gem & Mineral Show and to extend thanks to all the AIPG members who volunteered to staff the exhibit.

ANNOUNCEMENT ANNOUNCEMENT ANNOUNCEMENT

It is with regret that we advise you of the resignation of Cathy O'Keefe. Cathy has decided to accept a position with a computer forensics company which will provide her a greater career opportunity to pursue her passion for working behind the scenes within the world of computer applications. Cathy has been with AIPG for nine years. Staff, Executive Committee, and all members who have worked with Cathy know what an asset she has been to this organization and will miss her competent, cheerful, enthusiastic, dependable service to AIPG. Her last day with AIPG was March 31, 2006. We extend our sincere and deepest appreciation to Cathy and best wishes for a very successful future. Thank you, Cathy, for your many years of dedicated service. You will be missed.

We are very pleased to announce that after 24 years in various capacities, as an AIPG employee since 1982, Wendy Davidson has been promoted to Assistant Director. This change is not in title only, for it denotes the critical responsibilities associated with efficient and dedicated organizational management with which Wendy has continued to support the Executive Director and Executive Committees. This support ranges from her demonstrated ability to resolve delicate member or sister society issues; negotiation of favorable service contracts with vendors; the unfailing production of the exceptional and increasingly excellent AIPG news journal *TPG*; providing information and encouragement to section officers and members; representing AIPG in various official capacities at sister society meetings and events; regularly representing AIPG externally in a most proficient and professional manner; and in general assuring that the Executive Director is able to carry out his responsibilities without any anxiety that the services and obligatory functions from AIPG headquarters, expected day-to-day, are provided efficiently and unfailingly.

It is a challenge to adequately describe the outstanding service Wendy has provided to successive AIPG Executive Committees, the Executive Director, and members during her tenure with AIPG. Those who have had the privilege of working with Wendy are fully cognizant of her unquestionable loyalty and dedication to AIPG, its mission, and its membership, as well as her overall competence. Please join us in congratulating her and in expressing your appreciation for her part in ensuring that AIPG is, and will continue to be, a recognized and respected part of the geologic community.

Larry Weber, President

Bill Siok, Ex. Director

Larry Cerrillo, Bill Siok, Wendy Davidson, Cathy O'Keefe, Cristie Valero, and Graham Closs. Photos were taken by David Abbott.

Cathy O'Keefe

Cathy Duran

Cristie Valero

Wendy Davidson

GEORGIA BROWNFIELDS:

CREATING JOBS FOR LOCAL MARKETS

Russell C. Griebel, MEM-0796

Prior to the passage of the Small Business Liability Relief and Brownfield Revitalization Act (a.k.a. the 'Brownfields' Act), developers would typically steer clear of environmentally impacted properties. The risk and uncertainty associated with such properties often out weighed the benefit of property ownership. People would prefer to buy the "clean" property down the way, rather than taking unneeded risk of a more desirable location. However, in densely populated areas, large "clean" properties may be difficult to find. In some areas, contaminated properties may be all that remain for the developer trying to take advantage of the now popular mixed-use developments and in town residential developments, not to mention the common commercial developer. The Brownfields Act has helped make ownership of environmentally impacted properties more feasible, which has also helped make productive use of unused and/or depreciated land.

What is a Brownfields site?

Per the Act, a Brownfields Site means "real property, the expansion, redevelopment, or reuse of which may be complicated by the presence or potential presence of a hazardous substance, pollutant, or contaminant." Based on information provided by the United States Environmental Protection Agency (EPA), anywhere from 500,000 to a million Brownfields Sites exist across our country.

Who regulates Brownfields sites?

EPA originally developed the Brownfields Initiative in 1995, looking for methods, procedures, or legal processes to encourage development of contaminated properties. Since its inception, various amendments have been made, ultimately providing greater protections to future owners of Brownfields properties. The most significant change was the passage of the Brownfields Act (Act) on January 11, 2002, which provided liability protection for prospective purchasers, contiguous property owners, and innocent landowners. This Act also authorized increased funding for state and local programs that assess and clean up Brownfields. For additional information on Federal Brownfields regulations visit http://www.epa.gov/brownfields/.

Since the passage of the Act, approximately 40 states have developed their own voluntary Brownfields Programs (BFP) to fit their area. Generally, these programs are more responsive, provide for broader protections, and are generally cleaning sites quicker and more effectively. However, all state Brownfields Programs vary. Variations include the application fees, application details, investigations needed to define the environmental conditions present at the Brownfields site, clean up requirements, as well as the actual Limitation of Liability (LoL) benefits.

On July 1, 1996 Georgia made effective the Hazardous Site Reuse and Redevelopment Act (HSRRA), which provided limitation of liability benefits mainly for Hazardous Site Inventory (HSI) facilities or state Superfund sites. The HSRRA was amended on numerous occasions, which has included amendments in July 2002 and recently in July 2005 with Senate Bill 277. The 2005 amendment provides protections for properties with "preexisting releases" including non-HSI properties and properties with petroleum releases. The protections for petroleum were made available for releases from Underground Storage Tank Management Program (USTMP) sites, which has helped make one of the most commonly contaminated facilities more marketable for redevelopment. Also along this line, Georgia is currently in the process of expanding the scope of the BFP by potentially providing liability protections for hazardous waste facilities, as defined in House Bill 979 (HB 979). If this Bill is passed, even more Brownfields opportunities await in Georgia. For additional information on Georgia Brownfields regulations visit http://www.gaepd.org/Documents/brownfields.html.

What are the Benefits of a Prospective Purchaser receiving a Georgia Brownfields Limitation of Liability?

As indicated above, state LoL benefits vary. The state of Georgia provides three primary benefits with their issuance of a LoL to a Prospective Purchaser (PP). The LoL provides protections from:

- Groundwater impacts;
- Third party liability; and
- Regulatory changes.

Although these benefits may seem minimal to some, anyone previously involved with environmentally impacted properties knows that groundwater remediation can be very expensive. Groundwater remediation projects rarely cost less than six figures, and often extend near and into the seven-figure range and take years to complete. Further, the third party liability protections could serve to be as substantial. Finally, the exception from regulatory changes removes substantial uncertainty for the remedial process—closing sites from future regulatory actions for the pre-existing releases.

An added benefit of a Georgia LoL through the BFP is the tax incentives, as outlined in House Bill 531 (HB 531). Generally, this Bill permits the PP to freeze the tax value of the property at the lesser of the acquisition cost or the fair market value at the time of the Brownfields Application and deduct the costs associated with receiving the LoL (excluding legal fees, and other items) to the tax bill at the current fair market value of the property for an approximate period of 10 years or until the expended costs are reached. This Bill can help recoupe the costs for the remedial actions required to receive the LoL.

What does this mean for the Consulting Geologist?

The process for a PP receiving a LoL on a Brownfields site involves providing information on environmental conditions at a site. This will often times require a Phase I Environmental Assessment and Phase II Environmental Assessment, at a minimum. Again, state requirements vary and these variations can be significant. Consultants should be aware of the requirements within the states where their services are being provided. Georgia requirements are more involved than some other states, requiring detailed environmental assessments. Some states may only require a Phase I Environmental Assessment and limited analytical testing data. Also within Georgia, the process varies for regulated and voluntary sites (i.e. HSI or state Superfund sites vs. non-HSI facilities).

In Georgia, detailed environmental assessments are required to fully characterize the conditions present on a Georgia Brownfields site. First the PP and the property itself must qualify for LoL protections. Historic information must be presented. A full definition of the soil and groundwater conditions at the Brownfields site must be made. If soil impacts are present above the appropriate Risk Reduction Standards (RRS), either residential or commercial, soil remedial actions are needed. However, since the LoL provides protections for groundwater impacts, the PP does not need to remediate groundwater just characterize the conditions for protection.

The Georgia Brownfields process is a multi-step process. The number of steps required is generally dependant on the result of each subsequent step. Typically a prospective purchaser corrective action plan (PPCAP) is initially submitted to the Environmental Protection Division (EPD) along with a non-refundable application review fee of $3,000.00—as the Brownfields Application (Application). The PPCAP clarifies the conditions that qualify the property and the purchaser for the program and its protections. It also provides specific plans to define the soil and groundwater conditions across the entire property, groundwater flow, remediation for soils with concentrations greater than the appropriate RRSs, possible gas venting, and management of impacted materials during site construction. The EPD must respond to the PPCAP with a conditional LoL letter, contingent on completing the items in the PPCAP, before the property transaction is completed by the PP (prior to closing).

The PPCAP is then implemented and the conditions resulting from the actions outlined in the PPCAP are documented in a prospective purchaser compliance status report (PPCSR). The PPCSR is a very detailed report that defines the final conditions at the Brownfields property, documents the soil remedial actions conducted, restates the property and purchasers' qualifications, and certifies that the soils at the Project Site meet the appropriate RRSs. With the EPDs review and concurrence that the PPCSR is complete, the final LoL will be issued by the state and the PP receives the LoL benefits outlined above. In the event that remediation is not required at a property, or full remediation and site characterization has already been completed, a PPCAP would not be needed and a PPCSR could be submitted with the fee as the Application.

Consultants need to be fully aware of the Brownfields requirements and the limitation of that Program. Final LoLs are only as good as those conditions investigated. If the consultant does not test for a certain compound, and that compound is later detected, the LoL does not provide protections for those conditions and the PP could be held liable. This also provides liability for consultants themselves, as sound recommendations must be made for the constituents of concern (COC) at a Brownfields site. Ultimately, to assure proper LoL protection, it is the responsibility of the PP to hire consultants and environmental legal council adequate for the service and knowledgeable of the processes.

Example Brownfields Project

Environmental investigations were performed on Georgia State University's new Piedmont Avenue Dormitory project site to determine potential impacts from historical operations including a filling station, dry cleaning facility, and automotive service facility. Contamination was detected at the project site, which was regulated by the Hazardous Site Response Program (HSRP). Proper release notification was made to the Environmental Protection Division (EPD), HSRP. In turn, the EPD had the initial intention to list the site on the Hazardous Site Inventory (HSI) due to potential chemical exposure following site development with the dormitory complex. However, due to a response

to requests for technical information by EPD personnel and pre-notification remedial plans, the EPD decided to forward the site to the Brownfield Program. This permitted the client to conduct voluntary corrective action and receive a limitation of liability for the contamination present, through the Georgia EPD, Brownfields Program. This saved the client significant time and money, with the added benefit of the limitation of liability itself. The Board of Regents and the Georgia State Foundation also received the benefit of the Brownfields limitation of liability.

References

http://www.epa.gov/brownfields/

http://www.gaepd.org/Documents/brownfields.html

Georgia Code Article 1. General Provisions Regarding Ad Velorem Taxation of Property, so as to Provide for Preferential Assessment of Environmentally Contaminated Property, House Bill 531.

Georgia Hazardous Waste Management Act, Article 9. Georgia Hazardous Site Reuse and Redevelopment Act, Senate Bill 277.

Russell C. Griebel, P.G., MEM-0796, United Consulting, 625 Holcomb Bridge Road, Norcross, Georgia 30071, (800) 266-0990, rgriebel@unitedconsulting.com

ASBOG® Examinations: A Retrospective Analysis of Passing Rates for First-time and Repeat Test-takers

Prepared by Jack L. Warner, Ph.D., Steven P. Warner, Ph.D., TEST, Inc., Andrews L. Tolman, CG, 2005 ASBOG President

The National Association of State Boards of Geology (ASBOG®) administered the initial forms of the Fundamentals of Geology (FG) and Practice of Geology (PG) Exams in October 1992. Since then, more than 11,000 examinations have been completed (FG Total Exams = 6,498; PG Total Exams = 5,239). ASBOG® Examinations are utilized by 28 states and Puerto Rico in licensing the professional practice of geology. The passing rates for both exams have been remarkably stable across time (FG Average Passing Rate = 58%; PG Average Passing Rate = 70%). These passing rates include all candidates sitting for the exams and make no distinction as to how many times the candidates have taken the exams.

The purpose of this study was to evaluate passing rates for candidates taking the exams for the first time and compare them with rates of repeat test-takers. The retrospective study spans 25 administrations from October 1992 through October 2004. We wanted to assure that the test is both fair to the candidate and provides the public with protection from incompetent practice. We were also curious whether the examination could be 'learned' and therefore passed more easily on subsequent attempts.

Table 1 displays the passing rates by the number of attempts on the FG Exam. An average of 65% of the first-time test-takers passed the exam. This passing rate is seven percentage points higher than the overall average of 58%. Performance levels for repeat test-takers show a steady decline with more attempts on the exam. The passing rate for candidates taking the exam for the second time is 26 percentage points below first-time test-takers (i.e., 65% vs. 39%). The passing percents are graphically illustrated in Figure 1.

A similar pattern is also observed on the PG Exam where candidate performance diminishes the more times they attempt the examination (see Table 2). An average of 76% of the first-time test-takers passed the exam which is six points higher than the overall average of 70%. The passing rate for candidates taking the exam for the second time is 26 percentage points below first-time test-

Table 1 - Fundamentals of Geology

Passing Rates by Number of Attempts
(October 1992 through October 2004)

No. of Attempts	No. Passing	No. Failing	Total	Passing Percent
1st	3176	1703	4879	65%
2nd	385	614	999	39%
3rd	133	220	353	38%
4th	47	90	137	34%
5th or more	36	94	130	28%
TOTALS	3777	2721	6498	58%

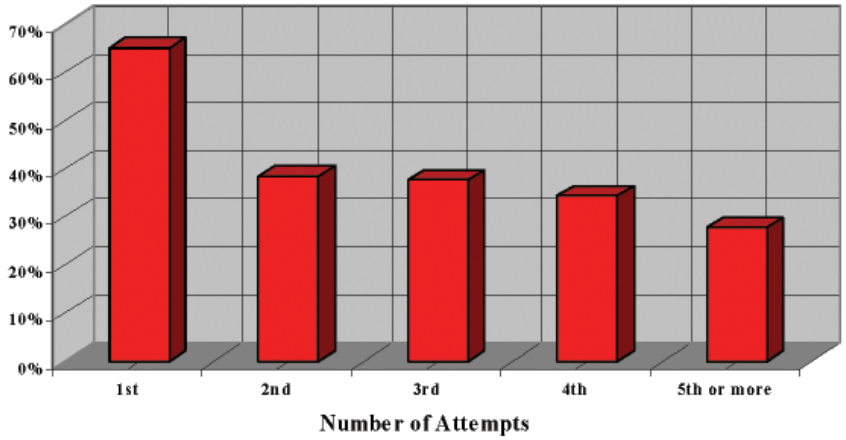

Figure 1 - ASBOG® FG Examination Passing Rates by Number of Attempts
(October 1992 through October 2004)

Table 2 - Practice of Geology

Passing Rates by Number of Attempts
(October 1992 through October 2004)

No. of Attempts	No. Passing	No. Failing	Total	Passing Percent
1st	3169	1023	4192	76%
2nd	335	336	671	50%
3rd	110	121	231	48%
4th	34	50	84	40%
5th or more	23	38	61	38%
TOTALS	3671	1568	5239	70%

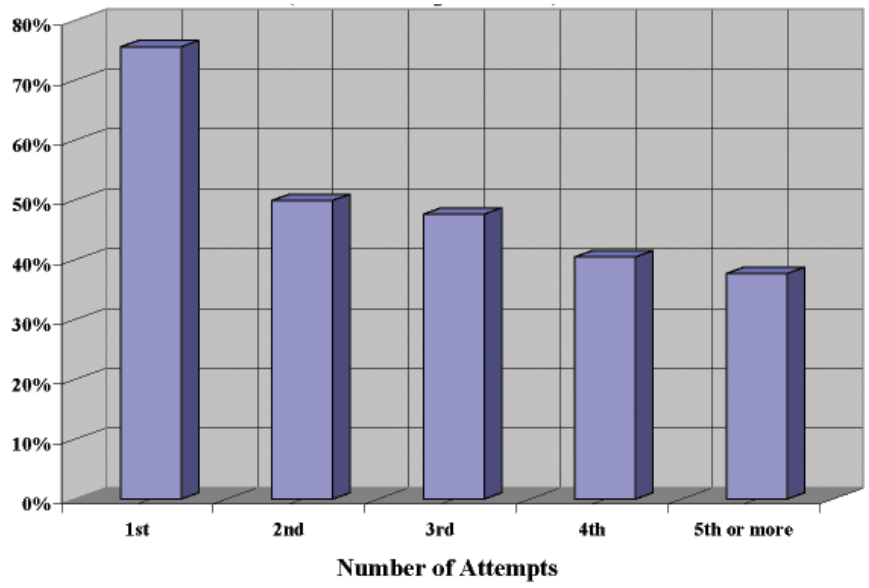

Figure 2 - ASBOG® PG Examination Passing Rates by Number of Attempts (October 1992 through October 2004)

takers (i.e., 76% vs. 50%). The passing percents for the PG Exam are graphically represented in Figure 2.

There is a remarkable similarity between the FG and PG Exams with respect to how well candidates perform on repeated attempts on the exams. First-time test-takers are more likely to pass both exams when compared to candidates who sit for the exams on repeated occasions. Despite this fact, candidates who fail still have a reasonable chance of passing, particularly if they focus their study in areas of weakness that are outlined in the ASBOG® final score reports. With repeated attempts, the overall chance of passing the FG is about 77%, and more than 88% for the PG.

These statistics strongly indicate that the test is a consistent instrument over time, and that it is an effective tool in evaluating the competence of candidates for registration. It also gives hope to candidates for registration who are initially unsuccessful.

Amazon Rainforest Greens Up in the Dry Season

WASHINGTON - The Amazon rainforest puts on its biggest growth spurt during the dry season, according to new research. The finding surprised the researchers.

"Most of the vegetation around the world follows a general pattern in which plants get green and lush during the rainy season, and then during the dry season, leaves fall because there's not enough water in the soil to support plant growth," said lead researcher Alfredo R. Huete of The University of Arizona in Tucson.

"What we found for a large section of the Amazon is the opposite.

As soon as the rains stop and you start to enter a dry period, the Amazon becomes alive. New leaves spring out, there's a flush of green growth and the greening continues as the dry season progresses." The paper by Huete and eight colleagues in the United States and Brazil is scheduled for publication on 22 March in Geophysical Research Letters.

This finding holds true only for the undisturbed portion of the rainforest. Areas where the primary forest has been converted to other uses or disturbed "brown down" in the dry season, said Huete, a professor of soil, water and environmental science.

Huete suggests the deep roots of trees in the undisturbed forest can reach water even in the dry season, allowing the trees to flourish during the sunnier, drier part of the year. In contrast, plants in areas that have been logged or converted to other uses cannot reach deep water in the dry season and therefore either go dormant or die.

The researchers say that figuring out the metabolism of the Amazon, the largest old-growth rainforest on the planet, is crucial for understanding how rainforests and other tropical environments function and how deforestation affects biodiversity and sustainable land use in the tropics. It will also help scientists better understand the global carbon cycle, which includes the natural sequestration and release of carbon dioxide, a major greenhouse gas.

The finding that converted forests grow differently from undisturbed forests has implications for understanding the effects of fires in the tropics, including the fires that sometimes rage in tropical areas during El Nino years, which bring drought to many tropical areas, including the Amazon.

The research team analyzed five years of satellite images from the MODIS (Moderate Resolution Imaging Spectroradiometer) instrument mounted on NASA's Terra satellite and by cross-checking with information from sites on the ground. To determine when the Amazon rainforest is growing, Huete's lab used a new measure, called Enhanced Vegetation Index (EVI), for detecting greenness in MODIS images of very highly vegetated rainforests. Growing plants generate more chlorophyll and therefore look greener.

"We can look at this increase in greenness as a measure of Amazon health, because in the disturbed areas we don't see the greenness increase during the dry season," Huete said. "A lot of people are interested in the rainforest because of the humongous amount of carbon it stores. A very slight change in the forest's activity will make a tremendous change in the global carbon cycle."

"With the satellite, we can say the whole Amazon basin is doing something," Huete said. The team's next step, Huete said, is to see if other tropical rainforests behave the same way and how the rainforests behave in El Nino years. He added, "We also want to look harder at the transition zones at the edge of the rainforest to see whether different kinds of disturbance cause different growth patterns."

The research was funded by NASA and is part of the Brazilian-led Large Scale Biosphere-Atmosphere Experiment in Amazônia (LBA).

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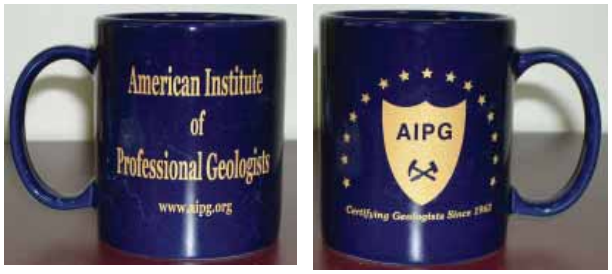

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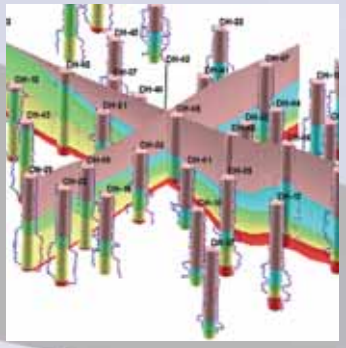

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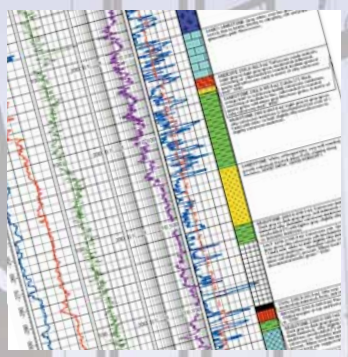

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