WANTED - TPG ARTICLES

Instructions to Authors

TPG accepts articles of modest length for publication. Submittals should be no more than approximately 1600 words, or six typed pages, double spaced. Longer articles may be divided into parts (e.g., part 1 and part 2), but this is not encouraged. Articles may be technical or professional in nature. General topics are listed below. Articles containing news of importance to professional geologists will also be considered. Except for news articles, or articles containing dated materials, submittals should be sent to AIPG headquarters twelve weeks in advance of expected publication. Some technical topic issues are planned up to one year before printing, therefore early submittals will be preferred.

Manuscripts should have the following sections:

- Title
- Author(s) with CPG number and address
- Text
- Tables if included
- Figures with captions if included
- Appendix(es) if included
- Acknowledgments
- References Cited

One original and two copies of each manuscript should be submitted. Whenever possible, text should also be submitted on diskette. Headquarters uses WordPerfect 7 for Windows ‘95, which is preferred, but Word, ASCII, RTF, or translatable files are acceptable. The program or format of the text should be clearly marked on the diskette. Articles can also be transmitted by e-mail.

Graphics should be clear, camera-ready, line drawings whenever possible. Photographs (color or black and white) are also encouraged. Whenever possible, drawings may be submitted on diskette in .pcx, .bmp, .tiff, .gif, or other standard formats.

TPG wants color slides and photographs. Slides and photographs alone may be submitted for the cover. They should have a geologic theme and an informational caption.

General Topics:

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Other suggestions: Forensic Geology, History of Practice in a given field, Book Reviews, Geology and the Military, and Unusual Applications of Geology.

Authors are encouraged to communicate with Headquarters via mail, fax, or Internet. Send your article and/or photographs, or communicate questions to:

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Deliverance — For Now!

The Presidency of AIPG is not all fun and games. Difficult decisions must be made from time to time, decisions that may significantly affect the survival of AIPG as an effective advocacy organization for all US geologists. Then-President Steve Testa, Treasurer Bob Colpitts, and I were forced to make such a decision in January of last year. Bill Knight had repeatedly warned several preceding Executive Committees that revenues had consistently failed to cover expenses in 4 out of the 8 years preceding 1998. Although the dues renewal rate for 1998 was above average—over 94.8% eventually paid their 1998 dues—we would end up in the red again for the year. His warnings to previous Executive Committees had not been ignored, but the attempted “fixes”—increased non-dues revenues from publications sales, broadening and expansion of the membership base, advertising drives, and sponsorship campaigns—had not been very effective in raising revenues. Headquarters expenditures had been cut, with the support staff reduced to three very hard–working women plus the Executive Director, but the net effect was limited. Dues had not been very effective in raising revenues. Headquarters expenditures had been cut, with the support staff reduced to three very hard–working women plus the Executive Director, but the net effect was limited. Dues had been held steady for nine years. An increase in CPG dues for 1999 appeared to be the only remaining available way to avoid possible bankruptcy in 2000. But what might be the cost in lost members? Was this a “cure that kills”?

Ultimately, it had come to “fight or die”

The numbers supporting Knight’s bleak assessment were so ominous, in their year-by-year advance toward insolvency, that the decision was made quickly and unanimously. We would recommend to the Executive Committee meeting the following day that a national dues increase for CPGs for 1999 was necessary. The amount of the increase could not be determined at the time but would be a decision for the third 1998 Executive Committee meeting in July. In the interim, a clear, strong, convincing case had to be made to the CPG membership that an increase was absolutely necessary for the Institute’s survival. The previous, less-than-transparent financial reporting to the membership would no longer do. Instead, full disclosure of our financial condition for the ten previous years was necessary, a practice that would continue in future TPGs. Did we enjoy making this decision? No way. We were very unhappy about it and especially concerned that it would be announced and become effective during a period when many geologists had lost or were fearing the loss of their livelihoods. All we had was the grim satisfaction, if that is the correct term, of having the collective courage to accept and try to deal with the inevitable. Ultimately, it had come to “fight or die.” The full Executive Committee was even more disturbed than we, because this came without warning for most of them. Some wished to continue to temporize or settle for a temporary, one-year increase, but a majority in the end agreed to a permanent increase plus a new policy of annual dues adjustments to reflect AIPG’s current financial condition. One former member is still possibly convinced that the permanent increase was an error, but most, after reviewing the numbers, reluctantly agreed to a conceptual increase by a then-unknown amount. Bob, Steve and I hastily prepared an article describing AIPG’s rapidly deteriorating financial situation. Bill Knight and the staff provided substantial, well-organized background data and supporting statistical comparisons of the Institute with our technical and engineering peer organizations. It was published in the March 1998 TPG. The article attracted a larger-than-usual response from the membership. While some were very critical, even abusive, the majority were supportive. At the July 1998 Executive Committee meeting, an increase of $25 per CPG per year was proposed and adopted, with one negative vote. This amount was not adequate to fully correct our problems, but the Executive Committee feared to go higher even though a larger increase could be justified. The possibility of a serious loss of members was, and remained, an ongoing concern of the Executive Committees for 1998 and 1999, the Executive Director, and the Headquarters staff until about mid-February of this year. We still were apprehensive at the 23 January meeting, but pleased to know that the dues renewal rate was lagging that of 1998 on the same dates by only about 2%.

As of this writing (17 March), 92.45% of the national dues invoiced last October for 1999 had been paid. In comparison, as of 13 March 1998, 94.0% of the 1998 dues invoiced had been paid, and 94.8% as of 30 April. So the mid-March dues renewal rate for 1999 is only 1.55% lower than last year. Seventy-seven members have been reinstated since 17 February 1999, when those who hadn’t paid their 1999 dues on time were suspended. In 1998, a total of 135 members were reinstated between 17 Feb. ‘98 and 30 April ‘98, the last day for easy reinstatement each year. To help put these renewal percentages in proper perspec-
tive, Bill Knight reports that our average annual loss of members for all reasons is about 6%. This is usually offset by a larger number of new members, but not always in recent years as applications have declined. While final valid comparisons cannot be made until the end of April, it appears that only about a net 2% of our membership will have been lost because of the increase in national dues. In comparison, in 1989 when dues were last increased, the net loss of members was 4.55%.

THANK YOU for your understanding of the problem and your acceptance of the necessity for this increase. AND, THANK YOU for staying with AIPG. The Executive Committee hears every year “what am I getting from AIPG for my money?” While AIPG is not perfect, and is continually seeking ways to better serve the membership, we are gratified that the vast majority of you seem to believe that you are receiving something of value as AIPG members. But, keep after us—we will try to do better.

...THANK YOU for staying with AIPG

After all that, you may wonder why this long paragraph is coming. Unfortunately, we are still not out of the woods financially. As of 17 March 1999, $524,290. in dues payments had been received, compared to $435,747 as of 13 March 1998, for an increase of $88,483. And dues payments are still coming in. Sounds good, right? Actually, it is not as good as it sounds. During the past 4 years, 1995-98, our Unrestricted Assets (i.e. our “savings”) were reduced by $120,979, including $37,829 during 1998. This combined reduction is about $20,000 greater than the combined increase for the previous five years, 1989-94. Only 1993, when the “Citizen’s Guide” came out, was a clear winner. From a high of $173,171 at the end of 1994, Unrestricted Assets had fallen to only $52,192 at the end of 1998. Therefore, a potential increase in total 1999 dues revenues over 1998 of about $90,000 by 30 April is good news, but in perspective is only the first of several necessary good years in the near future. Rationally, our Unrestricted Assets should equal or exceed $250,000, a reserve equal to only about one-half of AIPG’s anticipated annual expenditures in the near future.

Continuing economies at Headquarters and in Executive Committee expenditures must be maintained. But, in the end, AIPG’s heavy dependence on dues income, the highest among our scientific and engineering peers, MUST be reduced. How can this be done? Mainly, I believe, by:

• an increased membership. Remember, a membership drive is coming this year.
• new publications aimed at broader markets. Fortunately, several recent or forthcoming releases show real promise.
• new sources of non-dues revenues such as foundation grant–supported public issues projects, sponsorships, geo-hazards courses, and others.

Where do new members and new publications come from? Where do additional ideas for new sources of non-dues revenues come from? FROM YOU, our membership. Please, help AIPG again this year. Recruit a Member! Buy a new publication! Let us hear your ideas! We are back but still have a long way to go together.

Request for an AIPG Application and/or Additional Information

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Many geologists working for oil companies face layoffs during the current merger climate in the petroleum oil industry, and some will work as consultants. Because several petroleum geologists asked for my guidance about becoming a consultant, this paper summarizes a few ideas and comments I shared with them.

Nearly three years ago, I opened a petroleum geology consulting firm after a career as a university research professor and as executive director of a marine consortium. Immediately, I called a network of friends, former students, and colleagues and attended the San Diego (1996) annual meeting of the American Association of Petroleum Geologists, both to get advice and to market my services.

Those conversations provided key insights, and most turned out to be correct, including:

**Personal Finances**

Because consulting jobs come irregularly, I was advised to have funds on-hand providing me with six-month’s living expenses. Everyone needs to find their own solution with the advice of an accountant or financial planner. One person advised me not expect a financial institution to lend money to buy a new house or new car until I showed three years of positive earnings on tax returns as a consultant.

**Business Finances**

New consultants must finance their business expenses themselves before income is generated during the first year. Dealing with this issue requires guidance from an accountant.

A line of credit from banks likely becomes available only after maintaining a business account there for one year. It is an option, particularly if you need mobilization money for a new contract. However, be careful and guarded in dealing with banks when applying for lines of credit.

While at the marine consortium, I met the president of the largest glass company in the world. He was asked in my presence: “What is the secret to your business success?” He replied: “Never spend more than you make” and said no more.

Implementing that advice is the biggest challenge both new and seasoned consultants face. The biggest challenge to new consultants is financial over-extension. Initial issues include: (1) do I work from my home or rent an office? (2) do I buy or lease new computer equipment? (3) should the company obtain credit cards or charge accounts with its suppliers? The critical decision one makes when answering these simple, basic questions is how much expense can one handle, and how quickly will income pay for it.

**Marketing and Networking**

As a former university professor, I know that university science programs fail to teach their students marketing and networking. During my career I trained nearly 200 former classroom students and 20 MS and PhD students who work in the oil industry and whom I contacted. One contracted me to recruit new staff for his company. All offered encouragement and advice. New consultants should contact everyone they remember from high school, college, graduate school, and their career.

Networking and marketing requires attendance at both the annual meetings of AAPG and the local AAPG section, as well as joining your local geological society and attending its meetings. I attend meetings of the Houston Geological Society regularly, and many people I met for the first time referred me to others, or retained me. Return the favor if a consultant provides a lead that is contracted, or at least take them to lunch if the favor cannot be returned quickly. Whenever meeting people, always follow up with a letter and resume, even if it doesn’t generate an immediate opportunity. One consultant warned me sometimes a response comes two years later!

Explore alliances. Try to team up with other consultants whose expertise complements yours so as to bid jointly, or be available to do so. When cash flow permits, share rental of convention exhibit space with other consultants to increase visibility (one consultant told me he earned a contract through exhibiting that generated income 160 times the cost of exhibit space).
New consultants should prepare a brochure or one-page fact sheet listing the firm’s mission and capabilities, recent clients (with general accomplishments), and a brief biography. Distribute them with business cards at every opportunity.

A publication record and presentations at meetings also are marketing tools. Coming from a research university background, I did both regularly. I discovered when seeking clients, I often met people who heard a colloquium I gave to their graduate program years ago, or remembered a paper I had written or presented. Publication and presenting papers constitute a track record that serves as a marketing tool to get appointments and, ultimately, consulting work.

My recommendation to geologists at “big oil” is to publish the unclassified part of their work, take the extra time to get it done, make presentations, and teach short courses at local and national meetings. In my experience, networking, publishing, presenting talks, and flexibility is the key to marketing.

Legals and Corporations

Each consultant faces a decision about incorporation or a sole proprietorship. There is no right or wrong answer. I incorporated because I brokered financial deals and needed liability protection. New consultants should discuss this with an attorney and then decide.

Registration and Licenses

Surprisingly, this issue never arose. My Certification by AIPG and membership in AAPG is all that seems to be required so far, particularly for international clients. (Texas does not require registration.)

Variety

As a consultant, expect variety in your work. So far, I developed play concepts, targeted drilling localities, completed facies and sequence stratigraphic studies for enhanced oil recovery projects, brokered financing of drilling ventures, recruited staff for a major oil company, and advised a company on new technology. When being offered an opportunity, first find out what your potential client needs, ask what they want done, review your own skills to be eligible, refer them elsewhere if your skills don’t match their needs, establish time schedules and deadlines, and be honest about what you can and cannot do. Be ethical in all dealings.

Location

Location is important. For a petroleum consultant, Houston, London, or Singapore are prime centers. I moved to Houston in 1998, and my business improved dramatically.

Avoid the “hype” about moving to an idyllic location and remain connected through the Internet to conduct a consulting business. In my experience, being located in the center of the American oil industry pays dividends. If planning a move away from such a center, be objective and careful.

These are some of the issues a new consultant faces. In my experience, the keys to success as a consultant include networking, marketing, ethical and professional conduct, location, and never spending more than one earns.

Acknowledgments


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NEW AIPG WEBSITE UP AND RUNNING

Check out AIPG's new web site at <http://www.aipg.org>. Members will need to call or e-mail Headquarters to get their ID Number and Password to access the Members only portion of the site. Login instructions are on page 17 of this issue.

We look forward to your comments and suggestions on the new site.

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A Graben in the Eagle Ford Shale, Lewisville, Texas

Paul F. Hudak

Cretaceous geologic formations exposed in Denton County, Texas, are often described as structurally simple, consisting of homoclinal strata dipping gently to the southeast. Geologic maps show no evidence of folding or faulting in Denton County (McGowen et al., 1991). The purpose of this article is to describe a graben bounded by normal faults in an outcrop of the Eagle Ford formation within Denton County (Figures 1 and 2).

Faults have been identified south and southeast of the study area. Shuler (1918) illustrated normal faults, some bounding horst and graben structures, in the Austin formation of Dallas County. A plot of 33 fault planes revealed a random strike distribution. Winton and Adkins (1919) reported small-scale faulting in the Woodbine formation of Tarrant County. Norton (1965) described small-scale faults in brittle beds of the Eagle Ford formation in Arlington, Texas. They were attributed to compaction of plastic beds over the uneven surface of a concretionary sandstone. Norton (1965) also mentioned a fault in the Eagle Ford formation near Coppell, Texas, and several in the Austin formation of Dallas County, some showing evidence of both vertical and horizontal movement.

Reaser (1961) documented several larger, northeast-trending normal faults and grabens in Cretaceous formations of southeast Dallas and Ellis County. Those structures apparently mark the northeast limit of the Balcones fault system, a zone of en echelon normal faults cutting Cretaceous rocks draped over the Ouachita fold and thrust belt (Figure 3).

Figure 1. Geologic map of study area (Kwb - Woodbine Sandstone; Kef - Eagle Ford Shale; Qt - Terrace Deposits; Qal - Alluvium) (adapted from McGowen et al., 1991).
Denton County is northwest of the buried Oauchita belt. The site is located near the intersection of Highway 121 and Valley View Road in Lewisville, Texas (Figure 1). Recent excavations for a housing development exposed a graben bounded by normal faults cutting shale deposits in the Eagle Ford formation. The outcrop was photographed and digitized to render the line drawing in Figure 4. Part of the fault plane is illustrated in Figure 5.

Small-scale faults in the outcrop strike northeast and dip to the northwest and southeast. Average dip separation along the faults is approximately 0.35 m. There was no evidence of strike separation. The faults terminate against a weathered layer exposed at the top of the section. Small-scale drag structures were observed in strata immediately adjacent to the fault planes. This suggests an early history of limited ductile behavior followed by brittle failure.

The northwest-dipping faults are inconsistent with growth faulting caused by coastward subsidence of sedimentary deposits. However, when clays are converted to shale, shrinkage upon losing water can cause settling which could lead to the type of structure observed.

From an engineering perspective, faults in Denton County may constitute planes of structural weakness along which rocks may heave or settle. Small faults, difficult to detect without exposures, are often most troublesome to geological engineers. In the Eagle Ford formation, small-scale faulting may compound other construction problems. The formation is notorious for its expansive clay content and related shrink-swell potential.

**Literature Cited**


Figure 4. Scale drawing of outcrop showing offset marker bed and normal faults. From left to right, faults are oriented (dip in parentheses) N34E(44NW), N50E(30NW), N44E(40NW), and N4E(39SE).

Figure 5. Upper part of dip-slip fault depicted at center area of Figure 4. Hammer marks upper limit of fault plane. Fault surface is exposed at lower right-hand corner of photo.
It was probably not much more than about 30 years ago when most of the non-academic community (namely, the vast majority of taxpayers who collectively support scientific research) generally perceived the geologist to be a rather interesting “good guy.” The geologist studied dinosaurs, he found hydrocarbons and minerals, and he analyzed the origin and impacts of earthquakes, volcanoes, landslides, floods, and glaciers. In this regard, much geological work focused on “processes,” the way geological phenomena occur in nature, and how society can use or modify these processes for the benefit of mankind. Though this layman’s perception was no doubt too simplistic, it generally boded well for the profession: geologists were employed; they provided the “natural process” background for engineers, soil scientists, and the then-budding environmental movement. Further, the general image of the geologist was often heightened by his ability to speak well before local government groups and agencies, pointing out how nature and mitigation works and whether that was good or bad for the immediate area. The typical layman’s response may have been: “You’re a geologist? Wow, that’s neat!”

Alas, it now appears that the somewhat naive “good guy” perception of the geologist and his profession is changing, and perhaps not for the better. In fact, in our society, the geologist may now well be viewed negatively, often as a spokesperson for environmental extremism (with the negative connotations of that term), or as one who unabashedly criticizes construction of new roads, homes, dams, power plants, and general urban development. Unfortunately, too, the geologist is often perceived as a purveyor of doom, for almost every sort of geological process is being deemed a “geologic hazard.” This perception is not unique to geology. Indeed, it is ubiquitous in the form of “natural hazards,” which the general population usually regards as pertaining to hurricanes, to “El Nino events,” to drought cycles, and now, thanks to popular movie culture, to impending bolide impact.

Certainly volcanoes erupt, slopes suddenly fail, earthquakes cause great damage, floods destroy crops and homes, and expansive soils damage houses and infrastructure. But not too many years ago these phenomena were generally regarded wholly as “natural processes,” often accelerated by man, that could be described, measured, and better understood by the geologist. Now, however, whether good or bad and whether intentional or not, a whole new industry of “geologic hazards” has arisen, much to the economic delight of many in our profession. This is not totally bad, for even medical doctors make a very respectable living by dispensing sage advice about hazards to our health. And, heaven forbid, lawyers do the same, and though subject to innumerable bad jokes, are still sufficiently envied in our society that there are waiting lists for enrollment in most law schools.

We now see, for example, that money for “geologic hazard” research has dramatically increased because the public (and many vote-seeking government officials) associate the word “hazard” with some newly discovered terrible problem that can only be resolved by increased expenditure. Accordingly, many in our profession now ably sell the concept of geologic hazards, the euphemism for geologic processes and their influence on mankind. This is particularly evident by even a casual perusal of the Internet that shows a proliferation of agencies now engaged in geologic hazard research, ranging from the well-known and highly respected “Geologic Hazard Team” at the US Geological Survey (a reconstitution of the Engineering Geology Branch), to academic institutions and various state and local governments announcing a multitude of “geologic hazards” that exist in their respective jurisdictions. Unfortunately, to some, the notion of a geologic hazards team conjures up images of geologists walking through urban-earthquake rubble immediately following a sizable seismic event, probing the ruins to determine how additional funds may be sought (this is not limited to government agencies, for geological consulting groups
have done this for years). Of course, we need to learn more from any “high magnitude” natural event. However, to many, this may be akin to the American lawyer, often perceived as an ambulance chaser, one who may represent a profession of low esteem — in the view of many scientists — but one who, nevertheless, is often envied because of usually high remuneration, ubiquity of presence, and ability to influence public policy.

It is indeed easy to criticize use of a term such as “geologic hazards,” but in the short run the term may benefit our profession. On the one hand, for example, prolific use of the “hazard” term has worked remarkably well: grants, applied research funds, and a host of other public-source moneys are available as perhaps never before. This is good, for certainly we need to understand better the social and economic impact of such geological phenomena, major components in the nebulous field of risk assessment. Additionally beneficial is the fact that geologists are increasingly in the public eye. Many qualified geologists, as fitting, are routinely called upon by news media, particularly television, to discuss the impact of a newly discovered fault, or the causation of massive slope failure. But too often the geologist, unintentionally to be sure, raises more fears, by pointing out that such “hazards” will strike again and that, accordingly, additional studies (read: money) are needed.

These “hazard” predictions are true, of course, but, on the other hand, may well detract from the geologist as being a practical and objective scientist. By way of example: southern California is a land developer’s nirvana. Huge population increases since World War II and the “American Dream” have led to construction of literally hundreds of thousands of tract homes and related infrastructure, and thousands of miles of highways, local roads, canals, and pipelines. Perhaps this has been excessive, for much prime agricultural land and natural habitat have been destroyed. But the urbanization process continues, albeit at much higher cost owing to environmental and geological constraints. However, with the selling of “geologic hazards,” the geologist is often no longer perceived as representative of a helpful or even a desirable profession. Too often one can hear a local developer (increasingly regarded with the same disdain as a lawyer) say that what is really needed are good practical engineers, people who by training can provide solutions to a problem. Geologists, unfortunately, are now increasingly perceived as “bad guys,” and geology itself is therefore being viewed in a negative way: “You can’t build there,” “you must avoid that slope.” In contrast, the engineer, perhaps by training, by disposition or by common sense, says: “You can build here if. . .” or “yes, that is technically feasible, but the cost will be. . .” In other words, the land owner/developer gets the same message, but in a more palatable manner. We all know that it is unsafe, usually impractical, and probably illegal, to build directly over an active fault. And that message should be conveyed directly and forcefully to our client, whether that be an individual, a corporation or a government agency. But rather than expressing our findings and opinions in the negative and inflammatory “geologic hazard” language, perhaps it is time to educate our client, advising him about the several geologic constraints that may affect his property or jurisdiction. Perhaps we should go so far as to point out areas that are relatively free of constraints, a suggestion that will undoubtedly fall on deaf ears, owing to the potential for litigation should some unforeseen fissure, fault, ancient landslide, or other phenomenon appear during grading and construction.

The geologic hazards profession is now further expanding, owing to the proliferation of “geologic hazard maps.” Ostensibly to be used by the planner, by the insurance carrier, and perhaps even by the individual homeowner, some hazard maps are being essentially totally ignored. Why? Because they are frequently construed as being impractical. A typical case in point: many new hazard maps in California, based on excellent research and good intentions, depict multiple hazard zones: fault rupture, high ground shaking, seismically induced liquefaction, slope instability, tsunami runup, and expansive soils. These maps are essentially all “red.” Thousands of homes may already exist in these zones. What does the map user or homeowner do? Often, unfortunately, the tendency is to ignore or to disparage the message of the maps, which is, essentially, “every place is subject to one or more geologic hazards.” It would indeed be very helpful, as some of my colleagues have pointed out, to see a map that shows or specifically depicts “non-geologic hazard areas.” I don’t think this will happen.

Is there a solution to the negative perception that excessive use of “geologic hazards” may be bringing to the field of geology? Perhaps other terminology may be less inflammatory in the public mind: we already have such nomenclature as risk elements, specific risk, vulnerability, catastrophe, disaster, and fragility, all well defined in elementary environmental and engineering geology textbooks and often expressed in the form of cause-and-effect equations. Also, the term “fault precaution zone” is used by at least one southern California city concerned with seismically induced ground rupture. Indeed, acceptable until a few years ago was “susceptibility,” typically ranked as “high,” “moderate,” or “low,” when referring to the local potential for landslides, debris flows, or fault surface rupture. But that term, as pointed out by professional colleagues, does not really grab the attention of the planner, the legislator, or the chief of the local geological agency or academic institution. After all, despite our protestations to the contrary, practical geologists are really political animals as well as scientists: we want the best for our profession and for our livelihood.

I therefore can offer no solutions for the “geologic hazards” problem. Rather, I hope that this discourse might be the basis for discussion about the apparent changing public perception of geology as a scientific discipline, and of geologists as objective professionals. Truly, geology is a great profession, and geologists are inherently good people. However, a negative public perception about the proliferation of geologic hazards may ultimately prove to be a major hazard to the acceptance of geologists, to their geological advice, and to the prestige of geology itself. Only time and our actions (or lack thereof) will tell.

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Acknowledgments: I thank the many professional colleagues who commented on the content of this paper. Several disapproved, of course; but all agreed that discussion was worthwhile. In particular, much appreciated were the views and suggestions of Gordon Easton, Eldon Gath, Lisa Grant, George Kiersch, Ellis Kritzinsky, Murray Levish, and Stephen Testa.

Submitted by John J. Dragonetti, CPG-02779

Introduction
Water was certainly a critical factor in the expansion of the nation into the arid west during the last century. In order to appraise existing water resources to support the desired settlement of the region, the U.S. Geological Survey (USGS) initiated a streamgaging program in 1889 to monitor eight western river basins. Streamgaging is a method for measuring how much water is flowing in any given waterway. That inaugural network evolved into a nationwide operation that satisfies agricultural and industrial requirements, residential growth, hydropower production, navigation, and flood forecasting. Because of its many uses, the streamgaging network grew steadily from the beginning of this century into the 1970s. Virtually from its inception over 100 years ago, the program has been a partnership, with a substantial part of the funding coming from a wide range of state, local, and federal agencies. While the demand for streamflow information continued to increase in response to emerging environmental, recreational, and endangered species issues, financial support for the network began to decline over the past two decades. Although many agencies were able to increase support for the network, the federal side of the USGS program continued to have its appropriations reduced to the point where its share of the costs has decreased from 42 percent to the present 33 percent. These fiscal cutbacks, combined with physical damages from natural hazards, have resulted in a decrease in the number of streamgaging stations from 7,400 to about 7,000 today. The reduction in funding has also restrained a modernization effort to equip stations with satellite telemetry to provide necessary real-time information to a host of data users.

The Network Serves Many Customers
The network presently serves numerous local, state, regional, and interstate water authorities; the private sector; and several federal agencies. A portion of the network is supported by a partnership between the USGS and federal, state, and local agencies through the Federal-State Cooperative Program. Among the many federal agencies using the network are the U.S. Army Corps of Engineers, the Federal Emergency Management Agency, the Environmental Protection Agency, the Bureau of Reclamation, the Tennessee Valley Authority, and — perhaps of greatest consequence to the nation’s citizenry — the National Weather Service (NWS). One of the primary reasons for expansion of the network was the catastrophic flooding that plagued the nation in the early part of the century. The information from the network is critical for the NWS to forecast potential flooding and thus reduce losses of life and property. Although floods of significant magnitude and duration are rare occurrences, they often induce high human and economic costs. It is estimated by the National Flood Insurance Program that 18,000 communities and 15 million people may be at risk from flooding.

Access to network data is not restricted to organizations. As a result of technological advances, real-time streamflow data can also be obtained by anyone with Internet access through USGS web-servers from the 4,000 USGS streamgaging stations presently equipped with satellite telemetry.

While the general public may be aware of flood forecasting and mitigation as a key element of network operation, streamgaging provides information for many important purposes. The states can use such data in the allocation of interstate waters and to determine the amount of water transferred across state lines or international borders; the amount of water moving from one water basin to another downstream can be ascertained; information on watershed water quality can be obtained; Wild and Scenic Rivers designations can be resolved; the data may aid the development of interstate compacts, court decrees, and international treaties; critical habitats or ecosystems may be classified; and hydrologic characteristics for major construction projects can be achieved.

Congress Addresses the Issue
The House Appropriations Subcommittee on Interior and Related Agencies acknowledged the problems confronting the streamgaging network and communicated the following to the USGS in a report accompanying the fiscal year 1999 appropriations bill, H.R. 4193:

“The Committee has noted the steady decline in the number of streamgaging stations in the past decade, while the need for streamflow data for flood forecasting and long-term water management uses continues to grow. The Committee requests that by November 30, 1998 the Survey provide a report describing the goals and current status of the streamgaging network and an evaluation of the ability of the network to meet its goals.”


Conclusion
In recognition by the states of the need to maintain a viable national streamgaging network, the Association of American State Geologists adopted a resolution at their 1998 annual meeting urging the USGS and the other federal agency users to make the network a national priority. Anyone wishing to register their support for the network and its modernization program should contact members of the House and Senate Appropriations Committees or their congressional representatives.

The Government Affairs column is a bimonthly feature written by John Dragonetti who is Senior Advisor to the American Geological Institute’s Government Affairs Program.

Acknowledgments: Robert Hirsch, Chief Hydrologist, USGS, and Gail Wendt, Chief Communications Manager, USGS Water Resources Division.
DOE Research Program Takes Hit in Fiscal Year 2000 Budget Request

The President’s budget request for fiscal year 2000 includes modest increases for most geoscience-related agencies and programs. A matter of considerable concern, however, is a significant cut proposed for the Department of Energy’s (DOE) geosciences research program in its Office of Science. An apparent 9 percent decrease masks a more significant cut to the current program of nearly 40 percent offset by new and transferred funds for carbon sequestration as part of the Administration’s climate change technology initiative. The program funds basic research in focused areas with broad applications to multiple DOE mission areas including oil and gas exploration and development, geothermal energy, and environmental remediation. Universities and DOE national laboratories receive peer-reviewed grants for research in geochemistry, hydrology, rock mechanics, and geophysical imaging.

Elsewhere in the President’s request, the US Geological Survey request features a significant budget restructuring that would move facilities and science support costs out of the individual divisions and into Survey-wide accounts. The budget also would create a separate account for integrated science projects. Overall, the Survey would receive a 5 percent increase. The National Science Foundation’s Geosciences Directorate is up 2.6 percent. At DOE, petroleum R&D would increase 3 percent, natural gas research would decrease 8 percent, and the Yucca Mountain project would increase 17 percent. NASA’s Earth Science Enterprise is up 3 percent, and NOAA’s budget is up nearly 10 percent.

A special update with additional details on the President’s request is available at <http://www.agiweb.org/gap/legis106/budgetfy2000up.html>. Since the release of the budget, Congress has held hearings to determine which of the Administration’s programs they feel are worthy of funding. The AGI website will contain updates of the appropriations process, and also includes a detailed description of the budget request.

Momentum Builds in Congress and DOE for Oil Industry Relief

The crisis in the oil patch has begun to attract attention on Capitol Hill and in the Clinton Administration. Increasing numbers of job losses — 12,000 in January alone — are sparking fears that the oil industry downturn could adversely affect the booming economy. A February 25 hearing by the House Ways and Means Oversight Subcommittee sought to substantiate claims that the current tax laws are ineffective in compensating the failing domestic petroleum industry.

The hearing was partly in response to two pieces of legislation introduced by committee members Wes Watkins (R-OK) and Bill Thomas (R-CA) — H.R. 53 and H.R. 423 respectively. These bills would provide new tax breaks and incentives for marginal wells and small producers. Although the Administration does not support the tax-relief bills, DOE has taken a number of its own steps to address the problem. Energy Secretary Bill Richardson announced that starting in April, DOE would obtain oil for the Strategic Petroleum Reserve (SPR) at in-kind royalty payment from offshore Gulf of Mexico leases, replacing 25 million barrels of oil sold from the SPR in recent years for deficit reduction and other purposes. The SPR currently holds 561 million barrels, well below its maximum capacity of 680 million barrels.

Richardson also offered to use some of that unused capacity to provide commercial storage for up to 70 million barrels in order to keep that oil off the market. DOE has also requested $19 million for research and development focused on increased recovery efficiency to help prevent domestic producers from prematurely abandoning fields. Late in February, DOE signed a memorandum of understanding with the Small Business Administration (SBA) to help small producers and service companies take advantage of SBA loan guarantees and other assistance programs. Additional information on the hearings and related oil and gas issues in Congress can be found at <http://www.agiweb.org/legis.html>.
NEHRP Reauthorization Process Begins

On February 23rd, the House Subcommittee on Basic Research held a hearing as the first step toward reauthorization of the National Earthquake Hazards Reduction Program (NEHRP). New subcommittee chairman Rep. Nick Smith (R-MI) expressed his support for the program and his hope to “increase authorization funding and also increase our bang for the buck.” One of the scientists giving testimony stated that “if research can reduce the loss from a single future earthquake by as little as 10 percent, the payoff on the research investment will be as much as a thousand times the annual research budget for earthquake research in this country.” Two of AGI’s member societies have sent out alerts to their membership encouraging them to express their views on NEHRP to Congress in order to keep the legislative ball rolling to successful enactment of a new bill. A full description of the hearing is available on the AGI website: <http://www.agiweb.org/gap/legis106/nehrp.html>

Little Enthusiasm for DOE Proposal To Take Title to Civilian Nuclear Waste

By law, the Department of Energy (DOE) was required to take possession of spent nuclear fuel from civilian nuclear reactors starting in 1998.

The law in question assumed, somewhat optimistically we now know, that a permanent underground repository would be built by then. With the proposed Yucca Mountain repository not scheduled to open before 2010, utility companies sued DOE last year for failure to fulfill its obligation. Now, Energy Secretary Bill Richardson has proposed a partial solution to the impasse with the federal government assuming legal title and management responsibility for the spent fuel being stored at 72 nuclear plants around the country, the bulk in the East. The utility companies favor this temporary storage facility adjacent to Yucca Mountain before a final decision is made on the underground repository. By two votes in the Senate, similar legislation in the last Congress failed to garner the two-thirds majority needed to overcome an expected presidential veto. Supporters claim that they now have the votes in both the House and Senate to override a veto.

Research Council Releases Report on GPRA

Since its inception in 1993, the Government Performance and Results Act (GPRA) has raised concerns in the scientific community about how it would be used to measure basic research performance. To answer this question, the National Academies of Science and Engineering and the Institute of Medicine recently conducted a study and released a report by their Committee on Science, Engineering, and Public Policy entitled “Evaluating Federal Research Programs: Research and the Government Performance and Results Act.” The report recommends that federal agencies use a three-pronged approach to measure basic research. The report states that agencies should use peer review to assess quality; review by experts in the field and potential users in other fields to review the relevance of the research to an agency’s mission; and international panels to assess “whether the research is at the forefront of scientific and technical knowledge.” For applied research, “agencies should measure progress toward practical outcomes.” The report recommends better communication between agencies, encourages agencies to focus on training and educating young scientists, and recommends that the scientific and engineering community should become more familiar with and more involved in the implementation of GPRA. The report is available on the National Academy Press website: <http://www.nap.edu/readinglegroom/books/gpgra/>.

FOIA Provision Continues to Raise Concerns

In response to concerns by AGI member societies over the implications of revising White House Office of Management and Budget (OMB) Circular A-110, GAP staff attended a briefing on the topic organized by the American Association for the Advancement of Science. The provision in last year’s appropriations bill directs OMB “to require Federal awarding agencies to ensure that all data produced under an award will be made available to the public through the procedures established under FOIA.” FOIA is the Freedom of Information Act, an important “sunshine” law by which citizens can obtain unclassified government data, reports, and other material. The scientific community has raised concerns over the potential misuse of such requests to release scientific data collected by academic researchers before it has been peer-reviewed or published. Other concerns include the effect on intellectual property rights, the possible violation of confidentiality of human research subjects, and delay and disruption of scientific work by groups opposed to the results of certain research.

The speakers at the forum included representatives from Congress, OMB, universities, and industry. Kathy Casey, legislative director for Senator Richard Shelby (R-AL), provided insight on the intent of the provision, which Shelby inserted into a massive budget bill during final negotiations. She stated that his purpose was to provide taxpayers with the right to access all federally funded research and to make all research underlying federal rules publicly available.

A notice seeking comments on the proposed rule appeared in the Federal Register on February 4. OMB’s interpretation of language seems to limit the effects of the provision by applying it only to “data relating to published research findings produced under an award that were used by the federal government in developing policy or rules” but does not define data, research, or policy. Comments must be received by April 5. More information on the GAP site at <http://www.agiweb.org/gap/legis106/foia.html>.

AGI Executive Committee Endorses APS Statement on the Nature of Science

During its Feb. 20 meeting, the AGI Executive Committee unanimously voted to endorse a letter from the American Physical Society (APS) on the nature of science. In a letter to APS President David Stephenson in December, APS President Andrew Sessler wrote: “Most scientists, I believe, are anguish by the growing influence of pseudoscientific claims in a time of almost daily scientific triumphs.” Scientists, he says, “have an obligation to
help non-scientists distinguish the genuine from the counterfeit.” Sessler sent the letter to a large number of scientific societies seeking endorsement of the letter.

Sessler adds that the letter may “initiate a dialogue within the scientific community about the best way to deal with the problem of pseudoscience.”

**AGI/AAPG Semester Intern Arrives**

AGI’s Government Affairs Program welcomed our first AGI/AAPG semester intern this month, with the arrival of Christi Snedegar on February 8. Christi graduated in December from Indiana University in Bloomington with a dual degree in geology and classical civilization. In November, she will join the U.S. Navy’s nuclear engineering program. Since her arrival, Christi has attended hearings on the state of the oil and gas industry, nuclear waste, and hardrock mining. GAP is grateful to AAPG for its support of this internship.

**Tentative Schedule of Upcoming GAP Activities**

The next meeting of the AGI Government Affairs Advisory Committee is scheduled for Friday, April 23, 1999 at AGI headquarters in Alexandria VA. The meeting will be held at the offices of the American Association for the Advancement of Science, 1200 New York Avenue, NW, Suite 800, Washington, DC 20005. The agenda will include:

- **March 8, NSF Environment Task Force Town Meeting, Arlington VA**
- **March 16, AASG Liaison Committee, Washington DC**
- **March 25-26, AGU Public Affairs Cmte., Washington DC**
- **March 29-30, GSA Geology & Public Policy Cmte., Washington DC**
- **April 11-13, AAPG Annual Convention, San Antonio TX**
- **April 14-16, AAAS Science & Technology Colloquium, Washington DC**
- **April 21-22, Congressional Visits Day, Washington DC**
- **April 23, GAP Advisory Cmte. Mtg., Alexandria VA**

**New Material on Web Site**

The following updates and reports were added to the Government Affairs portion of AGI’s web site (http://www.agiweb.org) since the last monthly update:

- **Communicating with Congress:** 106th Congress edition (3-2-99)
- **Special Update:** Earthquake Program Reauthorization Gets Underway (2-25-99)
- **National Earthquake Hazard Reduction Program Reauthorization** (2-25-99)
- **NRC Report on Evaluating Federal Research Programs** (2-22-99)
- **Agency Action Alert: Comments Sought on Energy, Environmental,
  and Research Issues (Posted: 2-22-99)**
- **Geotimes Political Scene: Are the Geosciences Keeping Up? (2/99)**
- **Geotimes News Note: A Role for Carbon Sinks (2/99)**
- **Provision to Apply FOIA to Federal Grants Update (2-19-99)**
- **Outer Continental Shelf Royalties Update (2-11-99)**
- **Special Update: President Clinton’s Fiscal Year 2000 Budget Request (2-5-99)**

This monthly update goes out to members of the AGI Government Affairs Program (GAP) Advisory Committee as well as the leadership of AGI’s member societies and other interested geoscientists as part of a continuing effort to improve communications between GAP and the geoscience community that it serves. Prior updates can be found on the AGI web site under “Government Affairs” <http://www.agiweb.org>. For additional information on specific policy issues, please visit the web site or contact us directly at <govt@agiweb.org> or (703) 379-2480.

**Minnesota Legislative Issues**

There is at least one bill with three important points, which could affect our profession:

Legislation has been introduced (SF 1485, HF ?) with the support of the Board to do the following three things:

1. Increase the biennial license fee to $120/biennial renewal. Right now, the fee is $70...our breakeven costs are $104 (so we’re in the red for the last couple of years). Also, the Legislature is increasingly setting fees in statute and wants to build some cushion so they’re not dealing with fees every year or so. This fee increase applies to ALL of the professions.

2. Continuing Education will be mandated in statute...at 24 personal development hours per biennium. The requirements are the same as in rule, with the exception of no self-study (which was allowed in rule - with a cap - but we were very unclear exactly how it would work). Legislative authors did not like self-study.

3. Civil penalties increase from current $2000 maximum to $10,000 maximum, more consistent with other licensing boards and agencies and provide more enforcement teeth.

**Colorado School of Mines Professor Honored**

Dr. Graham Closs, CPG-07288, professor of economic geology and geochemistry, was recently recognized by the Association of Geoscience Students (AGS) during the annual Faculty Appreciation Dinner. This student-sponsored dinner is held for the faculty and staff of Department of Geology at the Colorado School of Mines. Several members of the department are honored for their achievements towards improving student education. Dr. Closs received the “Defender of Professional Geology” Award for his endorsement of ethics and professionalism in the geosciences. The Colorado School of Mines has recently organized a student chapter of AIPG under the direction of Dr. Closs. This is only the second student chapter of AIPG to be organized in the United States.

Dr. Closs began monthly “Brown-Bag Talks” in the spring of 1998, which focused on professionalism in the geosciences and the role of AIPG. Increased interest in AIPG led Dr. Closs to continue these talks and organize a student chapter. Lecture topics have included junk science and public policy, expert witness testimony, forensic geology, ethics, and registration issues. Dr. Closs has proven to be an exceptional promoter of AIPG and its mission. He invokes the students and faculty of the Colorado School of Mines by his words and actions to uphold the ethical and professional practice of geology.

*By Leah Wolf, President of Association of Geoscience Students & AIPG student member*
TSE/OSC Mining Standards
Task Force Report

My article, “Who is a Competent or Qualified Person and Who Cares?” in the January TPG, referred to the Mining Standards Task Force set up by the Toronto Stock Exchange and the Ontario Securities Commission (TSE/OSC MSTF). The article referred to the TSE/OSC MSTF’s Setting New Standards: Interim Report, which was published in June 1998. The Final Report was issued in early February. The Final Report continues to urge adoption of the Qualified Person concept (see next section) by Canada’s provincial securities regulatory authorities. At the moment, the TSE/OSC MSTF’s recommendations are simply that. They have no force of law. It will be interesting to see how this concept unfolds in the coming months.

Cross-Professional Regulation:
The Professional Geologist as Human Health Risk Assessor

The article, “The Professional Geologist as Human Health Risk Assessor: Covering New Ground with Caution,” by Troy L. Schultz, CPG-09902, and Alan H. Coogan, CPG-02597, in the March TPG provides an excellent example of the need for input from a number of professions in order to arrive at an answer to a problem. Schultz and Coogan state, “The multi-disciplinary character of risk assessment is captured quickly by noting that practicing risk assessors include: geologists, chemists, engineers, toxicologists, biologists, and public-health professionals. ... With the adoption of Risk-Based Corrective Actions (RBCA) across the country, the site characterization and risk assessment evaluation steps merge into one process (ASTM, 1995). This merger compels geologists to learn about risk assessment in those states that have already adopted a RBCA process. Others may choose to learn risk assessment to increase their understanding of assessment needs or to become professional risk assessors.” How long will it be before there is formal regulation and registration of Human Health Risk Assessors?

Schultz and Coogan provide a different example of the general issue I addressed in my article, “Who is a Competent or Qualified Person and Who Cares?” (TPG, Jan. ’99), namely cross-professional qualification and regulation, which may become more common in coming years. Both my mining example and Schultz and Coogan’s human health risk assessors example provide further support to Bill Knight’s, CPG-00153, thesis in “After the Rapture, or AIPG’s Role after Registration” in the March TPG.

International Practice:
New Anti-Bribery Laws

L. Graham Closs, CPG-07288, provided me with two articles from the Financial Post (2/13/99, p. D1 and D3), a Canadian business paper, relating to the adoption by Canada and other countries of anti-bribery laws similar to the Foreign Corrupt Practices Act in the U.S. These laws stem from the Organization for Economic Co-operation and Development (OECD) convention in December 1997 that agreed to criminalize corruption. The OECD has 29 member countries. The new laws target the practice of bribing or providing kickbacks to government officials and others to do business. Such payments have been regarded as a cost of doing business by many internationally active firms. Such payments may be particularly common in countries where government officials are poorly paid or not paid at all. The articles note that the primary enforcement mechanism is whistle blowing by those who have been placed at a competitive disadvantage by their failure to pay the bribes or kickbacks.

One of the articles described CanOxy’s development of an international code of business ethics while considering investment in Nigeria two years ago. CanOxy’s code distinguishes between bribes and kickbacks, which are both prohibited, from facilitating payments, which are not. Bribes and kickbacks tend to be larger payments and are made to secure or maintain business opportunities while facilitating payments are smaller, speed up a normal government function (such as obtaining a phone line), are not illegal in the host country, and are accurately recorded.

Further comments on the differences between U.S. and foreign business practices are always welcome, particularly where these differences in practice have ethical implications. The distinction made between bribes and kickbacks and facilitating payments in particular may warrant comment and discussion.

The Ethics of Suspension of Certification for Non-Payment of Dues

I’m writing this in early March", the time of year when AIPG annually receives a few letters from those whose membership has been suspended for non-payment of dues. One letter this year objected in particular to the suspension of the designation “Certified Professional Geologist.” The complainer asserted that once having met the requirements for certification (Bylaws Section 2.3.1.4), he was entitled to use the title thereafter. He pointed out that the CPG certificate contains no language restricting the use of the title.

1. For those wondering how I can cite articles in the March TPG in early March, prior to reception of the issue in mail, it’s not because I have an inside track with the editorial process. The March TPG was posted on the members-only part of AIPG’s web site at the same time it went to the printer. Those whose mail delivery is slow are encouraged to download the latest issue from the web site. This is also a means of obtaining re-print copies of your favorite articles. All 1999 issues are available.
Bill Knight, CPG-00153, has seen most of these letters over the years and offers the following observations. “Each year we get a few letters from people who are offended by the suspension (or other) letter from the Treasurer. ... [The argument] ‘Once and Englishman, always an Englishman’ does not fly. One of the obligations of certification is to support the organization which certified you. Failure to do so, but to continue to claim certification is, in my opinion, a breach of ethics. [The complainer] ought to try this one on of the registration boards who determine one to be a ‘professional’ geologist, or engineer, or whatever. [The complainer] does not seem to understand the difference between a technical organization, e.g., AIChe, SME, AAPG, etc., and a professional organization, e.g., AIPG. Again, he might try this on DPA of AAPG and see how far he gets.”

AIPG’s Bylaws are quite clear on the subject. Payment of dues and compliance with the Bylaws are required by Section 2.5.1. Suspension is automatic if dues are not paid within the specified time (Sections 2.6.2 and 2.6.3), as is reinstatement if the outstanding obligation is paid within a specified time. Use of the title “Certified Professional Geologist” is restricted to CPGs in good standing with the Institute (Section 2.5.4.1). Only CPGs in good standing may use the title and certification seal in their correspondence, reports, business cards, etc. (Section 2.5.4.3 & 4). This is the basis for Knight’s comment on “Once and Englishman, always an Englishman.” One is certified by AIPG only so long as AIPG continues to grant the privilege. As Knight notes, this is true of any certification or license any of us holds.

There are a number of members who make a habit of paying as late as possible, and who frequently receive a suspension notice prior to payment. Managing your own cash flow can have an adverse impact on AIPG’s cash flow. As Knight points out, claiming membership or certification by an organization while at the same time not meeting your obligations to that organization, including paying your dues, is dishonest and therefore unethical.

One direct consequence of paying late is that your name is not published in the annual membership directory. I know that I use membership directories (AIPG’s and others) extensively in locating geoscientists with particular qualifications and in particular places. I don’t believe I’m unique.

There are those facing genuine financial difficulties for a variety of reasons. Being in this state of affairs has consequences. Facing and admitting the situation is the first thing that must be done. While this will not pay the bills nor necessarily avoid the consequences of non-payment, it will at least let your creditors know they are not simply being ignored and may assist in arranging an alternative payment plan of some type. However, the letters prompting this discussion are not received from those in financial difficulty.

**Ethical Treatment of Students: Where are the Jobs?**

While I was at the AIPG booth at the SME Meeting in Denver, a student asked me about the job market. She told me that she had asked one of the meeting’s keynote speakers this question and had received an “I don’t know” answer, which she felt was most unsatisfactory. Inherent in her question was the implied ethical responsibility of the profession, and professors in particular, to let students know about the geoscience job market. So what can we tell students?

Despite the generally excellent state of the U.S. economy in early 1999, this is not a great time for geoscientists. The one thing we know is that business is cyclical. I remember John W. Rold, CPG-00448, trying to make this point in the late 1970s or early 1980s while presenting a talk during the boom days following the “energy crisis.” Life for the geoscience community was as rosy then as it is gloomy now. And perhaps unlike most other times, this time all segments of the business are down. Although I remember that by the time of the oil bust, the uranium geologists in Denver had all the good jobs driving for UPS and the more recently laid off petroleum geologists had to deliver pizzas. In the fall of 1996, when the Colorado Section hosted its first Student Career Day, things were looking pretty good in the mining and petroleum business. We told the students about the cyclical nature of the business, but prospects for students were pretty good then. Today, as unsatisfactory as the “I don’t know” answer seems, I can’t predict when things will get better. And we could well be talking to the same students — those who were upper level undergraduates then are finishing MS degrees now.

Nevertheless, the initial question still stands, what do we tell students? How can we ethically encourage them to pursue geoscience careers when many of us are wondering about our own job security? Please contribute your thoughts.

**Protecting Proprietary Information While Traveling**

A recent company announcement regarding the theft of proprietary data from laptops came to my attention. While on international travel, two different individuals discovered that their laptops had been tampered with in their hotel rooms while they were out of the rooms at a function. In one case, the laptop was locked in a garment bag and in the other, the laptop was in the hotel-room safe. The laptops contained licensing, pricing, and other information related to on-going negotiations. Clearly the security measures employed were insufficient. The case also highlights the fact that the information on your laptop may be far more valuable than the laptop itself.

Suggested security measures to thwart such intrusions can include the following:

1. If your laptop’s boot procedure can be password protected, use it. My laptop has this feature, which activates before the floppy drive is checked. The only way to get at the data on my hard drive is to remove it and have the hardware to read it. Not all laptops have this feature.
2. Encrypt your data using a good encryption program. Exporting the encryption program can be illegal, but using it is not exporting.
3. Keep the sensitive data on a disk or CD which you always carry with you. If the data isn’t on your hard drive, it can’t be removed.
4. It may be worthwhile having an extra hard drive used only for travel. Load it only with the programs you will use and leave the rest of the information at home. E-mail is available in an amazing number of places and this may be a way to obtain needed data.

If you have additional suggestions, comments, or experiences, pass them along.
Dear Editor:

This is sent in response to the “President’s Message” in the January issue of TPG. The following comments are my own personal opinions, and they do not necessarily reflect the views or policies of the Illinois Department of Professional Regulation (DPR), the Illinois Board of Licensing for Professional Geologists of which I am Chairman, or the National Association of State Boards of Geology (ASBOG) of which I am a member.

A geologist certified by AIPG (CPG) has no standing under the laws of the State of Illinois. Those activities exempted under the Illinois Professional Geologist Licensing Act may be performed legally by any competent or qualified geologist including a CPG. DPR has a staff of investigators to vigorously seek out violators of the Act and the rules and regulations promulgated thereunder.

The Illinois “grandfather” period has expired, and a candidate for licensure must successfully pass the two-part ASBOG Examination that is now required by 20 states (two states have their own exams, but plan to begin using the ASBOG exams). This exam may only be taken through a state board at this time. It would be a monumental duplication of work for AIPG to attempt to formulate a test of equal validity. I therefore feel that it is unnecessary for AIPG to require an examination for membership.

The prospective membership base for AIPG in Illinois consists of 1) current AIPG CPGs, 2) licensed geologists in Illinois, and 3) candidates for licensing and/or certification. A new (eight year old) competing organization, The Professional Geologists of Indiana, Inc., has formed in Indiana. Their complaints about AIPG are the high dues and the cumbersome process to join (this has been modified recently). Their eight-page newsletter, The PGI Geology Standard, is well done, and they appear to be much more active than the IL-IN Section of AIPG. Similar organizations have formed in other states. One geologist here in Illinois expressed interest in forming a similar group. AIPG needs to find a way to convince these groups to amalgamate with AIPG, or at least communicate regularly.

I have been a CPG since 1976 (at which time few states required licensing), but, with the recent increase in the number of states that now require licensing or registration (27), I see less need for certification by AIPG (although I am semi-retired). Licensing provides a minimum level of professional competency that is backed by law. A willful violation in Illinois is punishable by a fine of up to $5,000.

The viable future role I see for AIPG is to function somewhat parallel to the National Society of Professional Engineers (NSPE) and for the IL-IN Section to parallel the Illinois Society of Professional Engineers (ISPE). If the PGI would merge into AIPG, we could have two single state sections. As we number one-tenth or less than engineers, for professional geologists to have an effective national voice we must avoid being any more splintered than we already are.

William G. Dixon, Jr., CPG-03659

Dear Editor:

I must disagree with some of the opinions expressed by my colleague Mr. Joseph Riva in the February issue. Mr. Riva assert-
Geologists Salaries Reported

The average income reported in a recent survey of the compensation of geologists was $62,500, according to Dr. Steven Langer, President of Abbott & Langer, Crete, Illinois. However, 10% of the reported incomes were under $40,500 and 10% over $117,900. The survey was sponsored by the American Institute of Professional Geologists. Copies of the in-depth, 347-page survey report are available for $195.00 from Abbott, Langer & Associates, Dept. NR, 548 First Street, Crete, Illinois 60417.

Compensation varies considerably from one type of employer to another. Median incomes are slightly higher in non-consulting firms ($64,900) than in consulting firms ($61,000). The highest median incomes are in the petroleum industry ($107,100), geophysics consulting firms ($90,200), petroleum geology consulting firms ($60,000), and engineering geology consulting firms ($60,400).

Income data are reported by region, state, and metropolitan area; type of employer; size of organization; length of experience; geological specialty; level of professional responsibility; certification status; registration/licensure status; and level of supervisory/managerial responsibility. Income data are also reported for each of the variables above vs. type of employer; size of organizations; region, state, and metropolitan area; length of experience; supervisory/managerial responsibility; and job level.

Survey participants with a bachelor's degree in geology have a median income of $59,925, with a masters in geology $65,372, and with a Ph.D. in geology $71,000. Geologists with 5 - 9 years of experience have a median income of $46,521, as opposed to the 30-plus year veteran with a median income of $82,000. Those geologists with no supervisory responsibility have a median income of $58,125. For those supervising 50 or more professional & sub-professional employees, it is $101,250.

The highest median incomes are found in the Houston, Los Angeles/Long Beach, New Orleans, Washington, DC, Rochester (NY), Philadelphia, New York City, San Francisco/Oakland, and Dallas/Fort Worth metropolitan areas (all between ($68,500 and ($99,100). The lowest are found in South Dakota, Iowa, and the Baltimore, Birmingham, Atlanta, Pittsburgh, and Dayton metropolitan areas (all between $39,900 and $52,437).

By geological specialty, the highest median incomes are found in petroleum and natural gas, geophysics and seismology, geochemistry, and exploration (all between $80,600 and $89,850). The lowest are found in general geology/earth sciences/regional geology, petrography/petrology/mineralogy, and environmental geology/soil science/land reclamation (all between $54,001 and $56,000).
Compensation of Professional Geologists

Sponsored by the American Institute of Professional Geologists (AIPG), this massive, tightly-packed 347-page report provides the most intensive and extensive study of salaries and bonuses ever attempted in the field of geology. Pay data for 1,096 geologists are reported by:

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  • size of organization
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  • geological specialty
  • level of education
  • length of experience
  • level of professional responsibility
  • certification & registration/licensure
  • level of supervisory/managerial responsibility

Pay data are also reported for each of the other variables vs.:

• type of employer
  • size of organization
  • geographic location
  • length of experience
  • level of professional responsibility
  • supervisory/managerial responsibility

This is an invaluable tool for determining the "right" salaries for the field of geology.

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AIPG Web Site Member Login Instructions

Here are instructions for using the new AIPG web site, www.aipg.org. To enter the Members portion of the site, you must request your login name and password from Headquarters (303-431-0831 or aipg@aipg.org). If you are unable to connect to the site, please let us know immediately. Please remember that this is a new site with some sections still under construction. Comments and suggestions are welcome.

(Note: Your password is linked to your member record in the database. You will not be able to change it.)

The new home page is a more attractive, easy-to-use source of information for the public. It also offers new services to AIPG members. The site was designed by Advanced Solutions International and is linked to the AIPG database. Until mid-1999, the database will not be updated automatically and will require a periodic upload from Headquarters. An address change that you send to Headquarters may not show up on the site for several weeks.

• The “Welcome” section of the site is available to anyone. It features general information on AIPG, the application package, lists of state registration offices, publications, etc.

• To enter the members-only portion of the site, scroll down to “AIPG-Login”. Enter your name (all caps) and password as shown above. A new sidebar will appear with “Member,” “AIPG,” and “Membership” sections.

• The “Member” section has descriptions of our insignia items and publications, with a link to headquarters to place an order. There is also a list of the other member benefits such as insurance companies, rental car discount codes, etc.

• The “AIPG” section will give you up-to-date information on AIPG business. [Note: you do not need to login again here]

• “Check Out” will have information on future meetings.

• “URLS” provides links to sections, related societies, and state registration boards.

• “E-mail lists” lets you sign up on lists such as one for information on the 1999 Annual Meeting in Anchorage.

• “Comments” lets you send messages to Headquarters and to the Ethics Committee Chairman.

• “Pages” has folders on the status of registration bills and other topics of interest to the membership.

• “AIPG Forums” are for online discussion by the Executive Committee (Private Forum) and by the general membership (Public Forum).

• The “Membership” section is the online AIPG directory. The easiest way to look for a particular member is to use “Speed Search.” When searching by last name, you can enter the first few letters of the last name; this field is not case sensitive. You will also be able to search by company name at a later date. There will be names, city/states, and phone numbers for the members listed. For additional information, double click on the member name. On this page, you can send an e-mail directly to the member by clicking on the red underlined e-mail address.

DO NOT USE THE SEARCH PORTION. IT WILL BE REMOVED IN A FUTURE UPDATE OF THE SITE.

• The “Directory” section is organized like the printed directory, listing names alphabetically. However, the listings are organized by Section, with members who live outside the U.S. or in states that do not have sections being listed first. The Comp Section includes retired members and students.

Under Demographics, member specialty fields and employer names are listed. The primary specialty is UF_5, the secondary specialty is UF_6, and the tertiary specialty is UF_7. The employer name is by UF_10 and List1 shows the states/provinces where the member is registered/certified. In a future update of the site, we will be able to use the proper names for the fields.

[Note: As in the printed directory, there are symbols by some of the last names. * is for Registered Member, # is for Member, % is for Student Adjunct and ^ is for an Associate.]
### TYPES OF MEMBERSHIP AND REQUIREMENTS

#### CERTIFIED PROFESSIONAL GEOLOGIST

**EDUCATION:** 36 semester or 54 quarter hours in geological sciences* with a baccalaureate or higher degree; certified copy of official transcripts must be sent by each college or university

**EXPERIENCE:** 8 years beyond bachelor's degree, or 7 years beyond master's degree, or 5 years beyond doctorate

**SPONSORS:** 3 required from professional geologists, 2 of whom must be CPG's (see Section 2.3.1.4 of the Bylaws for exceptions)

**CERTIFICATION/REGISTRATION:** None required

**SCREENING:** Section and National

**APPLICATION FEE:** $50 (to upgrade from Registered Member or Member to CPG, the fee is $35)

**ANNUAL DUES:** $110 plus Section dues; both pro-rated for remainder of year when accepted

#### REGISTERED MEMBER

**EDUCATION:** 30 semester or 45 quarter hours in geological sciences* with a baccalaureate or higher degree; certified copy of official transcripts are required for this application if they are not required by the state for registration/certification/licensure

**EXPERIENCE:** No proof required

**SPONSORS:** 2 required from professional geologists, one of whom must be a CPG, Registered Member, or Member; sponsor letters in state registration application may serve as sponsor statements if approved by Executive Committee

**CERTIFICATION/REGISTRATION:** Proof of current registration/licensure/certification must be submitted with application and with annual renewals and must include expiration date

**SCREENING:** National

**APPLICATION FEE:** $30

**ANNUAL DUES:** $60 plus Section dues; both pro-rated for remainder of year when accepted

#### MEMBERS

**EDUCATION:** 30 semester or 45 quarter hours in geological sciences* with a baccalaureate or higher degree; certified copy of official transcripts must be sent by each college or university

**EXPERIENCE:** No proof required

**SPONSORS:** 2 required from professional geologists, one of whom must be a CPG, Registered Member, or Member

**CERTIFICATION/REGISTRATION:** None required

**SCREENING:** Section and National

**APPLICATION FEE:** $30

**ANNUAL DUES:** $60 plus Section dues; both pro-rated for remainder of year when accepted

#### STUDENT

**EDUCATION:** Currently enrolled in a geological science* degree program

**EXPERIENCE:** None required

**SPONSOR:** 1 letter from geological science faculty member

**CERTIFICATION/REGISTRATION:** None required

**SCREENING:** Headquarters can approve

**APPLICATION FEE:** $5

**ANNUAL DUES:** $15

#### ASSOCIATE

**EDUCATION:** None required

**EXPERIENCE:** None required

**SPONSORS:** 1 CPG, Registered Member, or Member

**CERTIFICATION/REGISTRATION:** None required

**SCREENING:** Headquarters can approve

**APPLICATION FEE:** $5

**ANNUAL DUES:** $50 plus Section dues; both pro-rated for remainder of year when accepted

*As defined by the American Geological Institute, a geological science is any of the subdisciplinary specialties that are part of the science of geology, e.g., geophysics, geochemistry, paleontology, petrology, etc.

Note to those who received their degrees from non-U.S./Canadian universities: If you received a degree from a university or college outside the U.S. or Canada, and the school is unable to provide an acceptable transcript, you must submit a copy of your diploma and a list of courses taken. The Screening Committee may ask you to provide additional information or an equivalency evaluation, at your expense.
Applicants for certification must meet AIPG's standards as set forth in its Bylaws on education, experience, competence, and personal integrity. If any Member or board has any factual information as to any applicant's qualifications in regard to these standards, whether that information might be positive or negative, please mail that information to Headquarters within thirty (30) days. This information will be circulated only so far as necessary to process and make decisions on the applications. Negative information regarding an applicant's qualifications must be specific and supportable; persons who provide information that leads to an application's rejection may be called as a witness in any resulting appeal action.

**Applicants for Certified Professional Geologist**

**NH-Drobot, Patricia A.**

**NY-Karbocki, Frank A.**
P.O. Box 61, Camden NY 13316. Sponsors: Gerald Gould, Fine Hsu, Bill Morrow.

**NY-Katz, Jeffrey F.**

**HK-Kong, Chi Seng**

**NV-McLachlan, Colin D.**
P.O. Box 877, Battle Mountain NV 89820. Sponsors: Ronald Parratt, Steven Green, Andrew Schumacher.

**NY-Miller, Leonid**

**MN-Rapp, Keith B.**
Versifrac, Inc., 4330 E. Mountain Vista Dr., Phoenix AZ 85044. Sponsors: David Kirchner, Eric Zugay.

**AZ-Rapacz, Amy J.**
4330 E. Mountain Vista Dr., Phoenix AZ 85044. Sponsors: Dietrich Whitesides, Craig Chesner.

**CO-O’Keefee, Michael K.**
Versifrac, Inc., 11990 Grant St. #500, Northglenn CO 80233. Sponsors: Dietrich Whitesides, Craig Chesner.

**CO-Finkel, Todd D.**
5145 Rhyner Ct. #B, Anchorage AK 99508

**OH-Gibson, Michael T.**
CPO-10398

**OH-Gorin, Stephen R.**
CPO-10389

**TX-Dromana, Sharma V.**
CPO-10387

**AK-Daigle, James A.**
CPO-10374

**TX-Kowalski, Mary A.**
CPO-10386

**NY-Guerriero, Joseph A.**
CPO-10395

**NY-Ilg, Susan Rotto**
CPO-10375

**NY-Kuczynski, Janie R.**
CPO-10396

**NY-Keenan, Niles W.**
CPO-10402

**NY-Keeran, Michael T.**
CPO-10394

**NY-Kaczor, Peter J.**
CFC-0162

**NY-Kesl, Amanda J.**
MEM-0017

**NY-Khan, Arif J.**
MEM-0016

**NY-Lennon, Daniel W.**
MEM-0015

**NY-Miller, Leonid**
MEM-0018

**NY-Williams, Paul M.**
MEM-0014

**NY-Williams, Paul M.**
MEM-0012

**NY-Williams, Paul M.**
MEM-0010

**NY-Williams, Paul M.**
MEM-0008

**NY-Williams, Paul M.**
MEM-0006

**NY-Williams, Paul M.**
MEM-0004

**NY-Williams, Paul M.**
MEM-0002

**KY-Alida, Steven M.**

**PA-Hersey, Jonathan A.**
368 Paoli Pike, Malvern PA 19355. Sponsors: John Jengo, Suzanne Eckel.

**CT-McNally, Jeffrey N.**
94 Old Farms Ln., New Milford CT 06776. Sponsors: John Folchetti, Dale Jenkins.

**New Certified Professional Geologists**

**MI-Curtis, Loren J.**
CPO-10392

**MI-Daigle, James A.**
CPO-10374

**TX-Dromana, Sharma V.**
CPO-10387

**AK-Daigle, James A.**
CPO-10374

**NY-Kaczor, Peter J.**
CFC-0162

**NY-Kesl, Amanda J.**
MEM-0017

**NY-Khan, Arif J.**
MEM-0016

**NY-Lennon, Daniel W.**
MEM-0015

**NY-Williams, Paul M.**
MEM-0014

**NY-Williams, Paul M.**
MEM-0012

**NY-Williams, Paul M.**
MEM-0010

**NY-Williams, Paul M.**
MEM-0008

**NY-Williams, Paul M.**
MEM-0006

**NY-Williams, Paul M.**
MEM-0004

**NY-Williams, Paul M.**
MEM-0002

**KY-Alida, Steven M.**

**PA-Hersey, Jonathan A.**
368 Paoli Pike, Malvern PA 19355. Sponsors: John Jengo, Suzanne Eckel.

**CT-McNally, Jeffrey N.**
94 Old Farms Ln., New Milford CT 06776. Sponsors: John Folchetti, Dale Jenkins.

**New Registered Members**

**LA-Coleman, Alecia A.**
RM-0016

**MI-Kesi, Amanda J.**
MEM-0017

**TX-Kramer, Erik L.**
MEM-0013

**MO-Taylor, Kara M.**
MEM-0018

**PA-Treschow, Steven J.**
MEM-0015

**New Candidate for Certification**

**MI-Kaczor, Peter J.**
CFC-0162

**New Student Adjuncts**

**VA-Burton, Andrew T.**
SA-0143

**VA-Mackie, Jamie A.**
SA-0140

**VA-Greenlaw, Robert H.**
SA-0138

**VA-Meridith, Scott T.**
SA-0142

**CO-Patanik, Kiran**
SA-0141

**CO-Schippe, Dawn A.**
SA-0139

**New Associate**

**TX-Jefferson, Albert D.**
AS-0006

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