Greetings from the Chair

Jim Davis, Chair, GSA Geology & Society Division

As we all know, very important geoscience-related public policy issues are being explored for implementation at many levels of governance. The “management group” of your Division is developing achievement goals for 2010 about which we intend to interact with our membership in this Newsletter and in other ways. The Division has proposed a Topical Session “Reaching New Peaks in Geoscience – Geoscience in the Service of a Sustainable Future” and a Pardee Keynote Symposium, “Public Policy 2010 – Applying Needed Geoscience Insights in Service to Society” to be considered for inclusion in the 2010 meeting in Denver.

We are considering proposing sessions in the Section meetings for 2011. We wish to increase the effectiveness of our booth activities at section meetings and our outreach to fellow members in other ways that could be enabled by improvements in our website (http://www.geosociety.org/divisions/gSoc/). Of course it is also very important to increase our Division membership as well. We are especially intent on increasing our outreach to GSA student members.

What you can do in 2010:

- Renew your Division membership or join if you are a reader who does not currently belong to this Division;
- Please join the Division when you renew your GSA 2010 membership online in the near future – or if you have already renewed go to the GSA homepage and click on “membership” and identify as a member who wishes to join a Division. The charge for Division membership is nominal.
**Greetings from the Chair (con’t)**

- Help us in our outreach to GSA members at 2010 Section meetings by volunteering to staff the booth with others during a bit of your free time at the meeting – contact Jon Goodwin at geologjon@comcast.net to volunteer.

- Checkout Policycom.net (more on this below) and let us know your comments – email me at jamesdavis93@comcast.net.

- We need volunteers to help improve our Division website; we want to make it more interactive and effective, and a more convenient tool for getting your input. E-mail me your suggestions.

- Read the next edition of this Division Newsletter to learn more about Division plans for 2010 as background for your future input.

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**DG&S Developments in 2009: Clarification of Division Responsibilities**

**Jim Davis, Division Chair**

As requested by the GSA Council, the Division of Geology & Society, the Geology and Public Policy Committee (GPPC) and the Director of Geoscience Policy developed a joint statement of their responsibilities in achieving the GSA’s Mission-related goal to “promote geoscience in service to society”.

The Council adopted the joint statement in midyear 2009. In accord with the joint statement, our Division continues to provide and support the membership’s consideration of geoscience topics needed in public policy by sponsoring sessions at Section meetings and the Society annual meetings. In addition, we have a more explicit role to encourage GSA members to dialog with policy makers on pending issues. This is accomplished by (1) cosponsoring a booth with the GPPC at these meetings in order to interact with members on policy issues, (2) presenting papers on important issues at the meetings and (3) stimulating discussion among members about important policies that can better achieve their intended purposes using geoscience insights. These efforts are complementary to the GPPC’s primary roles of providing geoscience insights for use in public policies by proposing topics for GSA Position Statements to the Council and, with Council’s concurrence, working to establish expert panels and overseeing the drafting of Position Statements for adoption by the Council. The GSA Director of Geoscience Policy, Craig Schiffries, has many responsibilities to advance geosciences in public policy from the GSA office in Washington D.C. The Director interacts with GPPC and the Division officers directly on many public policy issues that interface with the responsibilities of the Division and the GPPC. Please visit the GSA Public Policy web pages and the Division and Committee web pages for more information about responsibilities and activities. Also, please be sure to read Craig Schiffries’ superb article below on the interplay between our Division, GPC, and the Washington office.

**2009 Division Accomplishments**

Like all of GSA’s Divisions, the DG&S’s members have joined mainly because of their interest in the Division’s focus. This distinguishes us from the GPPC and the Director of Geoscience Policy and gives us a special responsibility for outreach to all GSA members. Jon Goodwin, DG&S Secretary/Treasurer, arranged with each
GSA section to have a joint Division/GPPC booth at each 2009 Section meeting. We recruited DG&S members attending the meetings to help staff the outreach effort. At most Section meetings we had an online laptop connection with the GSA website to introduce the new DG&S/GPPC online geoscience public policy networking site, **GSA Policycomnet**. We also distributed brochures about the site as well as making visitors aware of GSA’s Position Statements and providing copies of the statements to visitors. This is a good beginning and it follows on initial Division booth efforts in 2008. We are learning from this experience about how to make this booth effort an increasingly effective outreach tool. **Policycomnet** was launched in March 2008 in time for introduction at the Section meetings. It was set up by GSA staff in association with Division and GPPC representatives in order to facilitate networking by GSA members seeking to develop strategies for providing geoscience input to policymakers on pending policy issues of their choice. It is not a social network or a blogging site. It is particularly suited to membership interaction on pending regional, state or local issues. Members who have identified a pending policy decision can make a posting on a specific GSA Section’s page of the site. Although our Division is active in national issues, GSA members who also wish to provide input on national issues are encouraged to contact Craig Schiffries at the GSA DC office for updates on the topic and advice.

The last edition of our 2009 Newsletter described **Policycomnet**. The site is hosted by Wikidotcom at no cost to GSA and site participants will not receive unsolicited email messages or have their email addresses transferred to any other parties. The use of the site is still in its early stage. To learn more about the site visit it’s URL at [http://policycomnet.wikidot.com](http://policycomnet.wikidot.com). The site includes a page for visitors who wish to join. You can make an email request to join without charge, obligation or risk to the security for your account.

**PORTLAND DG&S HIGHLIGHTS**

Division representatives teaming with co-authors in the GPPC gave two papers at the 2009 annual meeting in Portland. I presented “Introducing Policycomnet as a Geoscience Networking Site to Assist GSA Members Effectively Communicate with Policy Makers” at the session titled **Ensuring Geologic Controversies Are Addressed with Good Science in the Classroom, the Community and the Capitol**. Additionally I presented “Communicating Climate Change to Policymakers” at the session titled **The Role of Earth Scientists and the Public in Complex Climate and Energy Issues**. In addition to colleagues from the Division and the GPPC, this paper was also coauthored by Craig Schiffries. The papers were delivered and well received in well-attended sessions. The Division’s Distinguished Speaker, Patricia Woertz, the CEO of Archer Daniels Midland Company, delivered the first of the GSA Lunchtime Keynote Lectures on October 18, speaking on ADM’s private-public partnership with the U.S. Department of Energy and the Midwest Geological Sequestration Consortium in sequestering greenhouse gases. The Division also helped arrange another GSA Lunchtime Keynote session in which Lucy Jones of the USGS described the Great Southern California ShakeOut – an experiment on earthquake risk communication. Both presentations were well attended and included spirited question/answer sessions.

**DIVISION STUDENT AWARDS**

The Division awards a plaque and a check to the best paper presented by a student among papers in Technical Sessions that the Division has either sponsored or cosponsored at each annual meeting. The Awards are presented at the Division’s Membership Meeting held at the next GSA Annual Meeting. In 2009 the Division gave two 2008 Student Best Paper Awards for papers judged to be equally outstanding. The judging at the 2008 annual meeting in Houston was done by Rex Buchanan. Rex
also arranged for impartial in-person reviews by GSA members who are specialists in the relevant topic to take place for all eligible student papers delivered. Andrew T. Leaf, a student of the University of Wisconsin-Madison received the 2008 Award for his paper entitled “Water quality changes during aquifer storage recovery in the Cambro-Ordovician aquifer, Oak Creek, WI”. Philip J. Stokes, a student at the University of Arizona in Tempe, received his award for his paper entitled “Spreading roots: The goals and challenges of establishing a self-sustaining diversity program in southern Arizona”.

DIVERSITY IN THE GEO SCIENCES: NATIONAL POLICIES TO LOCAL OPPORTUNITIES

Philip J. Stokes, 2009
Univ. of Arizona in Tempe
2008 Student Best Paper Award

Diversity can have many meanings. There’s biodiversity, financial diversification, and even culinary diversity. Beginning in the second half of the 20th century, workplace diversity became a central issue to gender equality. Today, diversity in the workplace is signified by the inclusion of racial and ethnic minorities in numbers relative to those found in the general population.

To the National Science Foundation (NSF), enhancing diversity means increasing the number of traditionally underrepresented students in Science, Technology, Engineering, and Math (STEM) fields. NSF especially seeks to increase the participation of Hispanic, African American, and Native American students in the STEM fields.

Diversity seems to fail in the geosciences most of all, where less than 7% of Bachelor’s degrees are awarded to traditionally underrepresented students nationally. NSF recognizes that diversity benefits the academic development of all students as it helps to foster cultural awareness. Similarly, a diverse workplace reduces discrimination, improves decision making, and fosters long term employee retention.

In the fall of 2009, NSF identified the need to diversify the geosciences and funded creation of the Southern Arizona Geosciences Union for Academics, Research, and Outreach (SAGUARO). SAGUARO represents our local effort to recruit and retain minority geoscience students.

One of the main issues that NSF considered while soliciting proposals for diversity programs centered on how to continue to broaden participation after a grant has terminated. At the 2008 Geological Society of America meeting in Houston, Texas, I highlighted the need for a support network for underrepresented undergrads. A major point of the presentation was that minority students in science programs tend to feel isolated and often self-identified as being different from their peers based on race or ethnicity. SAGUARO seeks to eliminate the tendency for minority students to feel like the “only ones” in the geosciences.

SAGUARO internships provide underrepresented students with funding for research projects, community outreach, and academic support. Most of our budget is geared towards exposing students to the scientific experience on- and off-campus. Interns benefit from lab and field training, student desk space, academic advisement, mentoring, travel to conferences, and field trips. Moreover, SAGUARO interns are “networking hubs” for local high school students and vocal advocates for opportunities in the earth and environmental sciences at UA.

At present, we have plans for several field trips in 2010, including: 1) assessing local caves for the impact of climate on hydrologic processes; 2) understanding the geology of the Colorado Plateau as it pertains to energy resources, depositional
environments, and salt tectonism; and 3) geotouring the Rocky Mountains as part of a larger trip to attend the 2010 Geological Society of America conference in Denver, Colorado.

We constantly strive to create as many local opportunities for geoscience outreach as possible. On November 21, 2009, SAGUARO teamed with the UA Geosciences Department and the Arizona Mathematics, Science Achievement (MESA) program to present a Saturday Science Academy on the University of Arizona campus. Over 150 Tucson-area parents, teachers, and middle and high school students participated in the event.

So, what’s next for the SAGUARO program? Our first intern has already begun a research project and will be working on environmental issues related to La Cienega de Santa Clara on the Colorado River delta. Our other five interns will hopefully find research areas which appeal to their interests and career goals in the upcoming months. We’ve got plans for local and regional field trips, outreach to local schools and colleges, and research into ways to better understand how to diversify the geosciences. It is our goal to vastly improve on both the numbers of underrepresented students graduating with geosciences degrees and the numbers of qualified underrepresented students entering careers in the geosciences. So far, so good!

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WATER QUALITY CHANGES DURING AQUIFER STORAGE RECOVERY IN THE CAMBRO-ORDOVICIAN AQUIFER, OAK CREEK, WI

Andrew Leaf, 2009
U. Wisconsin-Madison
2008 Student Best Paper Award

At the annual GSA meeting in Portland, I showed a series of down-hole temperature profiles collected (using Distributed Fiber-Optic Temperature Sensing, or DTS) at the Oak Creek Aquifer Storage and Recovery (ASR) site. The profiles suggested that the repeated injection of Lake Michigan water into the deep aquifer at this site has caused a zone of cooling near the ASR well (even with a greater than 100% volumetric recovery of the water). In addition, inflections in these profiles further suggested specific stratigraphic zones that have accepted the most lake water. Since last fall, I’ve been working on simulating a "thermal history" of the Oak Creek ASR site, using a numerical groundwater flow/heat transport model. The modeling results so far support both the hypothesis of residual cooling and that the temperature inflections represent stratigraphic zones of higher permeability.

This information suggests that DTS could have broader applications as a tool to gain information about hydrostratigraphic heterogeneity, something that has long posed a fundamental challenge in hydrogeology. Over the next few months, as part of a grant that is funding my last year of graduate school, I (along with Jean Bahr and Dave Hart at the Wisconsin Geological and Natural History Survey) plan to investigate the use of DTS for this purpose, using wells in the Madison area. We will do this by heating the borehole water with a homemade heat-exchanger system connected to a low-flow sampling pump. We will then monitor the evolving temperatures with our cable. Scott Tyler (University of Nevada-Reno), who I fortuitously met at the Houston meeting, has generously agreed to loan us one of his DTS instruments. The results of this study will contribute to our understanding of hydrostratigraphy in the Madison area, with implications for protecting both water supply and quality.

I plan to finish my master's in June, and will soon be looking for jobs. I'm not sure yet as to how these topics will pan out in my professional life. Certainly DTS holds a lot of potential as a tool for understanding heterogeneity. However, it seems like its environmental applications to date have mostly been in the academic realm. I think
ASR could become increasingly important as many communities (especially those dependent on snow packs) seek to mitigate the effects of climate change on their water supplies.

GEOLGY AND PUBLIC POLICY AT NORTH-CENTRAL/SOUTH-CENTRAL MEETING IN BRANSON

Rex Buchanan, Kansas Geological Survey

Geology and public policy issues are well-represented in the program for the 2010 joint meeting of the south-central and north-central sections of GSA in Branson, Missouri, in early April.

One of the meeting’s featured events is a forum on Reclamation in the Tri-State Lead-Zinc Mining District, co-sponsored by the Geology and Public Policy Committee and the Geology and Society Division. The forum features presentations by staff from the Missouri Division of Geology and Land Survey, the Environmental Protection Agency, and a local environmental group. In particular, the forum will focus on the role that boundaries (political, natural, and cultural) play in the creation and remediation of environmental problems.

The technical program offers all sorts of connections between geology and public policy. Sessions are planned on medical geology, carbon dioxide sequestration, the Tri-State Mining District, teaching sustainability, water resources in the Ozarks, aquifer management challenges in the mid-continent, and remediation of unconsolidated aquifers.

The meeting location provides excellent opportunities to look at these issues on the ground, as well. There’s a pre-meeting field trip to examine mining issues along old Route 66 in the Tri-State area, and a post-meeting trip to look at the failure of the dam at Taum Sauk Reservoir.

All of this combines to make Branson a good place to connect geology and public policy. For more information, head to the GSA website (or go to http://www.geosociety.org/sectdiv/Northe/2010mtg/). Abstracts are due on January 19, 2010. The early registration deadline is March 8. Meeting co-chairs are Marcia Schulmeister, at Emporia State University, and Tom Plymate, Missouri State University.

GEOLGY AND PUBLIC POLICY COMMITTEE UPDATE

Rex Buchanan, Kansas Geological Survey

At GSA’s 2009 annual meeting in Portland, Oregon, the Geology and Public Policy Committee (GPPC) continued its work to articulate the positions GSA takes on various public issues. Probably the most notable was a revised position statement on climate change, written by a panel headed by Bill Ruddiman at the University of Virginia. The GPPC unanimously approved the new statement with minor revisions, then forwarded it to GSA Council for final action. Because of the variety of strong opinions about climate change, GPPC members spent considerable time analyzing member input and discussing the document. Moving it from the panel to the Council, by unanimous vote, was a major accomplishment.

Other actions at the Portland meeting included approval of a draft position statement on diversity that now goes to GSA members for comment, and progress on position statements on teaching earth sciences in schools, earth science literacy, coastal processes, and geoheritage sites. In addition, the GPPC recommended to Council that GSA endorse an AGU/SSA statement on monitoring the comprehensive nuclear waste ban treaty. Council agreed and endorsed the statement.

A number of G&S Division members are instrumental in GPPC accomplishments. Dick Berg, former newsletter editor, is the former chair of GPPC, and still active as the past chair and north-central section representative. Jim Davis, current chair of the G&S Division, has worked hard to develop new ways of making statements
more effective. Wendi Williams, who represents the south-central section of GSA, has been active, particularly in education issues. Rob McDowell, the new newsletter editor, is a new member-at-large on the committee. The GPPC and G&S Division again operated exhibit booths side-by-side at the annual meeting, reinforcing the connection between GPPC and G&S. In all, the synergy and connection between GPPC and G&S appears to be strong and effective, contributing in substantial ways to the public role of GSA.

ROLES OF GSA’S DIVISION OF GEOLOGY AND SOCIETY, GEOLOGY AND PUBLIC POLICY COMMITTEE, AND WASHINGTON OFFICE

Craig M. Schiffries, GSA Director for Geoscience Policy

Summary. Based on input from the management board of the Division of Geology and Society, the membership of the Geology and Public Policy Committee, and the Director for Geoscience Policy, the relative roles of the three entities can be summarized as follows:

- Created as part of GSA’s National Leadership Initiative, GSA’s Washington Office marshals geoscience expertise for effective communications with policy makers at the national level, informs the Society regarding national policy matters, and provides input to the GPPC and the DG&S. Primary roles of Geology and Public Policy Committee are to oversee development of GSA Position Statements and to provide advice to GSA Council and the Washington office. A primary role of the Division of Geology and Society is to facilitate communication among the membership, the formal leadership structure and staff of the GSA, and the public on public policy issues where the geosciences are relevant to the decision-making process. To accomplish its role, the Division organizes sessions (with assistance from the GPPC) at GSA annual and sectional meetings, maintains the student award competition, and coordinates communications on policy issues at the local, state, and regional level with the aid of internet tools, such as PolicyComNet.

Evolving Roles and Responsibilities. The roles and responsibilities of the three entities have evolved since the Division of Geology and Society was established in 2004 and the Washington Office was established in 2007. As a matter of practice, the primary roles of each entity have evolved as follows:

Division of Geology and Society

- A primary role of the Division is to encourage and facilitate geoscience communications and outreach – based on GSA Position Statements – by GSA members to local, state and regional policy makers.
  - The Division uses a variety of methods and tools (e.g., PolicyComNet) to assist GSA members in dialoging about policy input on specific pending policy decisions, and planning successful communication strategies to policy makers.
  - The Division plans to help GPPC evaluate the effectiveness of Position Statements after they are released. Internet tools (e.g., PolicyComNet) may be used to facilitate feedback from GSA members.
- The Division provides policy outreach to GSA members by arranging exhibition booths at GSA annual and section meetings with assistance from GPPC section representatives.
- The Division provides policy outreach to GSA members by organizing public policy sessions at GSA annual and section meetings with assistance from GPPC section representatives and through the Division Newsletter.
• The Division confers student awards for papers on geology and public policy.
• The Division keeps GPPC and the Director for Geoscience Policy informed of all of its activities through the DG&S representative on GPPC.

Geology and Public Policy Committee
• A primary role of the Committee is to oversee the development of GSA Position Statements. These statements are the foundation for public policy actions by the Society.
• A primary role of the Committee is to advise GSA Council, leadership, and the Washington office.
• The Committee cosponsors public policy sessions and exhibition booths with the Division of Geology and Society at GSA annual and section meetings.
• The Committee collaborates with the Division of Geology and Society on GSA member participation in public policy communications.
• The roles of the GPPC section representatives should be revised to reflect the current practice of the Division of Geology and Society in having a lead responsibility for organizing public policy sessions and exhibition booths at GSA section meetings. In a complementary effort, the GPPC section representatives should foster two-way communications about GSA public policy activities at section meetings.
• In accordance with international goals and objectives of GSA’s new strategic plan, GPPC will explore opportunities for expanding international activities at the interface between geoscience and public policy by working with the with GSA’s International Secretariat, International Secretary, International Section, Director for Geoscience Policy, and other organizational units.
  ▪ GPPC recommends adding an International Section representative as a 17th voting member of the committee. GPPC recommends that the International Section should nominate non-U.S. residents for this position.
• The committee recommends that non-U.S. residents should also be appointed as at-large members of GPPC.

Washington Office
• The overarching goal of the Washington office is to provide GSA and its members with leadership in public policy through active involvement in decision-making and implementation processes at the national level. The office fulfills this goal through four major areas of activity:
  ▪ Monitoring public policy issues and participating in information-sharing and educational efforts directed toward the legislative and executive branches of government;
  ▪ Working with the GSA community to increase member involvement in public policy-related activities:
  ▪ Supporting adequate funding for science at the federal level; and
  ▪ Encouraging and improving the use of scientific information in decision making in the public policy arena.
  ▪ In accordance with international goals and objectives of GSA’s new strategic plan, the Director for Geoscience Policy will explore opportunities for expanding international activities at the interface between geoscience and public policy by working with the with GSA’s International Secretariat, International Secretary, International Section, GPPC, and other organizational units.

Conclusion. The three entities are evolving such that they have largely complementary roles and responsibilities. Each entity has unique roles. For example, the Geology and Public Policy Committee is uniquely
responsible for overseeing the development of GSA Position Statements, which are the foundation for public policy actions by the Society. The Division of Geology and Society plays the lead role in fostering communication of geology and public policy issues at the local, state, and regional level and for organizing public policy sessions and exhibition booths at GSA section and annual meetings. The Washington office is charged to focus on the national level; it is an advocate for and a liaison between the GSA community and Congress, the White House, and federal agencies.

Given the evolution of the three entities, we plan for each entity to review and update their charge, mission statement, or statement of purpose so they are in accordance with current practice. The growth and evolution of three entities within GSA that address geology and public policy may give rise to real and perceived gaps and overlaps. Institutional mechanisms, such as cross representation on GPPC, have been designed to minimize gaps and overlaps among the three entities. By working collaboratively, these three entities will help GSA fulfill its mission of “…promoting the geosciences in the service to humankind and stewardship of the Earth.”

I recently told a group of young Congressional staffers that, when it comes to environment and resource issues, we are now in a period of permanent crisis. (I used the example of a person aging, where the occasional broken wrist or stitched-up gash of youth morphs into constant cholesterol and blood pressure management, accompanied by a steady regimen of aches). Every region of the country is facing an Earth resource issue of some kind or another, and Earth scientists are the specialists who can help frame the discussions and find the solutions.

Therefore, I’m sure it will not be difficult for Division members (and others) to look around their communities and come up with examples of where geology and society intersect. Topics could be as diverse as soil, tar sands, seismic hazards, groundwater, teaching evolution, GIS, elections, or endangered species. In other words, there is no shortage of topics for you to submit to your DG&S Newsletter.

Therefore, I very much look forward to editing this newsletter. And I especially look forward to reading, and learning from, your eager and frequent submissions. Don’t be shy!

MESSAGE FROM THE EDITOR

Rob McDowell, Univ. of Georgia

Last year I volunteered to serve as editor of the DG&S Newsletter. Or perhaps more correctly, I was volunteered. I am proud to be serving GSA and the Division in this capacity, and as a member-at-large of the Geology and Public Policy Committee. Now more than ever, as climate change looms and overshadows critical energy and water issues, geoscientists need to be clearly visible and available to policy makers. I’m happy to be doing something to help make this happen, however small.
want to serve in such a capacity are urged to put your name forward, as outlined below, for consideration as a nominee. To be eligible for consideration, you must be a member of the G&S Division. The person elected to the office of Second Vice-Chair will serve a one-year term starting at the close of the annual business meeting of the Division in Denver, Colorado, in late October/early November, 2010. This person will progress annually to the offices of First Vice-Chair, Chair and Past-Chair during the following three years.

Those wishing to nominate themselves should send their resume and a brief statement of their goals in serving the Division to the Chair of the Nominating Committee, Thomas J. Evans, at tevans@wisc.edu. Alternatively, any four members of the Division may nominate another Division member whom they believe to be a worthy candidate by submitting the same information to the Chair of the Nominating Committee, along with the signatures and member numbers of the nominators. Nominations will close on April 15, 2010.

An online election of the G&S Division Second-Vice Chair will be held in June. Supplemental paper balloting for division members requesting it will also be made available at that time. More information about the Geology and Society Division is available at http://www.geosociety.org/sectdiv/gSoc/.

The Nominating Committee, which currently includes Thomas J. Evans (Wisconsin Geological and Natural History Survey), Rex Buchanan (Kansas Geological Survey), and Marilyn Suiter (National Science Foundation) will screen the nominations and select the candidates to be placed on the ballot. Geographic distribution of current members of the Management Board and considerations for diversity will be a part of the selection process for candidates.

Please seriously consider this opportunity to give back to GSA and the Division.