Illinois hosts annual regional meeting of the Geological Society of America

The Geological Society of America’s North-Central Section held its 33rd annual meeting this April in Urbana-Champaign. Hosted by the ISGS, UIUC Department of Geology, and the USGS Water Resources Division’s Illinois office at Urbana, the conference drew over 650 students and professional geologists from across the country.

Participants presented talks and posters that unveiled new research results, discussed common problems, and caught up on the activities of regional geologists. Nearly 350 papers and posters were presented, six field trips sent the geologists out over Illinois, and several workshops and exhibits were offered. The annual address was presented by Dr. Charles “Chip” Groat, Director of the USGS.

About 70 members of the ISGS staff presented papers and posters, presided in technical sessions, held workshops for professionals and geological educators, led field trips, and worked behind the scenes to run the conference.

Chief Bill Shilts congratulated the staff that worked on making the GSA meeting “such an outstanding success. I received a tremendous number of compliments on the event.... I heard favorable reports about our (ISGS) program from scores of people.”

USGS Director: The next great challenge

In his address to the earth scientists assembled in Champaign, USGS Director Charles “Chip” Groat praised the geological mapping programs that are becoming a major focus of the profession. Noting in particular the state and federal surveys’ cooperative development of the Central Great Lakes Geologic Mapping Coalition, he said it “has shown how well this works when we work together. We have developed a great relationship between the states and the federal level. This is how it should work.”

He urged the earth science community to build on this experience and to think big about future projects. One such project he proposed is a national monitoring and warning system for natural hazards. “A real-time natural hazards warning system has the opportunity for large-scale success. Timely warnings of hazards would avoid or minimize the impact of natural disasters.

“This is a strong candidate for a major new national scientific initiative. The constituency would be strong, and it goes hand in hand with geomapping.

“The technology exists to do it. We already have monitoring networks in place, but they are old, inadequate, and at risk along several fronts. With the higher demand and impact on water with development, we need more stream gauges. But we are losing stream monitoring capacity. We need a national system.”

“The seismic network is also old. By upgrading we could have the ability to shut down pipelines more quickly, for instance. A few minutes of advance warning could make a great deal of difference.”
Conventioneers hanging around a hotel clad in hardhats and hiking boots and carrying rock hammers are probably geologists itching to get out into the field.

Some 200 visiting earth scientists followed several ISGS scientists out across the state to explore some of the interesting geological features Illinois has to offer.

Ardith Hansel, Dick Berg, and Drew Phillips led a trip through east-central Illinois, where geologists could see landforms, paleosols, glacial sediments, a 20,000-year-old forest bed, and the Tuscola and Charleston quarries.

Sam Panno and Pius Weibel conducted a two-day expedition to the karst region of southwestern Illinois and southeastern Missouri. Don Mikulic and Joanne Kluessendorf (UIUC Dept. of Geology) led geologists to three limestone quarries to explore the classic Silurian reefs of the Chicago area.

Zak Lasemi, Rod Norby, Joe Devera, Hannes Leetarau, and Brett Denny led a group to the classic limestone outcrops of the metro east St. Louis area. Brandon Curry and David Grimley took a group to the exurban areas of Kane County to examine the climatic history and glacial geology of northern Illinois.

And John Nelson and John McBride led a trip that presented new discoveries about the tectonic history of southern Illinois.

Earth scientists from across the U.S. and Canada praised the field trips ISGS scientists organized.

Excellent
One student from Michigan said, "I was impressed by the serious commitment to studying and interpreting glacial deposits. It was great to be able to see, touch, and feel what you'd been reading about in books."

Good experience
Another student had been looking forward to seeing the paleosols (ancient buried soils), features she'd only read about. She said having ISGS geologists at hand to explain the features of the soils "taught me more about soils at one stop than two days of classes. That's the plus of the field trip. Now I'll always remember it."

Well led
Holly Jones, from the Indiana Geological Survey, made a geologist's joke in describing the advantages of going on these trips: "The whole point is to see it face to facies."

Holly said these meetings are a good place to touch bases and share ideas and theories with other geologists. "I gain a lot by talking to well-seasoned geologists," who still have that 'twinkle in their eye' of enthusiasm for their subject. The ISGS meeting and field trip guidebooks "set a high standard," she said.

Michel Lamothe, geology professor at the University of Quebec, said the field trip to eastern Illinois was "very well organized. I give it an A plus."

Lamothe had read about Illinois glacial stratigraphy from several classic ISGS publications, but the field trip allowed him to see it up close for the first time. "There is a major difference in knowing about all the stratigraphy and really knowing it. Seeing it in situ is much more vivid. You don't forget it anymore. The ISGS is like a star in the list of surveys. It has a strong commitment to the Quaternary because the needs are there."
Earth Scientists urged—
Help society avoid the ignorance tax

"I was alarmed at the lack of basic information on geology," is how a teacher described his first encounter with people taking an adult education class on local geology.

"In our first meetings with new legislators, they didn't know what the USGS is or what it does," a member of the GSA committee on Geology and Public Policy reported.

"Geology doesn't have an image problem, it doesn't have an image."

Such comments came from participants in "Outreach—A Necessity for Our Profession," a symposium the National Association of Geoscience Teachers conducted at the North-Central GSA meeting in Champaign.

With the increasing importance of geology for environmental, economic development, and land-use issues, much of the meeting was devoted to public policy and how to educate the public about the importance of earth sciences to these issues.

Several speakers noted that because geoscientists have not been adequately involved in the land-use decision-making process, unforeseen pollution problems and costs have been the result.

Geoscientists must reach out to school boards, city councils, planning commissions, and similar bodies to "help citizens avoid the 'ignorance tax' of geologically poor land-use decisions," said Sherman Lundy from Burlington (Iowa) High School.

The consensus of the symposium was: relate geology to real people and problems. Work to overcome the institutional and other forces that tend to isolate scientists. Several speakers hit upon the theme that geologists need more contact with the rest of society, especially K-12 school children. University earth scientists were particularly urged to get involved in community education and public policy planning.

NASA presents teacher workshops

About 60 Illinois school teachers attended NASA-sponsored workshops on innovative ways to teach geology that were presented at the GSA meeting. Cass Coombs, a geology professor in South Carolina and workshop leader, wore a T-shirt explaining the NASA connection: "When one planet simply isn't enough."

The program demonstrated how information NASA has gathered about other planets and the moon can be creatively used to explore geologic principles with schoolchildren. For instance, the Martian channels can be used to show how geologic evidence is used to consider whether the channels are the result of fluvial erosion, catastrophic flooding, or even glaciers. Other topics that might be approached from an interplanetary perspective include vulcanism and tectonics.

Coombs also led participants through hands-on teaching methods. One entertaining project demonstrated the complexities of deposition, and the process of geologic interpretation and mapping, in a way that would appeal to students.

Students make baking soda and vinegar "volcanos," then outline the subsequent "lava" flow. Colored modeling clay is then placed into an outline of the flow to simulate the deposition from that eruption. After several eruptions, numerous layers of deposition, each in different colored clay, overlap and underlie each other.

Student "geologists" are then issued plastic straws as drill rigs. Drill cores of modeling clay are then used to interpret and map the geology. The teachers were enthusiastic about the project demonstrations, and many plan to use them in their earth science classes.

ISGS education program addresses new Illinois learning standards

In July 1997, new science learning standards went into effect in Illinois. These now include earth sciences. To facilitate this program, the ISGS Near and Far Science Program has been collaborating with science teachers and the Illinois State Board of Education to develop workshops for K-12 teachers, as well as curriculum materials teachers can use to demonstrate fundamentals of earth science.
Geologists of the future interact with the profession at conference

USGS Director Chip Groat noted the large contingent of undergraduate and graduate students presenting research at the NCGSA conference and complimented them on the quality of the work. "I sometimes have wondered where the next generation of earth scientists will come from, but after seeing the fine work being done here, I know I have nothing to worry about."

A significant part of the meeting was devoted to fostering the careers of the next generation of geologists through workshops and showcasing student work in poster sessions. Approximately 250 grad and undergrad students attended the conference and about 150 presented posters.

Polly Mitchell, an undergraduate student in geology at Indiana University-Northwest, said preparing her poster session for her first GSA meeting helped her decide to go on to graduate school in geology. "This is my passion," she said. "I've waited a long time to study this."

Exposing one's work to the criticism of much more experienced colleagues can be unnerving, and Polly said that while at her poster display, "I got stopped up one time, and had to say I didn't know." Answering questions is tough, but "it taught me to be more thorough, especially on maps." She also noted other benefits, such as when one geologist stopped by who was doing the same kind of work and made suggestions that promised an improved map.

Todd Wallbom, a Michigan State University graduate student in geology who presented a mapping poster, said he particularly likes the poster sessions because, "there's more feedback, and people have time to look at your work and discuss aspects of it. I asked just as many questions of other geologists as they asked of me...It helps my research by learning what other people have done and their observations."

Wallbom summed up the student response to the meeting by saying, "It was definitely beneficial. It made a strong impact. It helps to learn what other people have done and get their observations, and it's easier to get other geologists' perspectives by talking to them, instead of only reading journal articles."