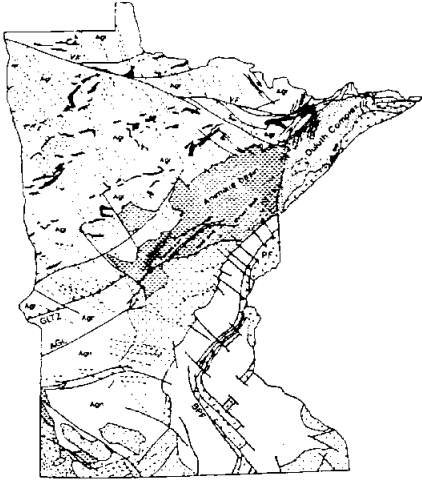


FALL BANQUET GSM BOARD ELECTION

September 26, 2005



GEOLOGICAL SOCIETY OF MINNESOTA NEWS

FALL 2005
VOLUME LIX NO. 3
<http://www.gsmn.org>

Annual Fall Meeting
Sept. 26, 2005

Grand City Buffet

9812 Hwy 7

St. Louis Park

5:00 pm – Dinner

7:00 pm – Meeting/Program

The GSM's annual Fall Banquet is set for the last Monday in September and will feature the election of new board members and a presentation of the summer field trip to the **South Dakota Badlands** (and more). Dinner begins around 5 pm or whenever you choose to get there. The official business meeting will begin at 7 pm.

The **Nominations** Committee has proposed the names of Sandy Steffner and Ed Steffner for two seats coming open on the GSM Board of Directors in 2006. Ted Chura and Paul Martin are completing their service on the board. The nominating committee consisted of Judy Hamilton, Bill Robbins, and Diane Lentsch.

GSM Member and retired U of M professor Robert Sloan will be at the meeting, and will bring along a supply of his new book "**Minnesota Fossils and Fossiliferous Rocks**" for interested members to purchase. The price is \$25.00. Be sure to ask him to autograph your copy. If you would like to see the book prior to the Fall Banquet, we will have a copy on display at the State Fair Booth. Check it out when you are at the fair!

STATE FAIR BOOTH HAS NEW LOOK

The State Fair Booth has new and smaller rocks on display this year. Some of the items that were on the table for display in previous years, are gone. Some new things have been added. Many new books have been added to the Reference book section, and some of the older, worn books have been removed. There are new magnifying glasses, new magnets, new charts for identifying the rocks, and a clean, new Rock Box. Most of the giant boulders formerly on display have been replaced with smaller, more manageable versions. And many more Minnesota rocks have been added to the collection. Rocks unique to our state, but previously not on the table are now on display: Pipestone, Mary Ellen Jasper, Anorthosite, Sacred Heart Granite, and more.

We hope that when you take your turn working at the State Fair Booth, you will like the changes we made. Look through the new books, and if questions come up, you may be able to find the answers in these new resources. As always, recommend to visitors that they attend our Lecture Series to learn more, and hopefully join our group.

~State Fair Committee

Announcements

August 21 – Walking Tour of St. Paul

August 25 – State Fair starts

September 26 – Fall Banquet

October 10 – First Lecture of 2005-2006

November 1 – Deadline for the next newsletter
Submissions

WANTED: Someone to learn the newsletter
job, with the intent of eventually becoming
Editor. Contact Katy (below).

GSM NEWS

Editor: Katy Paul
952-829-7807

The purpose of this newsletter is to inform members and friends of the activities of the Geological Society of Minnesota. *GSM NEWS* is published four times a year: February 15, May 15, August 15, and November 15. *GSM NEWS* welcomes unsolicited Geology and Earth Science related articles and photographs. Deadline for article submission is three weeks before the date of publication Contact the editor if you have anything to submit.

OFFICERS:

Roger Benepe, *President*;
Janet Hopper, *Vice President*;
Ted Chura, *Treasurer*;
Dorothy Kuether, *Secretary*.

Directors in addition to the officers listed above: Cindy Demers; Bill Farquaher; Kate Hintz; Paul Martin, Gerald Paul.

Send all GSM membership dues, change of address cards, and renewals to the GSM Membership Chair: Gail Marshall, 12232 Allen Drive, Burnsville, MN 55337; phone: (952) 894-2961

Membership levels are:
\$10 Full-Time Students;
\$20 Individuals,
\$30 Families

President's Letter...

Well the summer is going fast, and the State Fair will soon be upon us. For those of you that signed up to work the booth, Bravo! See you there!

The long field trip out West was a success. If you were unable to take that much time off, there are other opportunities coming up. On Aug 21st there will be a walking tour of St. Paul. Just meet at the Science Museum and be ready to stroll around downtown, and learn some great History and Geology.

The Fall Lecture line up is fantastic. Just some of the topics for the up coming year are Tsunami's, the Galapagos Islands, the Alps, Earthquakes and many more.

The room for the Fall Lecture will be the same as last year, as of right now, but that could change when school starts in the fall. Check on our Web site for the latest information. Also there will be signs up telling you what room we are in for the fall.

We are still in need of some new board members, and a treasurer. If you are interested please contact myself or Bill Robbins. The confirmation hearings will be a cake walk.

Have fun with the rest of the summer and I will see you at the lectures.

Roger Benepe
President

The role of earth science in society

Harvey Thorleifson, Director- Minnesota Geological Survey

Scope of our contribution: Earth scientists are contributing to an ever-widening list of issues that relate to ensuring the well being of society as a whole. We help ensure health by addressing toxic substances and waste disposal, and we secure our heritage by providing an understanding of our land, our oceans, the history of life, and a comprehension of our planet. We enhance our wealth by ensuring a supply of energy and materials, and by guiding construction. We augment our security by helping society prepare for and cope with climate change and hazards. And we have broad contributions to make to the study of water, which more than any other topic comprehensively dictates our well-being, whether health, heritage, wealth, or security. These contributions are critically important and diverse, as can be seen from the following summary -

Climate change: Due to the progress of or potential for carbon-dioxide-induced climate change, we require insights into how the global climate system works, so that linkages are better understood, and scenarios for what can occur are outlined. This requires insight into the carbon cycle as well as better knowledge of climate trends and events throughout earth history. Consideration of the impacts that climate change may have, their prevention, and how we can adapt to these changes requires work on topics such as groundwater recharge, while geoscience is a key to carbon sequestration

Guiding construction: Civil engineering requires knowledge of the substrate to support excavation, drainage, and supply of materials. Geological knowledge is critical to keeping costs down and ensuring good design, while geologic mapping is needed for topics such as septic field installation, and facilitating groundwater recharge in developed regions

Understanding our planet: Geological sciences allow us to understand our planet as a whole. As our perturbations and vulnerability intensify, there is an ever more urgent need for us to understand the interactions and evolution of atmosphere, biota, oceans, freshwater, glaciers, soil, volcanoes, sediment, and rock

Ensuring our energy supply: The search for energy resources has been at the forefront of geology since the inception of our field, when coal was the primary target, and this focus continues today in the search for oil and gas, as well as energy sources such as uranium, gas hydrates, and geothermal resources

Optimizing our food supply: The composition and structure of soil are keys to food supply, while soil mapping also is a key to groundwater protection, tracing toxic elements, and carbon budgets. As our clients adopt GIS resources and apply our mapping to land use regulation, guidance on integrated use of soil maps and geological maps is needed

Preparing for hazards: As our insights intensify, and as population and vulnerable infrastructure increase, geoscientists are increasingly being called upon to help defend society from natural phenomena that cause injury, suffering, and financial damage. Catastrophic threats include earthquakes, tsunamis, landslides, floods, volcanoes, windstorms, extreme precipitation, magnetic storms, avalanches, and impacts, while chronic hazards include shoreline erosion, wind erosion, and permafrost degradation. We augment local knowledge on how these processes work, we outline events prior to recorded observations, and we assess changing risk. Much more can be done in geoscience research, training, and awareness regarding hazards.

Stewardship of our landmass: Our nation consists of a people, and we also consist of a landmass. We know and understand this landmass primarily on the basis of the knowledge accumulated by people who have lived on the land. And geoscientists contribute immensely to this knowledge. In many regions, our activity in working out regional geology is one of the only ways that we occupy the land

Understanding the history of life: One of the most rapidly expanding fields at present are the genetic sciences. Geoscientists contribute an understanding of this topic, by explaining how genomes came about, the timescales involved, and the processes by which biological evolution takes place. We also document past biodiversity, and explain biogeographic patterns

Obtaining the materials that we require: Mineral exploration and mapping ensure a supply of industrial minerals such as gravel and crushed stone, base metals such as copper, lead, zinc, and nickel, precious metals such as gold, silver, platinum, and palladium, and gemstones such as diamond

Exploring the offshore: Our oceans present great challenges and opportunities, while the need for offshore mapping in our large lakes is great. Oceanographic surveys linked to seafloor and sub-seafloor investigations are required to understand and manage our oceans. New technology is allowing us to map seafloor features in vastly greater detail, studies of marine habitat are linking biology and geology, while new drill ships are opening exciting new opportunities

Dealing with toxic materials: As our knowledge advances, we have a progressively lower tolerance for deleterious materials in our food and water, particularly with respect to their impact on our children. Industrial effluent that can be reduced at greater benefit to society than cost is being curtailed. Assessing options, however, requires a full knowledge of what is contamination and what is natural. And where the deleterious material is natural, such as arsenic in drinking water in many areas, a geological explanation is required. If a community is told that their drinking water is contaminated, they will blame the nearest industry until they are presented with a plausible geological explanation. This requires systematic geochemical mapping of our entire landscape, a topic that is a rapidly emerging priority

Optimizing waste disposal: Our highest priority with respect to waste disposal is to reduce our production of waste, but we are far from achieving zero waste production, and it is unclear that the cost will ever justify the benefit. We therefore will continue to discard wastes, and we have a large legacy of produced waste. A critical input to planning waste disposal is the geological integrity of the disposal site, whether for municipal garbage or high level nuclear fuel waste

Caring for our water: Earth scientists provide an understanding of the source of deleterious elements in our source water, we help protect water from contamination, we design remediation, we show how groundwater discharge governs wildlife habitat, we map and quantify the capacity and vulnerability of our groundwater systems, we help wisely utilize and manage water resources for drinking water, agriculture, industry, energy production, hydroelectric power generation, as well as shipping, and we assist public debate by comprehending water-related hazards such as flooding and shoreline erosion. The capacity of our groundwater resources – commonly our leading drinking water source - largely is unknown. Establishment of a nationwide culture of awareness regarding groundwater protection is essential

Conclusion: Earth sciences therefore are prospering as we focus our efforts on the needs of society, and as we produce what is needed in a format that can be readily used by a broad range of clients. And while doing so, we continue to take a broad approach to our work, to ensure the progress of fundamental knowledge, to facilitate serendipity, and to prepare ourselves for unanticipated requirements. By relentlessly taking this approach, and by repeatedly re-inventing ourselves, earth sciences have a secure future ■

Update on the Proposed 2-Day Field Trip to the North Shore:

Many of you had been inquiring about the proposed trip to the North Shore in July. Unfortunately this trip had to be postponed. When we began exploring the available places to stay overnight, we found that there were very few motel rooms to be had during July, and many places required a 2-night stay at minimum. Then, we thought about trying for the days just after the state fair, and before the beginning of the Fall Color season, but our leader, Professor Ojakangas was not available during that time. Now, we have the trip scheduled for May 2006, but significant planning will still have to occur before this can be confirmed. We will keep you updated with future postings in the newsletter. Sorry for any disappointment this may have caused, but we'll keep trying.

~The Field Trip Committee

MEMBERSHIP RENEWAL

Reminder... your GSM membership expires September 30th. With your support, GSM can continue to offer a fine lecture program, provide area schools with an invaluable resource through the Outreach Program, and introduce you to the pool of talented professionals in the field of geology. Fill in the form below, and mail it with your check, to Gail Marshall, Membership Chair.

Geological Society of Minnesota c/o Gail Marshall, Membership 12232 Allen Drive Burnsville, MN 55337		
Membership Renewal - October 1, 2005 to September 30, 2006		
<input type="checkbox"/> \$10 Student	<input type="checkbox"/> \$20 Individual	<input type="checkbox"/> \$30 Family
<input type="checkbox"/> \$50 Sustaining	<input type="checkbox"/> \$100 Supporting	<input type="checkbox"/> \$250+ Guarantor
NAME _____ (as you would like it to appear in the GSM Directory)		
ADDRESS _____		
PHONE (_____) _____ E-Mail _____		

URBAN FIELD TRIP

Here it is, at last. After a couple of cancellations (previous years) we now have a firm schedule for our "Walking Tour of Downtown St. Paul". You won't have far to drive, you won't need bug spray, and you certainly will NOT need your hammer! The biggest hazard you will have to watch out for is a cracked sidewalk. Bring your umbrella, just in case, and wear your most comfortable walking shoes. We won't have to find the rocks – they are already in plain sight on the buildings. Not only will we learn about the geology of the rocks, (or building stone), but some of St. Paul's history as well. To register, email or call Steve Erickson after August 15th. Cost is \$5.00 for members, \$10 for nonmembers.
sgaryerickson@aol.com, 651-501-9851.

Walking Tour of Downtown St. Paul

August 21, 2005

Meet at the Science Museum

Arrive between 11:45 – 12:15



Geological Society of MN
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Bloomington MN 55438

FIRST CLASS MAIL