



THE GEOLOGICAL SOCIETY OF MINNESOTA

News

*Volunteer
opportunities,
field trips,
lectures, and
public service,
since 1938*



From the President's Desk...

We are approaching the next academic year for GSM, and many interesting activities are in store.

When this Newsletter is delivered, many of us will just have completed the field trip to North Dakota, organized by Randy Strobel and Joanie Furlong. I'm anticipating a great trip. Over the past few years, Randy and Joanie have organized quite a few week-long field trips, including the Colorado Front Range in 2010, Mid-Continent Rift (Wisconsin & Upper Michigan) in 2011, and Mojave Preserve & Death Valley in 2013. These have all been great, well organized trips. A special thanks to Randy and Joanie for these great contributions to GSM.

Many of you also participated in one of Roger Benepé's special tours of "Ultimate Dinosaurs" at the Science Museum of Minnesota. Roger discussed far more information about the specimens on display than we could have gotten from the written material in the exhibit. Thank you for your time and expertise, Roger.

We are always looking for new field trip ideas. Is there some place of geological interest that you would like to visit, or have visited and would like to share with other members? Contact me and I'll put you in touch with someone who has experience organizing our field trips. Local field trips can be as short as a few hours, and often we can recruit a professional geologist as the technical leader.

The end of August means State Fair in Minnesota, and as GSM has done for decades, we are staffing our booth in the Education Building. Thanks to Sandy Steffner for once again organizing this major Society activity. Our booth is a significant means for recruiting new GSM members, as well as a way to educate fairgoers on GSM's activities and on Minnesota geology in general. Thanks in advance to each of you who are volunteering for a four-hour shift. Everyone is encouraged to stop by our booth and say hi while you are at the fair, especially if you have not seen our booth in past years.

Monday, September 15 marks the start of our lecture and lab series for the coming year. Once again Steve Erickson has recruited a diverse group of speakers who will present on a variety of interesting and topical subjects related to the Earth Sciences. The full schedule appears elsewhere



GSM President, Dave Wilhelm

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in this Newsletter, on our website (gsmn.org), and on printed brochures we distribute at the State Fair and local libraries. All lectures and labs are open to the general public, so feel free to invite friends to lectures that you feel might interest them. Please note that our lectures this year will start at 7:00, 30 minutes earlier than in recent years. A vote of the membership on this change was conducted in May & June; a slight majority favored this change. Since the vote was so close, I conducted a vote of our Board of Directors, which also opted for the earlier time.

Our initial lecture September 15 is also our Fall Banquet and Annual Meeting. The Fall Banquet will be held at the U Garden Restaurant, the same place that gave us great service for our Spring Banquet in May. Go to our website for specifics. Just prior to the lecture, we will conduct our Annual Meeting, during which we will nominate and elect new members to our Board of Directors, as well as vote on changes to our by-laws. (Our current by-laws are on the GSM web site at <http://gsmn.mngeology.net/content/laws>).

Finally, I'd like to invite any members who are interested to one of our Board meetings. We typically meet between 7:00 & 9:00 PM at the Minnesota Geological Survey building (2642 University Ave. W. in St. Paul). These meetings are open to all members of GSM. See our website for scheduled meeting dates. If you have a topic you would like the Board to consider, contact me about getting it on the agenda. **The next board meeting is scheduled for November 13; mark your calendar now.**

GSM President, Dave Wilhelm

GSM News

Officers:

Dave Wilhelm, President
 Sherry Keese, Treasurer
 Rebecca Galkiewicz, Secretary

Board Members: Mary Helen Inskip; Deb Preece; Ruth Jensen; John Grams; Mark Ryan; and Roger Benepe

Editors: Katy Paul; Harvey Thorleifson; Rich Lively

The Geological Society of Minnesota is a 501(c)3 nonprofit organization. The purpose of this newsletter is to inform members and friends of activities of interest to the Geological Society of Minnesota.

Send all GSM membership dues, change of address cards, and renewals to:

Joanie Furlong
 GSM Membership Chair
 P.O. Box 390555
 Edina, MN 55439-0555

Membership dues are: \$10 Full-time students; \$20 Individuals; \$30 Families

GSM News is published four times a year: **February 15, May 15, August 15, and November 15.** Deadline for article submission is the first of the month, before the date of publication.

Newsletter contributions welcomed

Of interest to our GSM enthusiasts: While out and about enjoying your vacation time – when you visit a site that you find interesting, please consider sharing your experiences with us by writing up a few words and sending it to Theresa Tweet at phoenix8185@gmail.com. Thank you in advance!

Notice of Annual Meeting:

Monday, September 15, 7 PM, just before the first lecture, U Garden

from the archives: Rocks below dam, Chippewa Falls, WI, circa 1939.



2014-2015 GSM LECTURE SERIES

7:00 PM Mondays at the University of Minnesota

Exact Building and Room location will be posted on our web site www.gsmn.org

Sep 15 Annual Meeting – Dinner 5:00-7:00, Followed by: **Trilobites 101**, Roger Benepe, M.Sc., Past President GSM, **Location:** U Garden Restaurant 2725 University Ave. SE, Minneapolis.

Sep 29 A River Runs Through It- Understanding Himalayan Tectonics Through River Systems, Jeni McDermott, Ph.D., St. Thomas University.

Oct 13 The Mount Simon Aquifer, Jim Berg, M.Sc., Hydrogeologist, Minnesota DNR.

Oct 27 Geothermal Energy, Energy from the Earth, Joel Renner, M.Sc., Idaho Nat'l Lab (retired).

Nov 10 What Minnesota Lakes tell us about the last 10,000 Years, Kevin Theissen, Ph.D., Geology Dept Chair, St. Thomas University.

Nov 24 Where the Dinosaurs Roam, Ray Rogers, Ph.D., Macalester College.

Dec 8 Purpose of the Minnesota County Geologic Atlas Program, Dale Setterholm, M.Sc. MOT, MN Geological Survey.

Jan 26 Sustainability & Mineral Stewardship, John Beck, 3M Geologist and Mike Hansberry, 3M Sustainability Leader

Feb 9 North Shore Geological Mapping, Terry Boerboom, M.Sc., MN Geological Survey.

Feb 23 Where the USGS comes from and Where It's Going in Minnesota, Tim Cowdery, M.Sc., USGS.

Feb 28 Laboratory: CSI Mineralogy-Using Electrons and X-rays to Investigate Geologic Unknowns, To be held at Macalester College with Jeff Thole, M.Sc.

Mar 9 Straight Talk About Folds, Peter

Hudleston, Ph.D., University of Minnesota.

Mar 23 Fracking, *Check gsmn.org for details*, Emmanuel Detournay, Ph.D., U of MN, Civil Engineering Dept.

Apr 6 Industrial Sand Mining in Wisconsin-Geology and Controversies, Kent Syverson, Ph.D., University of Wisconsin.

Apr 20 Oil Field Earthquakes in Oklahoma Steven Erickson, M.Sc., Past President GSM.

May 4 GSM Spring Banquet & Silent Auction, U Garden 5:00 – 8:30 PM. More details on [GSM web site](http://gsmn.org). Followed by: **Como Bluff, Brontosaurus and Beyond: William Harlow Reed and the Rise of American Vertebrate Paleontology**, Mark Ryan, Writer-Photographer.

MINNESOTA STATE FAIR August 21 to September 2

What a good response for Volunteers at our booth this year! Only 14 spots left to fill out of 72. We are hoping the weather will be a bit cooler and the Great MN Get Together has record attendance.

Our booth will be in the Education Building, as usual, with free cold water right inside the door, not far from our booth.

Please plan to volunteer for a shift - and also enjoy the Fair that day. Of course, young and old alike love to chat about their agate finds and travels around our state. Hopefully, they have seen some of our historical markers, and if not, you can point them out from the 8x10 pictures on one of the tables. Our touch and feel table and books will still be there and our Lecture Schedule for the Fall & Winter will be ready also.

Send me an email or give me a call. We'll be sending out updated schedules every couple weeks, so you can see the spot for you.

Thanks to all, Sandy Steffner

ssteffner41@gmail.com or 612-201-2092

In Memoriam: John Jordan

Long time GSM member John Jordan passed away in his sleep at his home in Newport, TN on Friday, May 23. He was 73. He is survived by daughters Lori in Plymouth, MN and Lynn in New Zealand.

A personal note from Dave Wilhelm: John was a dear friend. John was the person who introduced



me to GSM over ten years ago. I will be forever grateful not only for his friendship, but also for all the friends and opportunities I have had through GSM. Although John was not able to be very active in GSM after he moved to Tennessee, he had planned to

participate in the August North Dakota field trip. My last conversation with John was in April, and he was very enthusiastic about the upcoming trip. So his passing is doubly sad to me, as I was looking forward to reconnecting with John on this field trip.

New Book by Lisa Westberg Peters!

Congratulations to GSM member Lisa Peters. She has written a new book, which is currently available on Amazon.com. The following description is taken from Amazon.

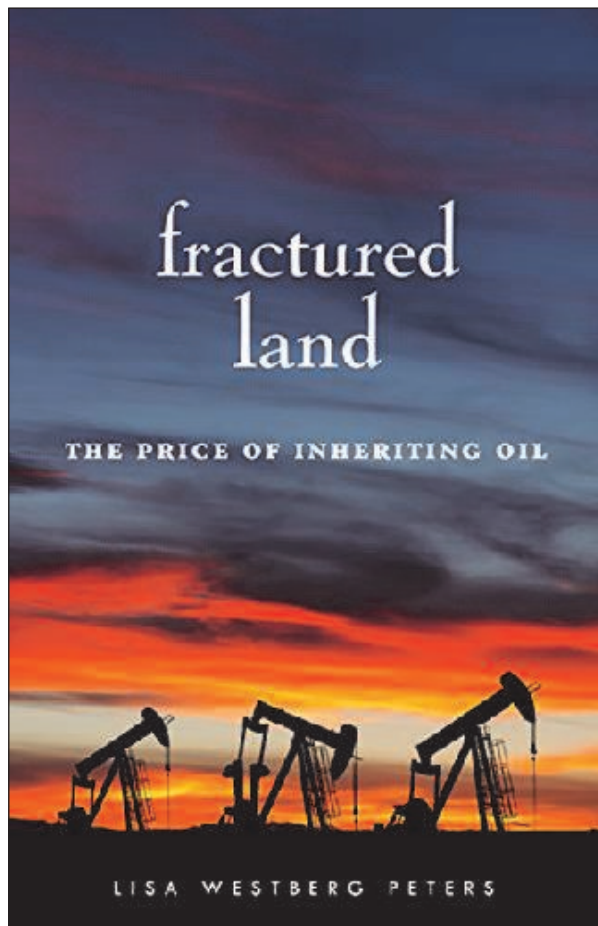
What does an environmentalist do when she realizes she will inherit mineral rights and royalties on fracked oil wells in North Dakota? How does she decide between financial security and living as a committed conservationist who wants to leave her grandchildren a healthy world?

After her father’s death, Lisa Westberg Peters investigates the stories behind the leases her mother now holds. She learns how her grandfather's land purchases near Williston in the

1940s reflect four generations of creative risk-taking in her father’s Swedish immigrant family. She explores the ties between frac sand mining on the St. Croix River and the halting, difficult development of North Dakota’s oil, locked in shale two miles down and pursued since the 1920s. And then there are the surprising and immediate connections between the development of North Dakota oil and Peters’ own life in Minneapolis.

Catapulted into a world of complicated legal jargon, spectacular feats of engineering, and rich history, Peters travels to the oil patch and sees both the wealth and the challenges brought by the boom. She interviews workers and farmers, geologists and lawyers, those who welcome and those who reject the development, and she finds herself able to see shades of gray in what had previously seemed black and white.

Lisa Westberg Peters is the author of many children’s books, including several geology-related titles. Trained as a journalist, she now works as an academic writing tutor at Metropolitan State University in St. Paul.



NOTES FROM THE PAST

From Vol. VIII, No. 3, 1951

Our plaque project is gaining nationwide recognition. The latest AGI Newsletter published by the American Geological Institute, a professional organization, devoted more than half a page to a summary of the affairs of our Society. Special emphasis was given to the plaque project:

“On Sunday, August 19th, 1951, the Geological Society of Minnesota dedicated the fourth of its series of roadside geological plaques on Trunk Highway #14, two miles west of Mankato, Minnesota, at a highway parking area overlooking a picturesque view of the confluence of the Minnesota and Blue Earth Rivers. The day was perfect, one of those beautiful days that can be found in few places outside of Minnesota in summertime, and a large number of members and friends of the Society attended.

This fourth plaque is slightly different from its predecessors - something new has been added! On the top of the plaque is a simple map-sketch showing directions, the rivers and an abandoned river channel mentioned in the geological text. The sketch illustrates the inscription, making it easier to understand, and has received much favorable comment. We were amused to notice that already, that part of the tablet was highly polished by visiting fingers which had traced and pointed out the river locations.”

A SPRINGTIME HIKE TO BARN BLUFF

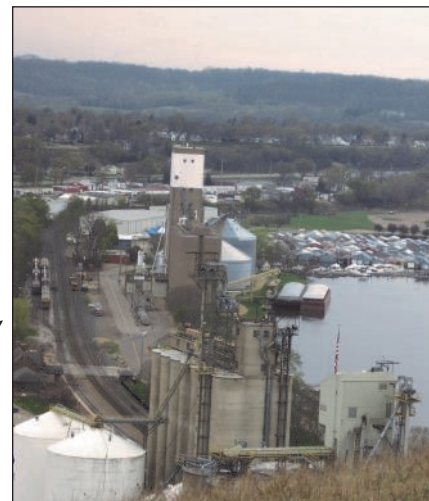
This past Mother’s Day I found myself enjoying one of the nicest days in May hiking Barn Bluff in Red Wing, MN. Carved by glacial meltwater, Barn Bluff, which rises 350 feet above the river, has been a favorite draw for outdoor enthusiasts for many



Braided Mississippi

years. The roadside parking and the park are free. Barn Bluff offers a well traveled trail that can get a bit slick in spots due to rain, so wear appropriate footwear.

This not an easy trail to follow and should the steady incline of the trail prove too much for you, there are a set of stairs built into the bluff, purchased and placed there by the community folk of Red Wing.

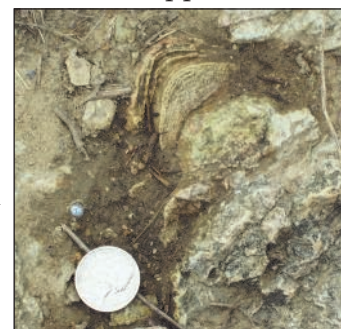


Red Wing Overlook

Whichever path you choose, this sometimes arduous climb is well worth the effort once you reach the summit and gaze down into the city of Red Wing and the Upper Mississippi Valley.

I started on the east side trail and it offered a beautiful view of the city of Red Wing. When I headed west, the cooler May had left the trees barren of leaves and afforded me an almost aerial shot of a beautifully braided Mississippi River.

Farther west on this same trail, I found the overlook to the limestone kiln and quarry which was closed in 1908. The Barn Bluff property was donated to the city as a park in 1910. From the overlook, looking down to the limestone to the right, a small cluster of stromatolites can be seen, offering further proof of the warm, shallow seas and early life that once covered this area during the Paleozoic era.



Stromatolite

Further reading:

[Minnesota History Along The Highways – A Guide to Historic Markers and Sites](#), Published by the Minnesota Historical Society Press (Pg 92-93).

<http://www.startribune.com/sports/outdoors/215174431.html#ZPFYr612kdvA3sLJ.97>

<http://www.red-wing.org/barnbluff.html>

Theresa Tweet

A Rockhound's Lament

Gather 'round me, hear my story
 I'm a rock-hound in distress
 I'm a rock-hound bathed in trouble
 I'm an outcast, more or less.

I have fossils in the kitchen
 I have crystals in the hall
 I have minerals in the bathtub
 I have relics on the wall.

I have tin oxide on the carpet
 I have oil on the floor
 I have a black light in the parlor
 And I have bones behind each door.

Attic rooms are fairly sagging
 Rocks pave the cellar floor
 Pockets bulge with gemmy pieces
 All of this and millions more.

Wife, she thinks I'm goofy
 I don't know, she may be right
 She insists it's silicosis
 Or some contagious sort of blight.

Says my head is lined with agate
 (a freak displacement of the bone)
 Says my brain is just a nodule
 And my heart has turned to stone.

Threatens me with separation
 Storms about our rock-bound home
 Says life to me is just a geode
 Or a hunk of Mammal bone.

Are you rated as a fossil?
 Are you obliged to live alone?
 How do you maintain a hobby
 And still maintain a happy home?

(written by an anonymous GSM member, many years ago.)

*From the 1951 Geological Society of Minnesota
 Newsletter (or the Bulletin, as it was called back then)*

PUBLISHING A BULLETIN

The postman just delivered a copy of the Society's Bulletin. "Good – I'll read it after dinner," or "I'll read it later when I have a little more time." "This issue looks pretty good, it seems to be improving," or "I don't think this issue is up to par". Thus the comments go. A few reach the ears of the editorial staff, but for the most part the comments are kept to the reader himself. As a matter of fact, you the reader, rarely hear the comments of the Editors or know what the task of publishing a Bulletin really involves, so let's step behind the scenes for a few minutes and get acquainted with some of the duties of the Editorial staff in publishing a mimeographed Society Bulletin.

To begin with, the Bulletin is in existence as a result of someone's dream and desire to convey to a larger number of people the purpose and accomplishments of a Society.

The type of publication and the text of the material used are determined largely by the Society's needs.

Since the cover of a Bulletin is the first thing that we see it is important to have a suitable and appropriate design. It is well to remember at this point that many hours of planning and drawing precede the accepted cover layout. Once the cover design is established, a Society may choose to have its covers printed. However, many Societies (like our own) draw and cut a new stencil and mimeograph the covers for each issue.

The inside cover, or in other words, the first page of the Bulletin usually lists the names of officers and directors and states the meeting time and place as well as the purpose of the Society. As this page rarely changes from one election to the next, enough copies can be mimeographs for several issues at one time. This page is followed by an Editorial page in the lineup of contents.

Articles are perhaps the most important part of any Bulletin and are therefore chosen very carefully and with a great deal of thought. Articles are very often reprinted from books, magazines, or from other Bulletin publications. Whatever the source of the material, it nearly always needs editing in order to fit the allotted space in the Bulletin, or to emphasize the facts most interesting to the Society members. And it must always be checked for spelling and punctuation. In the final analysis it is the Editor, not the author, who gets the blame for any mistakes.

Maps and drawings are used frequently and successfully. They not only help to illustrate an article, they also lend variety and improve the general appearance of the bulletin. The process of reproducing maps and drawings is detailed and exacting. First a drawing is traced on tracing paper, then it is placed on an illuminated drawing board (mimeoscope) underneath a mimeograph stencil sheet. After being very careful to arrange the traced drawing within the limitation lines of the stencil sheet, it is outlined with a pen-like tool known as a stylus. Since the stylus cuts an impression on the waxed surface of the stencil it is important to use with care, for too many corrections spoil the stencil.

Not to be minimized in importance is the attractiveness of the Bulletin contents. When we find something that's appealing to the eye as well as to the mind, our enjoyment and appreciation is enhanced twofold. This is achieved by outlining the pages, framing maps and drawings, and arranging articles so as not to appear crowded or cramped.

When all the material has been gathered, the selections made, drafts edited, the mimeograph stencils "cut, (that is, typed or drawn) and proof read, the job of

mimeographing the required number of copies of each page still remains before the Bulletin is ready to be assembled, stapled, stamped, and addressed. Everyone is pressed into service and the situation goes from organized chaos into a state of systematized bedlam. This final process in itself keeps the staff busy for more hours than most of us realize. When at last the Bulletin has been completed and delivered into the hands of the postal department, it is the sincere and humble wish of the Editors, that you, the readers, will derive some degree of pleasure from their handiwork. For therein lies their greatest compensation.

Loretta Koppel

Today in 2014, many of the steps described above are no longer needed. Thanks to photocopiers, computers, and the internet, we no longer need to worry about mimeographs (probably many of our younger members don't even know what a mimeograph is!) and the steps of assembling, folding, labeling, stamping, and mailing are almost extinct since the majority of the membership receives the newsletter via email. But the purpose and style of our GSM newsletter remains the same: to inform, amuse, educate, announce, and share in the wonders of Minnesota's Geology.

Katy Paul

Ultimate Dinosaurs: Meet A New Breed of Beast

The GSM offered a field trip to the Science Museum of Minnesota's new exhibit, "Ultimate Dinosaurs: Meet A New Breed of Beast", on May 15th and July 10th. Due to the popularity of the field trip, the first session filled up quickly, so a second session was added to accompany the overflow. Our tour began with the Omnitheater



presentation of *Ultimate Dinosaurs Alive!* Some of the things brought up in the film were the current practices (and past practices) in the locating, excavating, casting and assemblage of the exhibit pieces. The film also talked about the dinosaurs, their habitat, and a different twist on a reason for their extinction. Our tour guide and paleontologist extraordinaire of the sessions was Roger

Benepe and he did an excellent job answering the interesting questions that came his way. Thanks to Roger Benepe for being our host, and Bill Robbins and Sherry Keeseey for putting this fun and informative event together!

UWEC Chippewa Valley Field Trip

On June 21, 2014, Professor Kent Syverson led a field trip "Geology and Environmental Impacts in the Chippewa Valley" organized through the University of Wisconsin Eau Claire. About a dozen GSM members attended. As its title implies, this trip included stops concerned with both environmental impacts and with geology.

Our first stop was the Advanced Disposal Seven Mile Landfill in Eau Claire County, not the "town dump" of a few generations back! Safeguards include: multiple impervious liners, treatment of waste water, reduction of windblown trash, power generation from waste methane, impervious clay cap, and continuous monitoring of ground water.

My two favorite geology stops on this trip were Big Falls County Park in Eau Claire County and Jim Falls in Chippewa County. At Big Falls,



the oldest exposed rocks are metamorphic gneiss and schist related to the 1.8 billion year old Penokean Orogeny. The photo shows blocks by the

Chippewa River. Lying on top of the gneiss and schist is sediment of the Mt. Simon Formation, deposited in a marine beach environment 500 million years ago. The contact between these two layers is an unconformity 1.3 billion years long, which we were able to observe. The Chippewa River was a raging torrent at the time with all the rains in May and June.

Jim Falls is at the old County Hwy Y pedestrian bridge over the Chippewa River. The rocks at Jim Falls are also 1.8 billion years old and metamorphic. This outcrop is stunningly beautiful, and we had plenty of time to explore over lunch. The outcrop has excellent



examples of thin granitic dikes crossing the rock; dikes folded into accordion-like features; places where the river has eroded the rock into graceful 3-D forms; and

faults where the dikes have been broken in a brittle fashion and displaced.

While touring the Chippewa Valley by bus, we passed many frac sand mines. Dr. Syverson arranged for a tour of one, during which a mine geologist described its operation. I encourage you to attend the GSM lecture on **April 6, 2015**, when Dr. Syverson is scheduled to speak on frac sand mining.

Dave Wilhelm

MEMBERSHIP RENEWAL REMINDER

Our fall membership renewal is on the horizon. Renew by mail or wait until the lecture series starts September 15, and renew in person. Everybody will be up for renewal this fall when the new lecture series starts. (Some people have just recently paid so your renewal date is September 1, 2015). If you wish to mail in your dues please include the information below.

Membership renewal September 1, 2014 to September 1, 2015

Name(s) _____

Address _____

Phone _____ E-mail(s) _____

Would you like to help save money (and trees) and receive our quarterly newsletter only by email

Yes _____ No _____

Please make check payable to : **GSM**

Please mail to:

Membership Levels

Geological Society of Minnesota

() Student -----\$10

P.O. Box 390555

() Individual----\$20

Edina, MN 55439-0555

() Family -----\$30

() Sustaining---\$50

() Supporting---\$100

_____ Membership fee

_____ Tax-deductible contribution (GSM is a 501(c) 3 nonprofit educational organization)

_____ Total included



P.O. Box 390555
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