



March, 2009

Volume 35

Number 1



## Geological Society of Maine 2009 Spring Meeting

Colby College Dept. Geology  
will host the Spring GSM meeting:  
Friday, April 03, 2009  
Diamond Building, Colby College  
Waterville, ME

### Preliminary schedule:

- Student Posters at 2:00 PM
- Student Talks 3:30
- Business meeting 5:00 - 5:30
- Social hour 5:30 – 6:00
- Dinner 6:00 – buffet in the main lounge
- Speaker (TBA) at 7:00 PM

Abstracts due Wednesday, MARCH 25, 2009  
Submit to Dan Belknap [Belknap@maine.edu](mailto:Belknap@maine.edu)  
Must follow GSA format, 300-word  
maximum. Be sure to include **title, authors,  
affiliation, name of department.**

The GSM annual meeting is scheduled for Friday, 3 April, hosted by the Department of Geology, Colby College. The meeting will be held in the Diamond Building. Parking is available adjacent to and behind the building in designated lots. The Poster Session will begin at 2:00 pm and last until 3:30. The Poster Session will be held in the Atrium of the Diamond Building where poster easels will be set up. The size of the poster easels is 5' (TALL) x 3' (WIDE), and we've reserved 15 of these to accommodate 30 posters. If there are more poster presentations, additional easels will be available.

The Oral Presentations begin at 3:30 in the Ostrove Auditorium (Diamond 142) adjacent to the atrium. Digital projection facilities, as well as DVD and VHS (if needed) are available in the auditorium.

It is advised that speakers bring their PowerPoint presentations on a memory stick for uploading to the room's dedicated computer. The annual Business Meeting will directly follow the oral session, and also will be held in the Ostrove Auditorium.

The GSM social hour with a cash bar will be held in the Roberts Union Building, following the business meeting. A buffet dinner will available thereafter, scheduled to begin at 6:00. The cost of the meal will be approximately \$13/person for professionals. Students meals will be subsidized by the GSM so that their costs will be \$5. Vegetarian options will be available.

Our Guest Speaker for the evening is Dr. Bruce Rueger, Colby College, who will be presenting a lecture on the GEOLOGIC INFLUENCES ON BENEDICT ARNOLD'S MARCH THROUGH MAINE TO QUEBEC, 1775. The lecture will be in the Diamond Building.

Reservations for dinner should be made by GSM members and students by contacting Ms. Alice Ridky ([amridky@colby.edu](mailto:amridky@colby.edu)) so that appropriate planning can be made with Colby's Dining Services. Individual reservations need to be finalized by 30 March 2009; tickets for the dinner can be picked up on the day of the meeting. Payment should be made in cash or check to Colby Geology. Please don't wait until the last minute to decide on dinner reservations. Information is on the website:

[http://www.colby.edu/geology/GSM09/09\\_GSM.html](http://www.colby.edu/geology/GSM09/09_GSM.html)

Robert A. Gastaldo, Chair  
Dept. Geology, Colby College



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***PLEASE CHECK THE DATE ON YOUR ADDRESS LABEL – THIS IS THE DATE TO WHICH YOUR DUES ARE PAID UP. MEMBERS MORE THAN TWO YEARS IN ARREARS WILL BE DROPPED FROM THE MAILING LIST.***

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## THE EDITOR'S MESSAGE:

### THE PRESIDENT'S MESSAGE

Tom Brennan and Poland Springs once again hosted a great fall meeting that was well attended, with a diverse and interesting slate of speakers. Thanks to Chris Halsted, Rod Rustad, Scott Calkin, John Field, John Hopeck, Bob Marvinney, Steven Pinette, Joe Kelley, and Fred Beck. The talks were an important reminder of the roles geologists play in addressing critical public and private issues. Joe and Fred's presentation of the rafting trip through the Grand Canyon was great. Many GSM members were part of the trip, but for those of us who couldn't be on the trip, it was *almost* as good as being there.

This fall meeting also included a change in GSM leadership. I would like to thank Cliff Lippitt for his leadership as President, including overseeing the beginning of a new emphasis on educational outreach by the Society. I look forward to continuing to work with him as I learn the ropes! I am also pleased that John Field accepted the nomination of Vice President; I think he will bring a valuable perspective to the Executive Board.

The uncertain economic climate will undoubtedly impact many GSM members. We need to continue to educate people about the role of geology in addressing key environmental, resource, and energy questions. Maine is a geologically rich state, but the number of students in undergraduate programs doesn't reflect the potential here. Attracting more talented students to the field is vital. Presently, the Society recognizes outstanding undergraduate achievement with the Anderson awards. Last spring, the Society voted to provide more financial support for the Anderson Education Fund through increased dues (please remember to pay up if you haven't!). The ad hoc Education Committee has developed and prioritized plans to use some of these funds to expand GSM's educational outreach beyond the awards. It's important to be recruiting bright, motivated students to geology to work on these problems.

I look forward to seeing many of you at the NEGSA meeting in Portland next month and at the GSM meeting Friday, April 3 at Colby. If we haven't met, please introduce yourself. I look forward to working with all of you!

Julia Daly, President (2009-2010)

[dalyj@maine.edu](mailto:dalyj@maine.edu)

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Note that we begin our 35<sup>th</sup> year as a Society with this issue. I'd like to thank all the officers and members who have made the GSM a success. I'd particularly like to thank the stalwart Newsletter Editors who preceded me, and established this long-term tradition: Jack Rand (1974-80), Dave Westerman (1981), Roy Farnsworth (1982-83), Chris Olson (1985-86), Bob Johnston (1987-88), Susan Weddle (1989-97), Dan Belknap (1998-present), Charlotte Lehmann (2006).

Please send items of interest for the News from the Campuses and Member News columns, or other things you'd like to share.

Please check the date on your address label – members more than two years in arrears will be dropped from the mailing list. Send dues to Rob Peale (see address on the last page).

Dan Belknap, Newsletter Editor (1998 – present)  
<[belknap@maine.edu](mailto:belknap@maine.edu)> (207) 581-2159, FAX: -2202

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**GSM WEBSITE:** [www.gsmmaine.org](http://www.gsmmaine.org)

The GSM website contains copies of present and archived Newsletters, a calendar of events, and other items of interest to the Society, including the updated Bylaws. There are many important links to geology items in Maine and elsewhere. There is a page on Maine geology and the Photo of the Month. Let us know what you think.

Webmaster, Mike Lerley [mike@rentageekme.com](mailto:mike@rentageekme.com)

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### THE STATE GEOLOGIST'S MESSAGE

#### Groundwater at the Legislature

Among the many issues Maine's 124<sup>th</sup> Legislature will address during their first session, few will be as controversial or emotionally charged as the discussions of groundwater. At least 13 bills have been submitted that deal with many aspects of the use of this resource. All but a few target one specific area of water use – bottled water. The real target should be plain to all who have followed this issue over the past several years.

As you are probably aware, groundwater is not a new topic at the Legislature. There have been numerous discussions of water resources over the past several decades, beginning with concerns in the 1980s that southern New England states were looking

to Maine's resource to solve their water supply problems. In previous legislative sessions, the heat around this topic has risen from a slow background simmer to a rolling boil. Much of this has been stirred by misinformation about the magnitude and renewable nature of this resource.

Several bills were prompted by the potential for one southern Maine public water system to sell some of the groundwater from their land to a commercial bottler. This proposal generated a deluge of commentary from the public and was subsequently tabled. One bill would prohibit such sales entirely, and the other would allow agreements with commercial bottlers only after approval in public referendum.

Another bill proposes an idea that the public has already rejected in referendum – an excise tax on bottled water of one cent per gallon. In spite of numerous presentations and a wealth of readily accessible information on the magnitude of Maine's groundwater resource, this bill sets the threshold for taxation at the absurdly low volume of 1 million gallons per year. Other bills with general titles like "An Act to Protect Groundwater," have not been drafted beyond their titles as of this writing. Other bills seek to exert local control over decisions on groundwater withdrawals.

Adding to the complexity of this issue is the fact that these bills will be heard before numerous legislative committees, including the Natural Resources, Utilities and Energy, and Taxation committees. Without strong leadership on the issue, there is great potential for committees to act across purposes.

Numerous interest groups are stoking the emotional fires with their rallying cries against privatization/commodification of water resources, distrust of multinational corporations, "theft" of water resources, and depletion of aquifers. It's hard to fathom the focus on bottled water – water that no one is forced to buy – but not on community water systems that are owned by private corporations – water that people in those communities have no choice but to buy. In one town it is not acceptable to pump groundwater to put directly in bottles, but it is acceptable to pump water from the same aquifer system, throw some potatoes in it, and call it vodka!

Regardless of where you stand on these issues, make no mistake about this: groundwater is one of Maine's most renewable resources, and strict regulations govern its withdrawal to safeguard sustainability and other water-dependent resources.

Robert G. Marvinney, Maine State Geologist:  
<[Robert.G.Marvinney@state.me.us](mailto:Robert.G.Marvinney@state.me.us)>

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## GSM MEMBER NEWS

We note with sadness the passing of **David Roy**, Professor of Geology at Boston College, and one of the compilers of the 1985 Bedrock Geologic Map of Maine. Dave passed away in August 2008 at the age of 70. Dave did his dissertation work and continuing mapping in northern Maine, especially in Aroostook County throughout his career, tracing fossiliferous strata there to the White Mountains. His work also helped tightened up the stratigraphy farther south in Maine. Dave was a friend and mentor to many Maine geologists. Dave's wife of 46 years, Marjorie, can be reached at:

Mrs. Marjorie Roy,  
99 LaSalle Ave.,  
Framingham, MA 01701. <[momroy@rcn.com](mailto:momroy@rcn.com)>

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Please send member news to:

Carolyn Lepage, Member News Correspondent  
(1996-present) <[calepage@adelphia.net](mailto:calepage@adelphia.net)> or  
PO Box 1195, Auburn, ME 04211-1195 or  
Fax: (207)-777-1370; Phone: (207)-777-1049

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## GSM SECRETARY'S REPORT

**Fall Meeting, October 2, 2008**  
**Poland Spring Inn**  
**41 Ricker Road, (off Route 26), Poland, Maine**

The fall meeting was hosted by Poland Spring. The meeting consisted of a mini-symposium with six speakers, a business meeting with election of officers, a social hour, dinner and an evening presentation. The meeting was attended by at least 66 people.

The mini-symposium ran from approximately 1:30 to 4:30 pm. Speakers and topics were as follows:

- Delivering Maine Department of Environmental Protection's (DEP) Environmental Data with Google Earth, Chris Halstead, Maine Department of Environmental Protection.
- Visualization of Geologic Data Through Dynamic 3D Visualization – Access, Understand, Communicate, Rod R. Rustad, Senior

Hydrogeologist, and Scott F. Calkin, Senior Geophysicist, MACTEC.

- What Is and What Isn't Stream Restoration: Examples from Maine, Dr. John Field, President, Field Geology Services.
- Regulation of Groundwater Extraction in Maine and the Goal of Sustainable Use, John Hopeck, Bureau of Land and Water Quality, Maine DEP
- Maine's Bedrock Mapping Program, Robert Marvinney, State Geologist, Maine Geological Survey
- Carbon Sequestration, A review/overview of the NGWA-AGWSE committee activities regarding "Geological Storage as a Carbon Mitigation Option, Steve Pinette, Senior Geologist, S. W. Cole Engineering.

Following the mini-symposium a business meeting was held. The topics covered were as follows:

Election of Officers. The following persons were elected (or re-elected) to serve two-year terms as GSM officers:

Julia Daly, UMaine, Farmington, President

John Field, Field Geology Services, Farmington, Vice President

Rob Peale, Maine Department of Environmental Protection, Treasurer

Martha Mixon, Acadia Environmental Technology, Secretary

Daniel Belknap, UMaine, Orono, Newsletter Editor

Arthur M. Hussy II, Professor Emeritus Bowdoin College, Historian

Cliff Lippitt, the outgoing president, was elected to serve on the Executive Council, replacing Liz Champeon. The executive council is now composed of the above officers and Cliff Lippitt, Tom Weddle and Lisa Churchill-Dixon.

Education Committee. The education committee is composed of Julia Daly, Robert Johnson, Liza Churchill-Dixon and Liz Champeon.

Spring Meeting. The spring meeting will be held at Colby College according to our traditional rotation, and will feature student research presentations.

Walter Anderson Award Plaques. The two plaques that hold the names of the winners of the best oral presentation and best poster presentation at our spring meetings are getting full. We will purchase extensions for the plaques.

2009 Summer Field Trip. Suggestions for field trip ideas were requested from the meeting attendees. None were offered at the meeting. Please submit ideas to any of the board members.

Earth Science Week. "No Child Left Inside" was the theme of Earth Science Week, which was held October 12-18, 2008 nationwide. The Maine Geological Survey participated by passing out education kits at the Maine State Museum.

The evening presentation was a slide show by GSM members Joe Kelley and Fred Beck on the week-long, 188-mile Grand Canyon rafting trip last summer (August 2008) which was attended by approximately 30 GSM members and friends. The trip was organized by Fred Beck and Alison Jones, and was led by Stan Beus, geologist and professor emeritus at Northern Arizona University. Some of Fred's pictures can be viewed at <http://picasaweb.google.com/frederickbeck>.



Grand Canyon Rafting Trip. Carol White standing just under the "Great Unconformity", between upper Precambrian rocks and Cambrian sandstones (hiatus of over 1 billion years).

Secretary, Martha N. Mixon, 2006 - present  
[mmixon@acadiaenvironmental.com](mailto:mmixon@acadiaenvironmental.com)

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## GSM TREASURER'S REPORT

The Society currently has 302 members; unfortunately only 50.66% are up to date with their dues. In keeping with previously decided policy, we will drop any members more than two years in arrears at the end of this calendar year. The present membership is distributed as follows:

Students:	36	Associates:	22
Regular:	237	Institutional:	7
<b>TOTAL:</b>	<b>302</b>	<b>Total Paid Up:</b>	<b>153</b>

### Balance on Hand July 31, 2008

Anderson Fund Savings	\$ 1,795.62
Anderson Fund CD	\$ 5,758.68
General Fund Money Market	\$ 3,361.28
General Fund Savings	\$ 40.37
General Fund CD	\$ 5,506.92
General Fund Checking	\$ 0.00
<b>Total</b>	<b>\$ 16,462.87</b>

### Income

Dues	\$ 2,028.00
Interest	\$ 202.58
Anderson Fund Donations	\$ 124.00
Other Donations	\$ 0.00
Publication Sales	\$ 0.00
<b>Subtotal</b>	<b>\$ 895.62</b>

### Expenses

Newsletters	\$ 791.98
Honoraria	\$ 0.00
Anderson Awards	\$ 0.00
Other Awards	\$ 0.00
Meeting Expenses	-
Donations (NEGSA)	\$ 400.00
Postage	\$ 0.00
Web Site	-
<b>Subtotal</b>	<b>\$ 1,191.98</b>

### Balance On Hand January 31, 2009

Anderson Fund Savings	\$ 2,658.90
Anderson Fund CD	\$ 5,845.83
General Fund Money Market	\$ 3,491.13
General Fund Savings	\$ 40.55
General Fund CD	\$ 5,589.06
General Fund Checking	\$ 0.00
<b>Total</b>	<b>\$ 17,625.47</b>
<b>Net gain [or loss]</b>	<b>\$ 1,162.60</b>

Respectfully submitted,  
 Rob N. Peale, Treasurer (2004 -present)  
[<Rob.N.Peale@maine.gov>](mailto:Rob.N.Peale@maine.gov)

**ERRATA:** Your Newsletter Editor was having a bad day last time. The Treasurer's Report for October should read:

1. Under Expenses, the \$1357.00 should be listed as MEETING EXPENSES, not Postage.
2. The second Balance on Hand should be dated JULY 31, 2008.

Mea culpa, Dan Belknap.

### History of GSM Spring Meetings With Student Presentations

Bates College, Lewiston,	3/16/79
Bates College, Lewiston,	3/28/80
Bates College, Lewiston,	3/13/81
Univ. of Maine, Orono,	3/12/82
Bates College, Lewiston,	3/11/83
Bates College, Lewiston,	3/30/84
Bates College, Lewiston,	3/29/85
Bates College, Lewiston,	3/28/86
Bates College, Lewiston,	3/27/87
Bates College, Lewiston,	3/18/88
Bates College, Lewiston,	3/31/89
Bates College, Lewiston,	3/23/90
Bates College, Lewiston,	3/25/91
Bates College, Lewiston,	4/03/92
Bates College, Lewiston,	4/08/93
Bates College, Lewiston,	4/08/94
Bates College, Lewiston,	4/14/95
Colby College, Waterville,	4/05/96
Univ. of Maine, Farmington	4/11/97
Univ. of Maine, Orono,	4/24/98
Univ. of Maine, Orono,	4/23/99
Bowdoin College, Brunswick,	4/07/00
Univ. Southern Maine, Gorham,	4/06/01
Colby College, Waterville,	4/05/02
Univ. of Maine, Orono,	4/04/03
Univ. Southern Maine, Gorham,	4/09/04
Bates College, Lewiston,	4/08/05
Univ. Maine, Presque Isle	4/07,08/06
Univ. Maine, Farmington	4/13/07
Bowdoin College, Brunswick,	4/11/08
Colby College, Waterville,	4/03/09
<u>Projected*:</u>	
Univ. of Maine, Orono,	2010
Univ. Southern Maine, Gorham,	2011
Bates College, Lewiston,	2012
Univ. Maine, Presque Isle	2013

\* Spring Meeting host rotation list was established in 2005. See: **Secretary's Report June 2005.**

## MEMBERSHIP DUES STATEMENT

**The GEOLOGICAL SOCIETY OF MAINE, INC.** (often referred to as **GSM**) is a non-profit corporation established as an educational Society to advance the professional improvement of its members; to inform its members and others of current and planned geological programs in Maine; to encourage continuing social contact and dialog among geologists working in Maine; and to further public awareness and understanding of the geology of the State of Maine; and of the modern geological processes which affect the Maine landscape and the human environment.

The Society holds three meetings each year, in the late fall (Annual Meeting), early spring, and mid-summer (usually field trips). A newsletter, *The Maine Geologist*, is published for all members three times a year. The Society year runs from August 1 to July 31. Annual dues and gift or fund contributions to the Society are tax deductible. There are three classes of memberships:

\$20.00	REGULAR MEMBER	Graduate geologists, or equivalent, with one year of practice in geology, or with an advanced degree.	<b>PLEASE NOTE NEW FEE SCHEDULE AS OF February, 2008</b>
\$20.00	INSTITUTIONAL MEMBER	Libraries, societies, agencies, businesses with interests in or practicing geology and related disciplines.	
\$10.00	ASSOCIATE MEMBER	Any person or organization desirous of association with the Society.	
\$ 5.00	STUDENT MEMBER	Persons currently enrolled as college or university students.	

### THE GEOLOGICAL SOCIETY OF MAINE ANNUAL RENEWAL / APPLICATION FOR MEMBERSHIP

Regular Member	\$20.00	\$ _____	Name _____	<b>Make checks payable to:</b> Geological Society of Maine Rob Peale, Treasurer Maine Dept. Environmental Protection, State House Station 17 Augusta, ME 04333-0017
Institutional Members	\$20.00	\$ _____		
Associate Member	\$10.00	\$ _____	Address _____	
Student Member	\$ 5.00	\$ _____		
Contributions to GSM (please write gift or fund on check)		\$ _____		
<b>TOTAL ENCLOSED</b>		\$ _____		

Email Address \_\_\_\_\_

(GSM funds include the Walter Anderson Fund\_\_\_\_, the Education Fund\_\_\_\_, and discretionary gifts as noted by contributor)

### 2009/2010 SOCIETY YEAR BEGINS AUGUST 1 - PLEASE SEND DUES TO TREASURER.

**The DATE of your mailing address refers to PAID UP DUES DATE**

#### THE GEOLOGICAL SOCIETY OF MAINE

c/o Daniel F. Belknap, Newsletter Editor  
Department of Earth Sciences  
111 Bryand Global Sciences Center  
University of Maine  
Orono, ME 04469-5790 <belknap@maine.edu>



*THE MAINE GEOLOGIST* is the Newsletter of the Geological Society of Maine, published three times a year, in mid-winter, summer, and early fall, for members and associates.

Return Service Requested

Correspondence about **membership** in the Society, **publications** and **dues** should be mailed to:  
Rob Peale, Department of Environmental Protection  
State House Station 17, Augusta, ME 04333-0017 <rob.n.peale@maine.gov>

Items for inclusion in the **Newsletter** may be directed to:  
Daniel F. Belknap, Dept. Earth Sciences, University of Maine,  
Orono, ME 04469-5790 <belknap@maine.edu>

President	Julia Daly,	UMaine Farmington
Vice President	John Field	Field Geology Services, Farmington, ME
Secretary	Martha Mixon,	Acadia Environmental
Treasurer	Rob Peale,	Maine Dept. Environmental Protection
Newsletter Editor	Dan Belknap,	University of Maine
Directors	Lisa Churchill-Dickson (05-09)	SEA Consultants
	Tom Weddle (06-10)	Maine Geological Survey
	Cliff Lippitt, (09-13)	S.W. Cole, Inc.