

and
Skelton Lounge, Chase Hall, 56 Campus Avenue

Host: Bev Johnson

AGENDA:

- 12:00 – 1:00 Officers Meeting [115 Carnegie]
- 1:00 – 2:30 Student Posters [219 Carnegie]
- 2:30 – 2:45 Coffee Break [219 Carnegie]
- 2:45 – 4:30 Student Talks [Skelton Lounge]
- 4:30 – 5:00 Business meeting [Skelton Lounge]
- 5:00 – 6:00 Social Hour [Skelton Lounge]
- 6:00 – 7:00 Dinner [Chase Hall]
- 7:00 – 8:00 Keynote Address: Mark Swanson,
USM, "Digital Mapping Technologies
and GIS in the Geosciences: A Maine
Coast Perspective". [Skelton Lounge]

The Spring Meeting of the GSM will be held at the Bates College on Friday, April 8, 2005. Following our 26-year tradition, this meeting will involve student presentations and posters in the afternoon, and a key-note speaker in the evening. All advisors of undergraduate and graduate students should encourage their students to participate and present their work orally or by poster. There are prizes for both best poster and best oral presentation. Please submit your abstracts as soon as possible, in the format shown below, by e-mail, to:

Daniel F. Belknap
Dept. Geological Sciences
University of Maine
Orono, ME 04469-5790 <belknap@maine.edu>

Abstracts will be compiled and handed out as a Program and Abstracts supplement to the newsletter at the meeting.

FORMAT:

[Poster or Oral presentation]

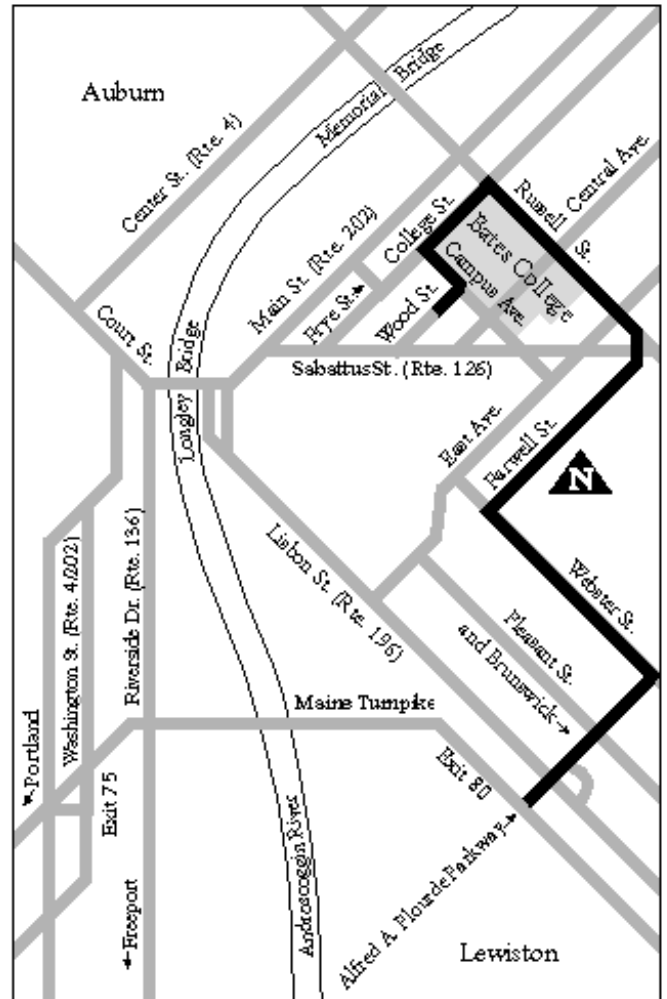
DETAILED AND EXPLICIT TITLE, ALL CAPS

LAST NAME, First Name, Department, College,
Address, <email.address>

Text of abstract describing the work succinctly, avoiding the form: "it will be shown that" and other fluff phrases. Please limit the abstract to 300 words, using GSA style.

DIRECTIONS: Bates College is located approximately three miles from Maine Turnpike Exit 80 (Lewiston Exit). Turn NE onto Alfred A. Plourde Parkway straight to stoplight at intersection of Plourde and Pleasant; continue on Plourde 0.6 miles to stoplight at Webster Street. Turn left onto Webster and travel 1 mile to stoplight at Farwell Street. Turn right onto Farwell and follow 0.6 miles to stoplight. Continue straight across intersection onto Russell Street and follow for 0.9 miles to the third stoplight. Turn left onto College Street and follow to second blinking stoplight; turn left onto Campus Avenue.

There is parking along Campus Avenue or at the Admissions parking lot, 23 Campus Avenue. Carnegie Science Building is a newer, glass-atrium complex at 44 Campus Avenue on the SW edge of the main part of campus, midway down the road. Chase Hall is the Student Center, located at 56 Campus Avenue, with large gables and gothic spires. <<http://www.bates.edu/GEO.xml?dept=GEO>>



<<http://www.bates.edu/bigger-directions.xml>>

**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
University 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,	4/3/92
Bates College, Lewiston,	4/8/93
Bates College, Lewiston,	4/8/94
Bates College, Lewiston,	4/14/95
Colby College, Waterville,	4/5/96
University of Maine, Farmington	4/11/97
University of Maine, Orono,	4/24/98
University of Maine, Orono,	4/23/99
Bowdoin College, Brunswick,	4/7/00
University of Southern Maine, Gorham,	4/6/01
Colby College, Waterville,	4/5/02
University of Maine, Orono,	4/4/03
University of Southern Maine, Gorham,	4/9/04
Bates College, Lewiston,	4/8/05

of green certification for buildings) and wastewater treatment that include snow systems.

- The Maine Drinking Water Program discussed public water supply location and protection.
- USGS discussed the real-time groundwater network and climate change – earlier ice out dates, earlier peak flows, no change to summer base flows, etc.
- Hillier Associates focused on storm water work, lake studies for DOT, and lake bathymetry
- Emery & Garrett reviewed several ground water applications
- Northeast Geophysical Services had on display various geophysical units used in their investigations, including a seismograph.
- Pike Industries gave an overview of aggregates used in various construction applications.
- The University of Maine Department of Earth Sciences provided an overview of many coastal geological studies.

Robert G. Marvinney, Maine State Geologist:
<Robert.G.Marvinney@state.me.us>

THE STATE GEOLOGIST'S MESSAGE

Report on Geology Day at the State House

About 20 geologists descended on the Hall of Flags at the Maine State House on January 18 in what I hope will become a biennial affair – Geology Day. The objective of this daylong event was to provide the Maine Legislature with an overview of the broad spectrum of geological activities that contribute significantly to Maine's economy and environment. During the course of the day, many legislators and administration officials stopped by the numerous displays set up around the room and discussed the work done by geologists. Thanks to the many participants that made this day successful. The real measure of success will come as Legislators debate bills addressing water, aggregate resources, and coastal hazards in this and future legislative sessions. Here's a summary of the presenters and displays.

- Maine Geological Survey provided an overview of geologic mapping and how mapping helps define sand and gravel aquifers.
- Dragon Products provided a broad perspective on mining, including cement production and the geological materials used in their process.
- Nestle Waters/Poland Spring provided an overview of aquifers, sustainable water use, and a perspective on water use in Maine.
- S.W. Cole displayed information on geothermal studies as it relates to heat exchange systems (part

GSM MEMBER NEWS

Congratulations to **Julia Daly and Doug Reusch** (University of Maine – Farmington), now the proud parents of twin girls. Moriah Adele and Bridget Eliza were born on October 28, 2004.

Larry Dearborn retired from the Maine Department of Environmental Protection in December 2004. Larry will be doing some consulting, but will also be involved in running the Little River Bed and Breakfast in Cutler, which he and his wife, Irene, own.

Nick Sabatine is now managing the Portland, Maine office of Ransom Environmental Consultants, Inc.

Don Robbins (EnviroInvestigations & Remediation, Inc.) is the new Public Member on the Maine Well Drillers Commission and was also elected in November 2004 as the Town of Vassalboro's representative to the Kennebec Water District Board of Trustees. The well commission post is for five years and the trustee position is for a maximum of two three-year terms.

After serving as director of the Mitchell Center at the University of Maine for many years, **Steve Kahl** has left Orono to serve as the first director of the Center

for the Environment at Plymouth State University in
Plymouth, New Hampshire.

Please send member news to:

Carolyn Lepage, Member News Correspondent
(1996-present) <clepagegeo@aol.com> or
PO Box 1195, Auburn, ME 04211-1195 or
Fax: (207)-777-1370; Phone: (207)-777-1049

GSM SECRETARY'S REPORT

Geological Society of Maine Annual Meeting
October 29, 2004
Poland Spring Inn
Poland Spring, Maine

Mini-Symposium – Regulating Maine's Resources

- 2:00 – Mark Stebbins (MDEP): Mining Operations
and Excavations for Borrow, Clay, Topsoil and Silt
- 2:30 – Gregg Wood (MDEP): Surface and Sub-
surface Waste Water Disposal
- 3:00 – John Hopeck (MDEP): Impacts of
Stormwater Infiltration on Groundwater Quality
- 3:30 – Richard Heath (MDEP): The Story of the
Environmental and Groundwater Analysis Database
(EGAD)

Lisa Churchill-Dickson called the Annual Meeting to
order at 4:35 p.m.

Overdue Dues: Lisa announced that a large
percentage of the, approximately, 344 GSM members
are not current on their membership dues. Members
are asked to please pay owed dues to the GSM
Treasurer, Rob Peale. Membership to GSM is
\$12/year for regular members and \$5/year for
students.

Redesign of Website: The GSM website will be
undergoing a redesign in the near future, with several
major changes to the general structure. There will be
a greater emphasis on the website as a source for
GSM news.

GSM Member Directory: The suggestion was
made that a directory of GSM members be created.
This member directory could be used by members
and as a resource to help GSM connect with the
community. It is envisioned that the directory could
be a source for community groups and educational
institutions to find local geologists for speaking and
presentation. Much discussion followed during
which several issues relating to privacy were raised.
Major concerns included a balance between privacy
and accessibility, that the directory not be web-based,
who would receive the directory, what information

would be included, etc. Members would certainly be
able to request to be excluded from the directory.
Lisa asked for more feedback and information from
the GSM membership; the issue was tabled for future
discussion.

Spring Meeting: The Spring 2005 meeting is
planned to be hosted by Bates College, in Lewiston.

State Geologist's Report: State Geologist, Bob
Marvinney, brought to attention that there are a
number of geology related issues in the upcoming
Legislative session. The Maine Geological Survey
will be hosting a Geology Day at the Hall of Flags, in
the State House, January 18th, 2005. The day will
provide an opportunity to speak with Legislators
about how geology affects the State of Maine
economically.

GSM President: Lisa Churchill-Dickson announced
that it would be her last meeting as acting GSM
President. The only nominee for the position was
current Vice President, Tom Weddle. Cliff Lippitt
was nominated for Vice President. A vote was held
among attending members: Tom and Cliff were voted
unanimously for their respective positions, beginning
in 2005.

Meeting adjourned at 5:15

5:15 Social Hour

6:00 Dinner, compliments of Poland Spring

Evening Speaker: Robert Gerber (Stratex, LLC)
“Modeling and the Maine Yankee
Decommissioning”

Bob Gerber, of Stratex, spoke on his experiences
working on the decommissioning of the former
Maine Yankee Nuclear Power Plant, in Wiscasset.
The main focus of the talk was an overview of the
complex modeling techniques which were used to
guide the decommissioning/clean-up of the reactor
and surrounding areas. While discussion of the
various models used was fascinating, one of the
highlights of the talk was a short movie of the
demolition of the main reactor dome structure –very
impressive.

The Maine Yankee Nuclear Power Facility
occupied approximately 820 acres, located on Bailey
Point in Wiscasset, Maine. Construction of the
plant began in 1968 and commercial power
generation started in 1973. Aside from the obvious
radioactive waste concerns, some of the other factors
complicating the decommissioning efforts were:
extensive petroleum contamination, relic dumps
located on the property, filling of the tidal marsh area
during construction, and the effect of massive
amounts of concrete on the local groundwater
system.

In an effort to best address these issues, extensive geotechnical, geochemical, hydrologic and statistical modeling was conducted. Models created include:

- Geostatistics and 3-D spatial modeling were used to guide soil cleanup on site.
- pH effects from large amounts of concrete in contact with shallow groundwater system.
- Estimating leakage through dikes
- Movement of cesium-137 in fractured rock
- Diffusion of tritium and carbon-14 from concrete
- Slow leakage of salt from marine dredge spoils
- Transport and biodegradation of solvent contaminant plume
- Tritium leached from unsaturated soils as a result of precipitation infiltration.

As of October 2004, decommissioning of the facility was about 92% complete; the main reactor dome was demolished in September of 2004. Approximately 340 million pounds of waste have been removed from the site, the majority transported by rail. Thank you Bob for a very interesting – and at times explosive- talk.

Respectfully submitted,
Sean R. Dougherty, Secretary (2004 -)
<sean.dougherty@maine.gov>

GSM TREASURER'S REPORT

The Society currently has 344 members, distributed as follows:

Students:	57
Associates:	25
Regular:	258
Institutional:	12
TOTAL:	352

Total Paid Up 133

Previous Balance: Funds as of October 22, 2004

Anderson Fund Savings	\$ 446.54
Anderson Fund CD	\$ 5,018.19
Education Fund Savings	\$ 888.11
General Fund Savings	\$ 6,633.79
General Fund Checking	\$ 3.64
Total Funds	<u>\$ 12,990.27</u>

Receipts 10/22/04-02/09/05

Dues	\$ 1,085.00
Dividends	\$ 56.20
Anderson Fund Donations	\$ 15.00

Receipts Subtotal	<u>\$ 1,156.20</u>
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Expenses 10/22/04-02/09/05

(Newsletter expenses not submitted yet)	<u>0.00</u>
Expenses Subtotal	<u>\$ 0.00</u>

Funds as of February 9, 2005

Anderson Fund Savings	\$ 462.83
Anderson Fund CD	\$ 5,043.13
Education Fund Savings	\$ 890.72
General Fund Savings	\$ 7,746.15
General Fund Checking	\$ 3.64
Total Funds	<u>\$ 14,146.47</u>
Net gain or loss:	<u>\$ 1156.20</u>

Respectfully submitted,
Rob N. Peale, Treasurer (2004 -)
Rob.N.Peale@maine.gov

NEWS FROM THE COLLEGES AND UNIVERSITIES

Colby's Geology department is now active on both sides of the Atlantic, with regular courses being run in Waterville and a Study Abroad program running at the CBB Centre in Newlands, Cape Town, South Africa. Bob Gastaldo is directing a group of 5 students (4 Colby, 1 Bates) in two courses focused on Stratigraphy/Sedimentology and the Karoo Basin of South Africa. Colby students participating in the semester abroad are David Desjardins (B '06), Lindsay Masters (C '06), Dan Pace (C '06), Marcy Rolerson (C '06) and Sam Weeks (C '06). Field trips will be run by guest leaders including Dr. John Rogers (UCT) through the Cape Peninsula, and Pippa Haarhoff (West Coast Fossil Park) at Langebaan. Guest seminar speakers include Dr. Roger Smith (Iziku Museum), Dr. DeVille Wickens (Stellenbosch University), Dr. Bruce Cairncross (Univ. Johannesburg), and Dr. Maarten de Wit (UCT). The group is scheduled for a week's field work at the Permian/Triassic boundary section in Carlton over Easter break, as well as an underground mine tour of the Bulfontaine Diamond Mine in Kimberley. Local field trips include carbonate eolianites on Robben Island (in the quarry where Nelson Mandela toiled during his imprisonment), the Cape of Good Hope, Chapmans and Hout Bay, and Table Mountain. Unfortunately, this is the last semester that the CBB Study Abroad program will be run, which is an unfortunate demise to an unparalleled opportunity for Maine students.

Dr. Robert A. Gastaldo
Chair, Department of Geology, Colby College,
ragastal@colby.edu

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:

\$12.00 REGULAR MEMBER	Graduate geologists, or equivalent, with one year of practice in geology, or with an advanced degree.	PLEASE NOTE NEW FEE SCHEDULE AS OF August 1, 2003
\$12.00 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	\$12.00	\$ _____	Name _____	Make checks payable to: Geological Society of Maine Rob Peale, Treasurer Maine Dept. Environmental Protection, State House Station 17 Augusta, ME 04333-0017
Institutional Members	\$12.00	\$ _____		
Associate Member	\$10.00	\$ _____	Address _____	
Student Member	\$ 5.00	\$ _____		
Contributions to GSM		\$ _____		
(please write gift or fund on check)				
TOTAL ENCLOSED		\$ _____	_____	

Email Address _____

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

2005/2006 SOCIETY YEAR BEGINS AUGUST 1 - PLEASE SEND DUES TO TREASURER.

The **DATE** on 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	Tom Weddle,	Maine Geological Survey
Vice President	Cliff Lippitt,	S.W. Cole, Inc.
Secretary	Sean Dougherty,	Maine Dept. Environmental Protection
Treasurer	Rob Peale,	Maine Dept. Environmental Protection
Newsletter Editor	Dan Belknap,	University of Maine
Directors	Dave Gibson (02-06),	University of Maine, Farmington
	Liz Champeon (04-08),	S.W. Cole, Inc.
	Lisa Churchill-Dickson (05-09),	Registered Professional Geologist