



The Maine Geologist

NEWSLETTER OF THE GEOLOGICAL SOCIETY OF MAINE

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PRESIDENT'S MESSAGE

This fall at College of the Atlantic I'm teaching an introductory geology course that covers fundamental concepts in Earth Science; the course title and topic is *Geology and Humanity* – how geologic processes are entangled with human societies and have been through time. Normally I'd have a field component to this course, not just because I'm lucky to have Acadia National Park and the surrounding region as a perfect natural laboratory and classroom, but because as geologists, being “in the field” is foundational to much of our work and study. In the field students are eager to couple their own intuition and experiences with logic to make interpretations based on their own observations of landscapes. The power of “the field” for students, especially early in their education, is well documented in the literature as being transformational for their STEM education pathway but also well beyond disciplinary learning - for their growth and development personally, as community members, and citizens of the world.

But we're not in the field together this term. We are in Zoom. Sometimes I imagine this new cyberterritory as an unknown place to be explored, like the arctic or deep ocean. But there is no *place* in Zoom. Pixelated boxes represent a person in some actual place, although the place doesn't really matter as that person is transported to Zoomland, a placeless place...

Zoom doesn't have time either. In Zoom, time doesn't flow like normal, it's static and rigid. In one second you are alone in a box...waiting, hoping for any connection...like me in my Zoom classroom...waiting...hoping...that the students show up. I used to see a difference between the words “to wait” and “to hope”. In Spanish these words are represented by same verb, *esperar*. I now

see that is most appropriate. We are always only hoping.

All at once, the empty, silent Zoom room where I see just my own digitized image, suddenly populates with boxes of other “people” at the moment class time is set to start – and there is relief. And then suddenly, a bit of sadness...because we aren't quite fully in a place or a time to experience together – we're all suspended in Zoom. It is better than nothing.

Given our lack of ability to be in the field together, we are reading together. This term we read two books: “Coal: A Human History” by Barbara Freese and “Dirt: The Erosion of Civilizations” by David Montgomery. We also listened to excerpts from “Timefulness” by Marcia Bjornerud. In her book, Marcia Bjornerud explains “How thinking like a geologist can save the world.” She argues that to take on many of the huge problems we are facing at the present and over the next decades to century requires the ability for people to realize the vast time and space scales Earth processes work over. Some common themes of these readings that have cropped up this term: humans need to learn how to work as a collective, to pay more attention to place and time in order to “adjust what we do to where we do it” and stop “ignor(ing) the interests of posterity” (Montgomery, Ch. 10). Both Montgomery and Freese articulate using elements of human and geologic history to show how humans are entangled with Earth processes and the Earth System.

While there is much within these texts that raise concern for the present and future, they also have a certain amount of hopefulness. Hope that perhaps people just hadn't had any training in geosciences or have never considered the vast time and space scales that geologic processes act over. I suppose the hope is that once people learn more about vast time and space scales, they will think and act differently. But maybe many people can't actively consider the past

and future because their present takes all their energy. I do think for many people on Earth today this might be the case – especially right now.

At the end of Zoom class time I find some relief and hope. I suspect my students do too as they return to their real places and times to make observations of and participate in their landscapes and societies. For me, I might even find MORE hope and energy AFTER the Zoom meeting than before; a net gain in hope and energy in passing through the Zoom. In an antithetical and latent way, the act of Zooming together inspires, invigorates, and activates. Like decompression melting and fracturing. Like glacial rebound. Like human breath on a cold day in the real world.

Like so many other events this year, we will not have a typical GSM Fall meeting. After much brainstorming and initial planning, it was decided that for the sake of all us spending a bit more time in real places and times and a bit less in the Zoomspace, we will have a short virtual business meeting together. With virtual geoscience conferences abounding this fall such as GSA, AGU, and, closer to home, the Borns Symposium, in addition to plenty of pop-up webinars and talk series on a wide range of geoscience topics and beyond suddenly open to a much wider audience, we did not see an immediate need to provide another virtual space for presentations at this time.

We will gather together briefly in the Zoom on December 4th at 3p.m. EDT to discuss a few current GSM topics: voting on and welcoming new EC members, revealing the new GSM website, suggesting potential future field trips and gatherings, reporting on the state of our fundraising campaigns, and perhaps most importantly – we will hear updates from each other. We also will introduce an initiative to include more student voices on the executive committee by welcoming two student members who will attend EC meetings over a 1-year period. If you know of a student who would be interested in this position, please nominate them! Any GSM member can nominate a student. More information is provided within the newsletter. I hope you plan to attend the Fall GSM Business meeting on December 4th in Zoomland. If you cannot attend, you can send a pre-recorded message/update (instructions below within the newsletter). Or, if you are part of a group

or organization (school groups, businesses, local geology clubs, etc.) that would like to send a group update through a pre-recorded video message, please do!

Our GSM fall meeting will be in Zoom – together in digitized boxes with electronic voices and ourselves pictured in mirrored likeness. With a slightly later start time (3pm) than usual to enable a seamless transition to happy hour...in our own places, raising our own glasses filled with our beverages of choice, we will toast each other and looking ahead to 2021. I feel hopeful that, as folks who have some training in and a fondness for “Timefulness,” we will be inspired, invigorated, and activated by each other during the meeting and also as we leave the Zoom and return to our real times and places and continue to play and work on Earth.

Sarah Hall, GSM President
shall@coa.edu

THE EDITOR'S MESSAGE

The newsletter is distributed through email in pdf format. Anyone with special needs please contact the Editor. Please send items of interest and photographs of GSM activities to:

Amber Whittaker, Newsletter Editor
amber.h.whittaker@maine.gov

GSM WEBSITE: www.gsmmaine.org
FACEBOOK: facebook.com/GSMMaine

GSM FALL MEETING

December 4, 2020
Virtual

The annual fall meeting of the GSM will be all remote this year and will be held via Zoom on Friday, December 4, beginning at 3p.m. With a very hectic fall this year, we are planning to keep the program short and focus on many exciting GSM business items (agenda below). Additionally, we welcome

pre-recorded updates or announcements from the community with photos or video to be hosted on a web platform that will enable those who cannot attend the meeting to hear from members. Instructions for how to submit a ~5 minute pre-recorded update may be found by following this [link](#).

Business Meeting Agenda Items:

1) Nominations Committee:

New nominations for Vice-president position, Two councilor positions. All Officer positions are up for re-election. All other Officers are willing to remain in their current roles for the next two-year term.

2) GSM Student EC members:

The EC is proposing to add two student members to join the council during planning meetings throughout the year. We hope to welcome two student members at this fall meeting. Read more about these proposed positions below. GSM members, please nominate students! To nominate a student, please fill out this brief [form](#).

3) GSM Member vote for new EC appointments

4) Communications Committee Updates:

Website Launch: Brief tour of the new website and discussion of its functionality - you can now renew your membership online!

4) Treasury Reports/Updates

6) Announcements/Updates from the Community:

- a) Live (in zoom space, open floor for any GSM member to speak),
- b) pre-recorded updates from members and institutions (follow this [link](#) to submit an update with photos or video),
- c) Climate Council update (Cassy Rose),
- d) new EC member introductions

6) Looking Ahead: planning for 2021 and beyond

7) Other business.

NEW - EC Student member positions:

The Executive Council is looking to broaden the voices we hear from during our planning meetings throughout the year. We would like to add two honorary student members to the council to serve for one year beginning after the annual fall meeting. As these positions comprise a committee and will not be formal counselor positions, we are not suggesting

any changes to the bylaws at this time. Their primary job would be to provide a student perspective at EC meetings and to engage with peers throughout the year to suggest ways the GSM may benefit current and recent students. We invite GSM members to nominate potential student members to serve in this role. Students should be at least 16 years old and be enrolled at an educational institution in Maine. We are hoping to welcome our first two student members during the Fall 2020 GSM meeting. To nominate a student, please fill out this brief [form](#).

NEWS FROM THE STATE GEOLOGIST

Dynamic Earth

While for most lifetimes in Maine our landscape seems firm and unchanging, planet Earth periodically reminds us that we live in a dynamic place. On the morning September 16, the landscape along the Presumpscot River in Westbrook suddenly gave way, releasing tens of thousands of cubic yards of unconsolidated mud and sand into the river, carrying with it trees and anything else on the surface. The blockage in the river immediately backed up the flow, causing the river level to rise more than 10 feet in just a few minutes, but thankfully there was no injury or loss of life and relatively little property damage. The event prompted the City of Westbrook to declare a state of emergency, and a swarm of media descended on the locale. Fortunately, Maine Geological Survey landslide expert Lindsay Spigel was just a few miles away sampling old landslides (!) in Gorham when I sent her into the fray. While the media was interested in determining causes and laying blame, Lindsay clearly and calmly reported that the underlying cause of the landslide was the underlying sensitive clay of the Presumpscot Formation.

Geologists have long known that this area along the Presumpscot River has a significant landslide hazard. Professor Edward Hitchcock (Amherst College) described a landslide in this area in 1831. In 1868, the largest documented landslide in Maine (38 acres) blocked the river and flooded the mill

upstream until mill workers dug a channel through the blockage. Other prehistoric landslides have occurred throughout this region and elsewhere in the southern Maine areas underlain by the Presumpscot, as revealed by recent lidar data. Lindsay's work on dating landslides has resulted in a surprising chronology of sporadic events since deglaciation, with an interesting cluster of events in the 600 – 700 year BP timeframe. Might these have been triggered by an earthquake or a regional wildfire? More research is required.

In the meantime, the Portland Water District (PWD) responded to the immediate threat to several of their distribution pipes which cross the Presumpscot River literally a few feet downstream from the slide site. PWD removed the tangle of massive trees and much of the blockage in the river, at considerable expense. While the immediate concerns caused by this landslide have been addressed, there remains the question of landslide hazard in the region. MGS continues to work as part of a multi-agency effort to encourage Westbrook and partners to better assess this hazard, and to seek ways to fund such an assessment.

“Civilization exists by geological consent, subject to change without notice.” – Will Durant

Robert G. Marvinney, State Geologist
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For more on Maine's landslides, visit the Maine Geological Survey landslide [website](#).

about this learning experience featured on Maine Public Radio [here](#).

Sarah Hall
shall@coa.edu

Unity College

Since the June 2020 newsletter there have been changes at Unity College (although one constant is that we remained 100% online due to COVID-19). Two major changes have been (1) the creation in March/April this year of a new face-to-face educational 'unit' that is currently being called Hybrid Learning and that is designed to better align our face-to-face offerings with our Distance Education unit, and (2) the decision in early August to stop offering our 'Flagship' traditional 4-year campus residential experience. This latter change also means that Unity College has effectively cut the number of face-to-face degree programs offered from 16 in the Flagship to 5 in Hybrid Learning. Additionally, while the Flagship was on a semester system, Hybrid Learning is based around eight 5-week terms with students now taking only one or two classes at a time. Of note is that the Earth and Environmental Science BS degree is no longer offered, but there is a new Environmental Science BS degree. Students in the former EES program who were entering Fall 2020 with 84 or more credits will still be able to graduate with an EES degree.

We are excited about what we can do in the new calendar and the potential for the new Environmental Science program, particularly once we return to face-to-face instruction. For now the focus is on helping everyone adjust, ensuring our seniors are able to graduate on time (including finishing up thesis projects both remotely and in the lab), designing the new curriculum, and taking stock of the new reality.

With all of that said I hope that everyone else is doing well and charting a steady path through this tumultuous year. Best wishes from Unity!

Tom Whittaker

NEWS FROM THE CAMPUSES

College of the Atlantic

Two current COA students and one recent alum presented their work at the Geological Society of America fall meeting this month featuring their work on groundwater quality in Hancock County and the Aspiring Coastal Maine Geopark. A group of students and faculty have been isolating together enabling face-to-face maskless instruction as they study the physical, chemical, and social landscape around them on one Maine farm – listen to a story

ITEMS OF INTEREST

Looking for GSM Volunteers

From Cheryl Fontaine, Senior Geologist-Retired, Maine Department of Environmental Protection

I have been approached by University of Maine at Augusta Senior College to organize and coordinate a geology field trip course for their Fall 2021 semester.

Augusta Senior College is sponsored by the University of Maine at Augusta and is a member of the Maine Senior College System. To anyone over the age of 50, Senior College offers a variety of unique learning opportunities ranging from short lectures to semester long courses. For more information about Senior College and the classes that they offer, please check out their website at <https://www.umasc.org/>

I am looking for enthusiastic volunteers who might want to guide a class of students to one (or more) of your favorite geological features. The field area of focus will start in Augusta, looking at the differences between the metamorphic and igneous outcrops at several locations. Since our potential students have expressed an interest in coastal Maine, the following weeks will focus on visits to the Boothbay area and then extend eastward along the mid-coast finishing in the Camden and Rockport area.

I hope to be able to visit one or more sites once a week, for a period of 6 to 8 weeks. I would love to have a "guest" geologist for each trip. The trips will not be held during weekends or holidays, and we will be limiting the number of students to 12. For safety reasons and keeping in mind our class participants will be over 50, we will not be viewing any road cuts. The sites must be easy to walk, with ample parking nearby. Senior College will organize transportation, permissions, lunch and any other necessary logistics.

Of course, being able to follow through on this early planning will be dependent on the status of the COVID pandemic. If we can pull it off, all trips will comply with whatever the current safety measures are at the time.

I am in the very early planning process and am currently visiting a number of potential sites, reviewing them for interesting content, accessibility, nice vistas, parking and most importantly a great lunch stop. Many of the sites that are on my list to review are the same ones that the Maine Geological Survey has featured in their Maine Geologic Facts and Localities series. This has been a great starting point for my planning.

The purpose of these trips is to provide a nice fun outing and a learning experience for our life-long learning students. I would appreciate any support GSM members can offer, from volunteering to be a guide to offering any advice. If you are interested please contact me, Cheryl Fontaine, at cwfonta@gmail.com or phone at 207-462-3339.

MEMBER NEWS

Books Available

I have extra copies of 3 books I have gotten while doing a rafting trip down the Colorado River. I would like to offer this set to anyone. The books are as follows:

Belknap's Waterproof Grand Canyon River Guide: this is a gorgeous, full color guide that goes by mileage and offers info on flora and fauna and points of interest.

Guide to the Colorado River-Part 1 (Lee's Ferry to Phantom Ranch): written by 2 geology professors at BYU.

Guide to the Colorado River-Part 2 (Phantom Ranch to Lake Mead): same authors as Part 1.

They are essentially new and chock full of geologic info. I will gladly mail to whomever is interested. They can email Helena Hollauer at helena@envirotech.me.

SECRETARY'S REPORT

GSM held no formal business meeting since the latest Secretary's Report, provided in February 2020. There are no minutes to report at this time.

The Executive Council (EC) met several times by Zoom so far in 2020: January 17, June 18, August 10, and September 8. The EC has discussed planning for (and postponing or cancelling) the spring 2020 meeting and summer 2020 field trip, EC nominations, updates to the GSM website, and the Walter Anderson Fund (funding for student projects as well as updates on fundraising).

The next business meeting of GSM will be held virtually during our fall meeting, December 4, 2020.

Respectfully submitted by

Lisa Jacob, Secretary
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207-829-5016

TREASURER'S REPORT

Fiscal Year August 1, 2019 to July 31, 2020

The fiscal year 2019–2020 was unlike any other in recent history. The spring meeting and summer field trip were canceled due to COVID-19. This resulted in fewer expenses than in a normal year. Both of our funds for supporting geologic Education, the Walter Anderson Fund and the Kevin McCartney Fund increased this year. Not knowing when it will be safe to meet again in a large group, the fiscal year 2020–2021 may be much the same.

Income	Actual
Dues Paid	\$4790.00
Donations to the Anderson Fund	\$2706.13
Donations to the Kevin McCartney Fund	\$225.00
Payment for "Geology of SW Maine" author Arthur Hussey	\$15.00
Subtotal	\$7,736.13

Expenses	
Dues Letter mailing	\$220.19
<i>Meeting Expenses</i>	
Fall Meeting 2019	\$1,480.00

Corporate Report Fees for 2018 & 2019	\$70.00
<i>Anderson Fund</i>	
2020 Anderson Fund Research Award to Sahra Gibson	\$1,000.00
<i>GSM Website</i>	
Annual hosting plan cost	\$280.40
Online payment processing costs	\$559.41
Subtotal	\$3,610.00
Net Increase	\$4,126.13

Annual Asset Summary, July 31, 2020

Account	Sub-Account	July 31, 2020
General Fund	Maine State Credit Union	
	Business Savings	\$26.84
	Checking	\$7,086.25
	Sub-Total	\$7,113.09
Anderson Fund	Bath Savings Trust	
	Managed Account	\$31,053.63
	Sub-Total	\$31,053.63
Kevin McCartney Fund	Maine State Credit Union	
	Business Savings	\$230.37
	16-month CD 2.75% *	\$10,564.96
	Sub-Total	\$10,795.33
Total Assets	All Funds	\$48,962.05

* Note: The 16-month CD matured on 8/15/20 and was rolled over to a 1-year CD with a yield of 0.45%

Respectfully Submitted,
Bruce Hunter, GSM Treasurer

UPCOMING EVENTS

<u>Date</u>	<u>Event</u>	<u>Location</u>	<u>Organizer</u>
Mondays 2020-Spring 2021	Virtual Borns Symposium	Virtual	University of Maine Climate Change Institute
December 4	2020 GSM Fall Meeting	Virtual	GSM
December 7-11	2020 American Geophysical Union Fall Meeting	Virtual	www.agu.org
2021			
March 1	Anderson Fund grant proposal deadline		GSM
March 7-10	Prospectors & Developers Association of Canada (PDAC) Annual Convention	Virtual	Prospectors & Developers Association of Canada www.pdac.ca
March 14-16	56 th Annual Meeting of the Northeastern Section of the Geological Society of America	Virtual	Geological Society of America Northeastern Section
March 15-19	52 nd Lunar and Planetary Science Conference	Virtual	Lunar and Planetary Institute and NASA
March 25	2021 Maine Sustainability & Water Conference	Virtual	Senator George J. Mitchell Center for Sustainability Solutions
May 17-19	GAC-MAC Joint Annual Meeting	Hybrid London, Ontario	gacmac2021.ca/

Please submit events to include on the calendar to the Newsletter Editor: amber.h.whittaker@maine.gov

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 a field trip). A newsletter, *The Maine Geologist*, is published for all members three times a year. The Society year runs from Aug. 1 to Jul. 31. Annual dues and gift or fund contributions to the Society are tax deductible. There are four classes of membership:

2021 FEE SCHEDULE

\$ 30.00 REGULAR MEMBER	Graduate geologists, or equivalent, with one year of practice in geology, or with an advanced degree.
\$ 30.00 INSTITUTIONAL MEMBER	Libraries, societies, agencies, businesses with interests in or practicing geology and related disciplines.
\$ 15.00 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	\$ 30.00	\$ _____	Name _____	Make checks payable to:
Institutional Members	\$ 30.00	\$ _____		Geological Society of Maine
Associate Member	\$ 15.00	\$ _____	Address _____	Bruce Hunter, GSM Treasurer
Student Member	\$ 5.00	\$ _____		44 Old Fairgrounds Rd
Contributions to GSM		\$ _____		Readfield, ME 04355
(please write gift or fund on check)				
TOTAL ENCLOSED		\$ _____	_____	

Email Address _____

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

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.

Items for inclusion in the **Newsletter** may be directed to:

Amber Whittaker, Newsletter Editor
amber.h.whittaker@maine.gov
 207-287-2803

2020/2021 SOCIETY YEAR BEGAN August 1
PLEASE SEND DUES TO TREASURER.

THE GEOLOGICAL SOCIETY OF MAINE
 c/o Bruce Hunter, GSM Treasurer
 44 Old Fairgrounds Rd
 Readfield, ME 04355

PLEASE PAY YOUR DUES!

THE GEOLOGICAL SOCIETY OF MAINE EXECUTIVE COUNCIL

President	Sarah Hall	(2020)	College of the Atlantic, shall@coa.edu
Vice President	(Vacant)		
Secretary	Lisa Jacob	(2020)	Sevee & Maher Engineers Inc., ljj@smemaine.com
Treasurer	Bruce Hunter	(2020)	Maine DEP, bruce.e.hunter@gmail.com
Newsletter Editor	Amber Whittaker	(2020)	Maine Geological Survey, amber.h.whittaker@maine.gov
Website Admin	Cassandra Rose	(2021)	Governor's Office of Policy Innovation and the Future
Councilors	Martin Yates	(2020)	University of Maine, yates@maine.edu
	Mike Deyling	(2020)	CES, Inc., mdeyling@ces-maine.com
	Henry Berry	(2021)	Maine Geological Survey, henry.n.berry@maine.gov
Historian	Daniel Belknap	(2020)	University of Maine (retired), belknap@maine.edu