



The Maine Geologist

NEWSLETTER OF THE GEOLOGICAL SOCIETY OF MAINE

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PRESIDENT'S MESSAGE

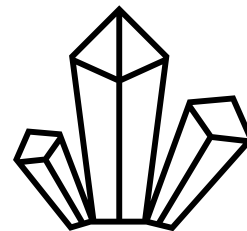
I only knew Walter Anderson from brief encounters during GSM meetings, but upon hearing of his passing and reading his obituary, my immediate feeling was what a tremendous loss to our community. He accomplished so much in his time. It is easy to imagine that most of us would be quite satisfied with accomplishing just a small fraction of what he has done for Maine geology. A great man, a great life, and an inspiration to us all. I am hoping you can join me in doing a small part to honor his memory by making a donation to the Education and Professional Development Fund (formerly known as the Walter Anderson Fund) through the GSM website. All gifts are welcome and money will go toward helping the next generation contribute great things to our Maine geologic community.

After the 2025 summer field trip, I heard many affirmative things, but not all comments were positive. One negative aspect was the lack of a good place to camp, which consequently reduced the opportunity for fellowship—a key component of any field trip. After all, where else is the best place to lounge around a campfire, sit in the dirt, drink a fine beer, and tell stories of the past? Isn't that what drew many of us to geology in the first place? Reflecting on those comments, I could not get out of my mind that Ricky Nelson song, "Garden Party." In case you are not familiar with it, Ricky penned this song following a Madison Square Garden concert that did not go as planned... Or should I say the crowd's response to his singing did not go as planned? His subsequent song, reflecting on that concert, has this lyric: "*But it's all right now, I've learned my lesson well. You see, you can't please everyone, so you've got to please yourself.*" Perhaps that is the theme of this year's summer field trip. Having spent the last several seasons in the Midcoast region, we are heading to a field trip destination that I have

imagined for many years. So, if you do not like the idea, please blame me. I think I have that Horace Greeley quote right (or close), which was "Go Downeast, Young Man."

This year we are headed Downeast and I am hopeful that many of you can join us despite the travel time. This will be a tremendous opportunity for fellowship and learning, and I cannot think of a better place to camp in Maine. We have a reservation to stay at Cobscook Bay State Park on July 24 and 25, with trips on Saturday and Sunday July 25 and 26. If you have not yet been to Cobscook Bay State Park, I highly recommend it. I believe the campsite is on or at least within throwing distance of Whiting Bay, with many opportunities to explore the area via boat or on foot. The trip logistics are coming together, and we hope to offer some excellent bedrock, Quaternary, coastal, and environmental geology sites. Also in the works is a stop at an 8,000-year-old Passamaquoddy village that is also a Superfund site. Stay tuned, and if anyone out there feels they have something to offer in the way of some expertise in Downeast geology, please let us know if you would be willing to lead a trip stop. I also hope to see you all at the GSM Spring Meeting at Bates College Commons on April 3, 2026, from 1-5 PM.

Sincerely yours,
Rich Campbell
GSM President



NEWS FROM THE STATE GEOLOGIST

Although it was an unusual year at the Maine Geological Survey (MGS), 2025 ended up being a very successful one. For only the second time since the inception of the USGS STATEMAP program in 1993, MGS did not have a federally funded field mapping project to complete. While this was unsettling at first, our surficial and bedrock geologists took full advantage of the gap year to tackle unfinished projects that in some cases went back decades. As a result, we fully cleared our backlog of legacy publication commitments and [published a total of 27 geologic maps in 2025](#), which we believe is a record for any year in MGS history.

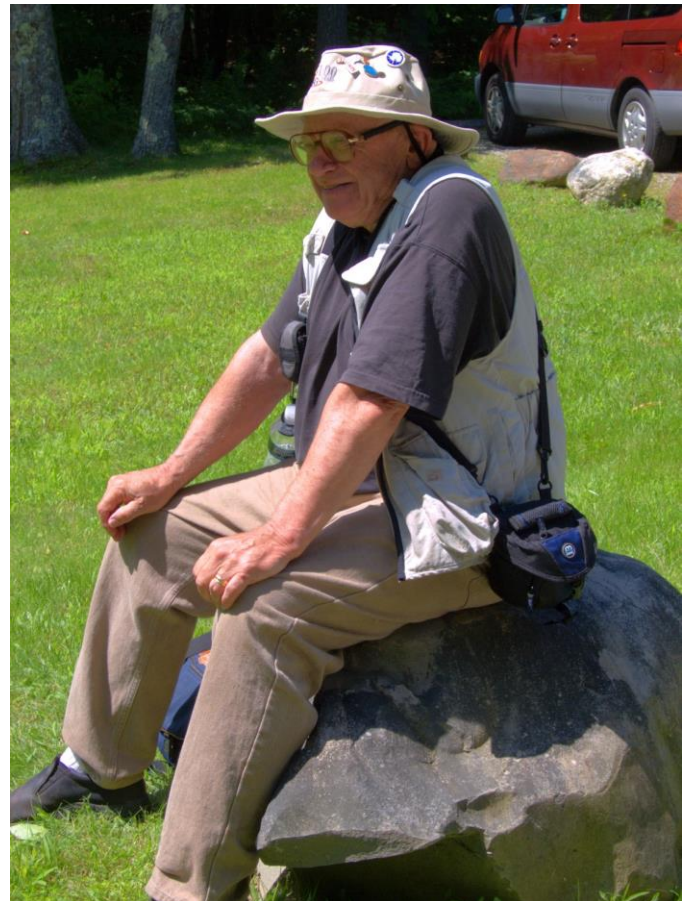
Also in 2025, our NOAA-funded “Resilient Maine” (also called the Climate Resilience Regional Challenge, or CRRC) grant projects really started to take off, with a growing network of wells that are equipped to monitor saltwater intrusion, and bluff mapping that is expanding northeastward from Casco Bay. With funding from the CRRC and the Maine Coastal Program, we were able to hire a helicopter pilot to take a series of over 13,000 high-resolution oblique photos of bluff coastlines in Penobscot Bay and Downeast areas. These images will be critical for accurate bluff scoring and mapping, as well as a fabulous resource for other coastal characterization efforts and historical analysis of shoreline change.

In less happy news, everyone at the MGS was saddened to hear of Walter Anderson’s passing in February, just shy of his 96th birthday. Walter was State Geologist from 1978 to 1995 and did much to build the modern Survey that we have today. He was very active and involved with Maine geology and conservation even through his last years, acting as a driving force behind the International Appalachian Trail, contributing to meetings and field trips, and serving on our State Mapping Advisory Committee. He was also well known for his fun, loud, inspiring, and charming personality—everyone around him was always energized and smiling! I will be forever grateful that Walter was with us for so long, and that I was lucky enough to overlap with him for a good decade of my time working in Maine geology. And I

will miss him, especially when the next field trip rolls around.

Ryan Gordon
State Geologist

A TRIBUTE TO WALTER ANDERSON



For many New England geologists, the Maine Geological Survey and Walter Anderson were synonymous. Through more than 28 years at the Maine Geological Survey (MGS), first as Assistant State Geologist, then as State Geologist, he built a modern and well-respected state survey that provided timely critical information to decision makers. He focused MGS work on matters of consequence to Maine people—the geologic framework of the State, groundwater resources, and coastal processes, among others. With a personality larger than life, under his sometimes-gruff exterior, there was a diamond in the rough.

Walter came to the MGS in 1968 from hot, flat, and crowded Houston, having spent several years at Texaco where he found success in offshore oil and gas plays. Why would the MGS hire a geologist with petroleum experience? With considerable interest at the time in offshore oil and gas potential in the Gulf of Maine and hundreds of miles of seismic lines already collected, it was opportune to have some in-house expertise at the MGS. (Walter often reminisced that this period of oil and gas exploration was partly responsible for establishment of The Hague Line which divided the Georges Bank between the U.S. and Canada.) Additionally, mineral exploration along the coast and in northern Maine had ramped up after two coastal mines began operations. It was a busy time at the MGS which had jurisdiction over exploration leases on state lands, including submerged lands along the coast and beneath lakes. Walter brought scientific rigor and integrity to interactions with the exploration community.

Walter was appointed State Geologist in 1979, serving in that capacity until his retirement in 1995. He immediately set out to restore the integrity of the MGS which had suffered from financial mismanagement and reputational harm under the prior Director. He quickly gained respect in the New England geological community and among decision makers through his tireless advocacy for the geological sciences and establishment of programs that addressed important societal issues. Strong collaborations with educational institutions, the USGS, and other agencies were essential to advancing MGS's mission. One of these collaborations was a multi-year effort with the USGS to map and characterize sand and gravel aquifers statewide. While these aquifers were important water supplies for many rural towns, the sand and gravel deposits were also widely used for landfills and industrial waste disposal. Many gas stations with notoriously leaky underground storage tanks were also sited on these deposits so systematic mapping was imperative! Walter established the hydrogeology program, hiring highly qualified people for its implementation. Although it took several decades to complete, the State has benefited

tremendously from his forward thinking that is still safeguarding important water resources.

Following severe winter storms in 1978, Walter initiated the coastal geology program focused on identifying areas most susceptible to coastal erosion to better guide development. Walter and the MGS marine geologists he hired sparred often with coastal communities over lack of consideration of geologic processes when permitting development on coastal dunes. Over subsequent years, MGS marine geologists mapped the geological environments of the coast, erosion rates in dune systems, offshore sand resources, and more, with much collaboration with the University of Maine. Walter also made no effort to hide his disdain for the Army Corps of Engineers, whose approaches to address erosion caused by their offshore structures did little more than exacerbate the erosion and raise false hopes in the ravaged communities. Camp Ellis is the prime example among many where the jetties have caused more than a century of erosion, and the Corp's physical model of the system incredibly lacked the Saco River, which is the system's primary source of sand. While a permanent approach has yet to emerge, Walter's efforts ensured money was not wasted on "solutions" that would be geologically ineffective.

The MGS currently has an information division that is the envy of geological surveys small and large with its origin in Walter's vision to make geological information widely available. What use is all the mapping if the information isn't made available to the public? In the early days he assembled a premier cartographic group and ensured that they had the best equipment to create and reproduce geologic maps and reports. After learning of GIS capabilities at an Association of American State Geologists meeting in 1985, Walter recognized the future of cartography and relentlessly pursued resources to modernize the MGS. For me, his advancement of GIS was my get-out-of-Houston-free card! From 1990–1995, the MGS completely converted from manual to digital map creation and was a national leader in geologic applications of GIS.

In the mid-1980s when the federal government identified two candidate sites in Maine for the long-term storage of high-level nuclear waste, Walter led the scientific effort to oppose this poorly conceived

effort. Earlier, the Department of Energy offered funding to some eastern states to improve geologic information. Walter accepted the funds, used them to assemble the 1985 bedrock and surficial maps of the state, collected seismic data across candidate sites, and then used the data to counter the feds—a classic Walter move! Later he would serve on Maine's Low-level Radioactive Waste Authority (MLLRWA), charged with finding suitable locations in the state for storage of low-level waste. Once referred to as "a prospector with an education" by a Department of Conservation commissioner, he parlayed the siting process into an opportunity to acquire state-of-the-art GIS equipment for the MGS. The siting process was challenging and even his seemingly boundless energy would flag under the constant barrage from those he referred to as "the Antis!"

Wearing his signature field vest festooned with pins and buttons from every geological organization, his Hastings magnifier carefully tucked in a pocket, perhaps sporting a bolo tie, he would testify before the Maine Legislature on all matters geological. His forthright approach won him many friends, and he had few qualms about challenging those with different opinions about coastal development or groundwater resources, just to name a few. But he often returned to the office exasperated by legislators who told him, "Don't confuse me with the facts!"

While he may have lacked patience with legislators, he always had time for students and young professionals. Many have spoken of the support he gave them early in their careers with things such as finding them field housing, connecting them with other geologists, or finding some funds to support their field work, and how it made an impact on their lives. At his retirement he instituted the Walter Anderson Fund at the GSM, now the Education and Professional Development Fund, as his legacy of support for students.

Finally, Walter liked a good joke. A favorite quip of Walter's was, "Stick with me and you'll be wearing apples as big as diamonds!" His penchant for jokes continued in his retirement when many of us suffered through his daily joke emails. Memorably, on a trip to a remote corner of Manitoba in the dead of winter to visit Canada's testing facility for underground storage of nuclear waste, the young

guys were in the front of the car driving, while Walter and the late Tom Eastler were in the back telling Maine jokes for hours nonstop! Whenever Eastler, as chair of the MLLRWA, would use the word "focus" in public meetings, Walter would mutter the punchline of one of those jokes, which would cause Tom to completely lose his composure! While his voice has been silenced, Walter's legacy continues through the many geologists whose lives he touched and the institutions he supported. We are forever indebted to him for his vision to create a broader understanding of Maine's geology and how it impacts our lives. "Shine on, you crazy diamond!"

Bob Marvinney
Retired Maine State Geologist

NEWS FROM THE CAMPUSES

University of Maine – Presque Isle

UMPI's GeoEnv Club went out to Little Madawaska Lake for a fun day of ice fishing on March 8. The primary purpose was to introduce students, particularly those from out of state, to this iconic Maine winter tradition but also to appreciate the natural beauty of northern Maine's landscape and to facilitate connections with former students currently established in various professional fields. The trip integrated an educational component focused on wildlife conservation and the importance of maintaining healthy aquatic ecosystems.

A new paper titled "Geology, geochronology, and geochemistry of the Pennington Mountain trachyte, northern Maine Appalachians, USA: Constraints on tectonic setting, petrogenesis, and REE-Nb-Zr mineralization" authored by Chunzeng Wang, David Lentz, Chris McFarlane, John Slack, Martin Yates, Amber Whittaker, and Robert Marvinney has been accepted for publication in *GSA Bulletin*. The study provides an in-depth look at the Pennington Mountain trachyte stock, which was derived from a depleted mantle source containing a Grenvillian crustal component and emplaced approximately 460 million years ago. This research establishes that high-pressure, crypto-explosive

brecciation within a cooling, fractionating subvolcanic magma can serve as a primary mechanism for generating REE-Nb-Zr mineralization. It provides a definitive petrogenetic model linking A-type alkaline magmatism in an extensional setting to critical metal enrichment. These findings underscore the importance of intracrustal volatile exsolution and explosive fragmentation as a key, underappreciated process in the metallogeny of rare earth elements and high-field-strength elements, offering a targeted exploration framework for similar alkaline systems regionally and globally.

Chunzeng Wang



UMPI GeoEnv Club members on an ice fishing trip.

Bates College

The Bates College Department of Earth and Climate Sciences (formerly Geology) is hosting the GSM Spring Meeting on Friday April 3 from 1–5 PM! Please see the announcement and registration link later in this newsletter.

Bates EACS/GEO has changed quite a bit over the last few years. Between retirements and departures, we have replaced 80% of our staff/faculty and made four tenure track hires since 2019. Joining Bev Johnson (who has been at Bates since 2001) are Rebecca Minor (who joined as an Assistant in Instruction in fall 2019), Shreya Arora (who started as an Assistant Professor in Geodynamics, fall 2022), and recently arrived Associate Professor Nick Balascio (started fall 2024), Assistant Professor

Rebecca Payne (started fall 2025), Assistant Professor Charlotte Connop (started winter 2026), and Visiting Assistant Professor Daniel Chupik (started winter 2026).

Shreya Arora teaches classes in tectonic hazards, structure, paleoseismology and a short term titled “Earth Science Methods: Data to Discovery.” She is a field geologist/paleoseismologist, working in the Himalayas, the Andes in Argentina and, more recently, Central Asia/Kyrgyzstan, investigating past earthquakes, their recurrence intervals, and building seismic hazard resilient frameworks for hydropower projects. Nick teaches courses in earth surface processes, sedimentology, and paleoclimatology. His research is focused on analyzing the physical and geochemical properties of sediment cores from the Arctic/Greenland and east coast of the U.S. to reconstruct past records of environmental change and paleoclimate. Rebecca is jointly appointed in EACS and Physics/Astronomy and teaches courses in the earth's climate system, climate modeling, and astronomy. Her research uses photochemical and climate models to study earth's climate history and exoplanet atmospheres. Charlotte is teaching courses in earth materials, metamorphic/igneous petrology, and high temperature geochemistry. Her research is focused on understanding the tectonic drivers of geochemical cycling during partial melting events and subduction. Daniel combines sedimentology, volcanology, and the tectonics of continental rift systems to understand the geologic and human history of an area. He is running a short term to Arizona this May. Bev continues to teach classes in earth surface processes including environmental and stable isotope geochemistry, hydrogeology, and coastal hazards. Her research has been focused on studying blue carbon dynamics in salt marshes, and she and colleagues have funding to characterize and expand *Welimahaskil* (sweetgrass—*Hierochloë odorata*) habitat along the margins of salt marshes.

As you can see, lots of exciting work is happening at Bates and we are all looking forward to growing the department in new and exciting ways. Reach out with questions, and we look forward to seeing you at the Spring meeting, April 3, 1–5 PM.

Bev Johnson



Students cleaning the walls of a trench near Ramnagar India, for Shreya Arora's short term titled "Investigating Past Earthquakes in the Western Himalayas" (May 2023).

available for participants on July 24 and 25. The preliminary agenda includes coastal, environmental, bedrock, and Quaternary localities. If you would like to lead a trip stop, please contact Andrew Collins (andrew.collins12 at gmail.com). Registration and more details coming soon!

NEW GSM WEBSITE

Thanks to Chris Halsted, the GSM has a new website with a new address: <https://www.geologicalsocietyofmaine.org/> We still own our old web address, so if you happen to type that one in, no problem—you will be routed to the new site. The new website has increased functionality that should allow us to set up events and communicate with members more efficiently. However, we were not able to migrate member accounts to the new site. ***This means that you will need to sign up for a new GSM account if you would like to pay your dues or make a donation.***

GSM SPRING MEETING

The GSM Spring Meeting will be held on April 3, 2026 at the Bates College Commons, Rooms 220/221, 136 Central Avenue in Lewiston (see [this map](#) for location and visitor parking areas). This meeting is all about highlighting student research! Students may present posters or give presentations about their work by submitting an abstract [here](#). Registration is free (please sign up by March 25) and there will be cash prizes for best poster and presentation. The full agenda is still being developed but the meeting will follow the usual format, starting at 1 PM with a short business meeting followed by a poster session, talks, keynote speaker, and a social hour.

THE EDITOR'S MESSAGE

The newsletter is distributed through email and on the GSM website in PDF format. Anyone with special needs should contact the Editor. Please send items of interest and photographs of GSM activities to: Lindsay Theis, Newsletter Editor
lindsay.theis@maine.gov

GSM WEBSITE:

www.geologicalsocietyofmaine.org
FACEBOOK: facebook.com/GSMMaine

GSM SUMMER FIELD TRIP

Save the date! The 2026 GSM Summer Field Trip will take place in Downeast Maine, July 25-26. Group campsites at Cobscook Bay State Park will be



SECRETARY'S REPORT

The Executive Council met in person in advance of the fall 2025 meeting to finalize the GSM meeting plans and 2026 field trip options.

Fall GSM Business Meeting Minutes, Friday, November 7, 2025

1. GSM President Rich Campbell welcomed everyone and opened the business meeting at 1:20 PM.
2. Previewing the 2026 summer field trip: Rich asked for a sense poll of interest in attending a Downeast field trip. Results were favorable.
3. GSM would like to give out more money to support student research and increase our efforts to nurture the next generation of geologists. The more we raise, the more we can award. All are encouraged to consider/promote funding opportunities, and all are encouraged to donate to the Education and Professional Development Fund. It would be ideal to raise sufficient principal to enable us to fund projects from the interest.
4. GSM member announcements:
 - a. Woody Thompson provided an update from the Friends of the Pleistocene: The group had a great meeting at UMass in June. The 2026 spring field trip will be May 29-31, and will focus on till, moraines, and glacial chronology in the eastern White Mountains, NH. The 2027 and 2028 field trips will be in the Albany, NY area and Nova Scotia. The Friends of the Pleistocene website will likely migrate to the NY Geological Society website from SUNY-New Paltz, (www2.newpaltz.edu/fop/).
 - b. Mark Woodruff and Henry Berry introduced a remembrance of Tom Weddle, GSM member and leader who passed away in summer 2025. Henry Berry provided remarks on Tom's life, work, and influence on Maine and its geology.

5. Rich closed the business meeting at 1:35 PM and introduced the invited speakers for the afternoon.

Respectfully submitted,
Lisa Jacob, Secretary
lj@smemaine.com

TREASURER'S REPORT

Activity in the GSM balance sheets since the last meeting falls into three categories: dues payments, outlay for the Fall Meeting, and donations to the EAPD Fund. Dues payments have been trickling in and almost 100 GSM members have paid dues for the 25/26 year. This newsletter has gone out to ~350 email addresses, so if you're reading this and haven't yet paid dues or joined GSM, please consider it! A reminder that it is now easier than ever to pay dues through the GSM website (<https://www.geologicalsocietyofmaine.org/>) or send a check to me at the address listed below. Plus, our membership rates haven't changed for years (in other words, still a good deal). To keep Fall Meeting costs down and to ensure an early November meeting date, the 2025 Fall Meeting took place at Colby College (following a good run of Fall Meetings at the Augusta Civic Center). Ultimately, the 2025 meeting cost came in at \$2,237.65, more than \$450 below the total outlay for the 2024 meeting. Following the passing of Walter Anderson in February, several GSM members have made substantial donations to the EAPD Fund (formerly the Anderson Fund). On behalf of those who will benefit from these funds in the future, Thank you!

As always, I'd like to remind everyone of a couple of things relating to the endowments:

1. The two endowment funds are there to support activities that GSM members wish to undertake. Please consider submitting an application through the GSM website if you would like some financial support for an activity.
2. Donations to the funds are accepted year-round (through the website or via a check in the mail). Every little bit helps grow the

funds such that GSM can keep offering support well into the future.

Please let me know if you have any questions.

Respectfully submitted,
Tom Whittaker, Treasurer
29 CMD Drive

Albion, ME 04910

Email: thomasewhittaker_at_gmail.com

Asset Summary
10/24/2025 to 3/15/2025

Fund	Account	Balance 10/24/25	Balance 3/15/25
General Fund	MSCU Checking	\$3,269.00	\$1,803.07
	MSCU Bus. Sav.	\$5.00	\$505.06
	<i>Subtotal</i>	<i>\$3,274.00</i>	<i>\$2,308.13</i>
EAPD Fund (prev. Anderson Fund)	Bath Savings Trust (managed acct)	\$54,113.03	\$54,029.35
Kevin McCartney Fund	Bath Savings Trust (managed acct)	\$22,462.41	\$22,481.57
<i>Combined Assets</i>	<i>Grand Total</i>	<i>\$79,849.44</i>	<i>\$78,819.05</i>

The GSM's current fiscal year runs August 1, 2025 to July 31, 2026. A summary of income and expenses for the MSCU checking account for the current fiscal year is provided below.

Final Fiscal Year 25/26 Balance Sheet for MSCU Checking Acct:

Income:	
<i>Dues payments received:</i>	
By check	\$450.00
Online (new website deducts fee)	\$2,047.60
Subtotal	\$2,497.60
Expenses:	
2025 Fall Meeting at Colby College	
Room Rental + AV support	\$0.00
Refreshments and table setup	\$1,841.65
Event Insurance	\$396.00
Total:	\$2,237.65
Dues reimbursement (overpayment)	\$60.00
<i>Donations to GSM Funds from Checking:</i>	
EAPD Fund	\$665.00
Online payment processing cost (old website)	\$148.35
Subtotal	\$3,111.00
Net income	-\$613.40

UPCOMING EVENTS

<u>Date</u>	<u>Event</u>	<u>Location</u>	<u>Organizer</u>
March 21-24, 2026	NEGSA	Hartford, CT	GSA
March 26, 2026	Maine Sustainability and Water Conference	Augusta, ME	Mitchell Center
April 3, 2026	GSM Spring Meeting	Bates College	GSM/Bates College
April 18-19, 2026	Maine Mineralogical and Geological Society Gem, Mineral and Jewelry Show	Portland, ME	MMGS
May 15-17, 2026	New England Mineral Conference	Newry, ME	New England Mineral Association
May 29-31, 2026	NE Friends of the Pleistocene Annual Reunion	Eastern White Mountains, NH	FOP
July 25-26, 2026	GSM Summer Field Trip	Downeast, ME	GSM

Please submit events to include on the calendar to the Newsletter Editor: lindsay.theis@maine.gov

PLEASE PAY YOUR ANNUAL GSM DUES VIA THE GSM WEBSITE:

<https://www.geologicalsocietyofmaine.org/pricing-plans/list>

****NOTE: You will need to create a new GSM member account on our new website to pay dues or make donations. You will be prompted to make an account when you select a GSM membership to pay dues (click the “Sign Up” button on the checkout page).****