

Fall Newsletter

2025

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Wisconsin Section - AIPG



President's Message

It's September 1st, a beautiful summer/fall day! I'm sitting on my porch watching hummingbirds at the feeder and listening to the sounds of crickets, cicadas, and multiple bird calls (including my neighbor's chickens). Fall is a great time to complete projects and prepare for, hopefully, a little down time to reflect and opportunity to grow our skills.

Recent state legislation has mandated continuing education for licensed professional geologists. Whether you are licensed or not, continuing education is necessary for us as professionals to improve our geological skills and keep up with changes in regulations and technology. With that in mind, we as a Wisconsin Section board have been discussing how we might help meet that need for continuing education and to facilitate greater community among our colleagues across Wisconsin.

With that in mind I sat down this past week with Dr. Kent Syverson, UW-Eau Claire geology professor and author of several geological resources for Wisconsin. Of note and greatest interest – the new statewide map of the [Quaternary Geology of Wisconsin](#). This long-awaited map is fifty years in the making, updating and improving a map originally published in 1976, now available as a free download from the WGNHS website. As one of the authors of the map, Dr. Syverson has graciously offered to provide a “tour” of the map to our group.

Our Section bylaws indicate that a Section members meeting should take place each fall, either in person or virtually. Having gotten off that schedule (something about a pandemic . . .) we would like to restart that important tradition by having a virtual meeting this fall. Following a brief business meeting, Dr. Syverson will give a 45-minute presentation on the new geology map, followed by a 15-minute Q&A. The meeting is scheduled for 12:00 – 1:15 p.m. Thursday, October 23rd. Mark your calendars and plan to attend! We hope this meeting will spark increased involvement in our local chapter and pave the way for regular AIPG educational events for Wisconsin's geologists.

See you October 23rd!
Mike

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Back to the Basics – Back to the Future of Geology

Chris Kelm (Lilek) – C.P.G. 10195

Dan Hunter (MN AIPG) and I assumed giving a combined in-person/virtual geology presentation to potential future geologists at RiverEdge Nature Center Environmental School on April 7, 2025, would be easy. Combined geoscience experience between the both of us exceeded 80 years!

Alas, it was back to the introduction to geology textbooks for both of us! We quickly realized there were so many basics we had forgotten. For example, do you remember that most rocks on earth are made up of oxygen, iron, silica, and aluminum? Without looking up a description of the sedimentary, igneous and metamorphic types of rocks, how would you describe these categories to high school students?

It was helpful for us and the students to have examples of these types of rocks to look at during the presentation. It was also helpful for us to have the students run field tests on the samples. How many field tests can you remember?

The field tests we taught the students to run were hardness, reaction to acid (vinegar), moisture reaction (does water run off or permeate the rock), fluoresce (using a black light), presence of fossils or crystals (use of hand lenses) and noting the color of the rock samples.

The students really enjoyed the fluorescent samples and listened and practiced carefully how to bring the sample to the hand lens, instead of bringing the lens to the sample.



Metamorphic fluorescent rock.

Photo: Chris Keim

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Back to the Basics – Back to the Future (cont.)

After learning some geology basics, Dan showed a virtual recording of a road cut formation in Hudson, Wisconsin (St. Croix County) featuring layers of limestone and dolomite. He explained how the formation layers occurred and how unique inclusion of crystals, fossils or sand pockets can be observed in this formation. I handed out copies of the geologic maps of Wisconsin and of St. Croix County, along with the Wisconsin stratigraphic column while Dan explained how these resources can be used to understand the rock formation.

Dan had constructed a shipping box for rock samples and each student got a Hudson roadcut rock from the box. The students then ran field tests on their samples. It was interesting to see the differences identified by the students. Some samples were all dolomite, some were all limestone, and some were a mix of dolomite and limestone.

We then sent the students outside to collect their own rock samples. They came back in and ran the field tests again and identified the rock samples successfully as sedimentary, igneous or metamorphic rocks.

Last, but not least, the students made their own edible rock formations out of pudding, whipping cream, rice crispies (vanilla and chocolate) and colored crystals (blue for water). They had to describe their rock formations before eating them!

It was a very good experience for both the teachers and the students with lots of excitement and good discussions after the presentation ended. This class was a combined 9th through 12th grade group of home-schooled students. We were able to provide them with an experience that their parents and RiverEdge teachers could not provide.



Edible rock formation example.
Photo: Chris Kelm

WE WILL BE PROVIDING ALL THE MATERIALS TO OTHERS IN AIPG AND ENCOURAGING THEM TO PRESENT TO OTHER SCHOOLS AROUND THE COUNTRY. THANK YOU FOR ALL YOUR SUPPORT AND ENCOURAGEMENT THE LAST 2 YEARS AS WE DEVELOPED THIS PRESENTATION.

Wisconsin Regulatory Updates

Federal Updates

Legislative and Regulatory Update

Lanette Altenbach

Wisconsin Regulatory Updates

The Professional Geologist administrative rule for Wisconsin has been updated and recently signed by the Governor.

The new rule requires 24 continuing education contact hours per every two years. These contact hours are required for the 2028 renewal (not for our next renewal in 2026). The rule has a list of acceptable continuing education, and it will be self-reporting (unless you end up audited as part of disciplinary review).

Also, for any interested professional geologist, there is an open position on the Professional Geologist board. To express interest, go to the state website and fill out an application.

The website is: <https://dsps.wi.gov/Pages/BoardsCouncils/GHSS/default.aspx>

In other state news:

For those also registered in Illinois - Illinois did pass the legislation required to extend the sunset date on professional geology registration to 2031.

Federal Updates

There are no federal updates to report.

AIPG 62nd National Conference, St. Louis, Missouri October 4-7, 2025



AIPG 62nd National Conference, St. Louis, Missouri

Join us October 4-7, 2025, for the 62nd National Conference of the American Institute of Professional Geologists in the vibrant city of St. Louis, Missouri! This year's theme, "**The Gateway for Tomorrow's Geologist**," promises to inspire and challenge us as we look toward the future of geoscience. The event offers a dynamic blend of field trips, technical sessions, and a fantastic array of networking and social events. Whether you're a seasoned geologist or just starting your career, this conference is a unique opportunity to expand your knowledge, connect with industry professionals, and enjoy the rich culture and history of the St. Louis area. Check out the schedule and field trip descriptions at <https://aipg.org/general/custom.asp?page=2025NationalConference>.

See you in St. Louis!

AIPG Membership Benefit - Geologize Course

The American Geosciences Institute, in partnership with the AAPG Foundation and the Society of Exploration Geophysicists, is offering AGI Member Societies FREE access to the [Geologize](#) online course "[Practical Geocommunication](#)." As a member of AIPG, you can take advantage of this free offer.

The course, valued at \$400 per person, provides an excellent opportunity for geoscientists to become more effective and powerful public ambassadors for our field, something that is urgently needed. Given the challenges facing both our field and society more broadly, it has perhaps never been more vital to effectively communicate geoscience to the public and other stakeholders.

HOW TO GET FREE ACCESS TO THE TRAINING

1. Go to the AGI society landing page [here](#).
2. Click on the 'AGI Access' button.
3. Register for the course (Free).
4. Click on the link 'Have a coupon?'
5. Enter the code '**aipg-agi-pggz-2324**' to remove the price.
6. Start learning!

Please note that the number of uses for this coupon is limited to our membership, so do not share this code with anyone outside our organization.

During the course, you will have access to lessons, quizzes, assignments, and direct interaction with the course instructor, Dr. Haydon Mort, through forums. The training counts as nine hours of Continuing Professional Development, and a certificate is provided upon completion. In addition to becoming a more powerful voice for geoscience, you can gain a valuable professional credential.

The free offer is available until the end of 2025, so you are encouraged to take advantage soon!

AIPG Membership Benefit Geologize Course: Practical GeoCommunication

Far From Boring, Yet Close to Home

After 43 years of marriage to a geologist and unwittingly becoming the best sample Sherpa ever, my husband knows there is no hope in dissuading me from any geology-related project I cook up. So, when I announced that as a long-term goal, I was going to collect a rock from each Wisconsin county (there are 72, in case you were wondering), he put his head in his hands and said, "When do you want to start?"

What neither of us counted on was finding hidden treasures that the average Wisconsinite may not realize exist in the state. So, allow me to introduce you to some of the places we have discovered, and some of the people we have met along the way.

In case you were wondering, as of January 1, 2025, I have visited 32 of the 72 Wisconsin counties.

Eau Claire and Clark Counties – In Search of the Eau Claire Volcanic Complex

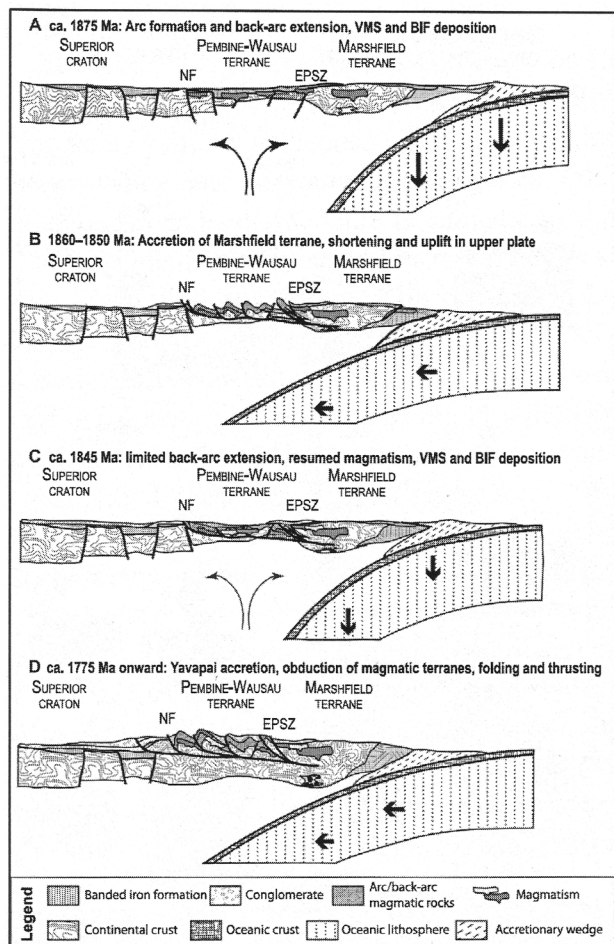
Paula Leier-Engelhardt

The 69th meeting of the Institute on Lake Superior Geology (ILSG) was being held in Eau Claire, Wisconsin in 2023, and the field trips that would be part of that meeting promised to provide the opportunity to see Paleoproterozoic rocks in that part of the state where you know they must be but are notoriously difficult to find. It is a testament to tenacity, scientific curiosity, and gallons of mosquito repellent that their story continues to unfold.

The rocks (sort of) exposed here are part of the Penokean Orogeny, a collisional orogen that resulted from the accretion of the Pembine-Wausau Terrane and the Marshfield Terrane onto the southern margin of the Superior Province. The classic model by Shultz and Cannon (2007) proposed an island arc (Pembine-Wausau Terrane) colliding with the Superior Province around 1880 Ma. The subduction zone flipped from south to north directed, with arc magmatism and back arc extension until about 1850 Ma, with the convergence of the Archean crustal block (Marshfield Terrane). During ocean closure, a double subduction zone formed volcanic arcs on both terranes. I always found this model incredibly complicated, but who am I to judge Shultz and Cannon?

Figure 1 -- Schematic illustration of revised tectonic model of the Penokean Orogen. From Lodge, Weber, and Hooper, 2023, Precambrian Geology of the Eau Claire River Valley: Re-discovering the Eau Claire Volcanic Complex, in Lodge, R.W.D. (ed.) Institute on Lake Superior Geology Proceedings, 69th Annual Meeting, Eau Claire, Wisconsin, Part 2 – Field Trip Guidebooks, v. 69, part 2, p. 1-26.

NF – Niagara Fault, boundary between Superior Province and Pembine-Wausau Terrane; EPSZ -- Eau Plaine Shear Zone, boundary between Pembine-Wausau Terrane and Marshfield Terrane.



At Big Falls County Park, we found the Eau Claire River roaring with unbridled springtime enthusiasm.

Based on recent U/Pb data, a revised tectonic model (see Figure 1) suggests a long-lived northward subduction along a continental margin, with repeated extensional and contractional regimes. A quasi-simpler model, but still pretty involved.

In Wisconsin, the Penokean Orogeny is best known for hosting several volcanogenic massive sulfide (VMS) deposits (i.e., the Flambeau Mine near Crandon). With the closing of that mine and the passing of the sulfide mining moratorium in 1997, mineral exploration and mining activities were essentially shut down in Wisconsin.

In 2002, the economically lucrative Back Forty VMS deposit was discovered in Michigan near the Menominee River, and in 2017 the sulfide mining moratorium was eased in Wisconsin. Exploration has begun again, but it is a little embarrassing to realize how little we know about the rocks and mineral wealth in this part of the state.

For example, the Paleoproterozoic rocks we were to see on the field trip are volcanic rocks (the Eau Claire Volcanic Complex) deposited on the Archean Marshfield Terrane. However, isotope data on these rocks indicate no inheritance from older sources, so they did not form on the Marshfield Terrane. And, although the existence of VMS deposits is well documented, the timing of their formation and their association with which terrane is problematic.

Our leader for the field trip was Robert Lodge from UW-Eau Claire, and we quickly learned the challenges he and UW-Eau Claire students regularly encountered. In this part of Eau Claire and Clark counties, the only place to find outcrops is along streams and rivers due to dense vegetative cover and wetlands. Plus, with the wet season we were having, do not envision a lazy river cruise floating on an inner tube. At our first stop at Big Falls County Park, we found the Eau Claire River roaring with unbridled springtime enthusiasm.

The Eau Claire River at Big Falls. Truth in advertising, that's for sure. Do not expect to get to the outcrops on the island – and now there is a sandbar. . .

*Photo:
Paula Leier-Engelhardt*



Comments heard included “. . .If you could get to the island, you would see. . .”; “. . .The sand bar now covers. . .”; “. . .Outcrop exposure changes all the time at the bridge. . .”; “You can get to the unconformity, but the rocks are wet and will be slick.” Thanks for the warning, but I still managed to fall on my butt!

The Eau Claire Volcanic Complex at Big Falls consists of banded amphibolite and gneisses intruded by tonalites. They have undergone upper amphibolite to granulite facies metamorphism and are interpreted to be layered mafic intrusions.



Banded amphibolite, Big Falls County Park. Significant metamorphism, yet primary features can still be observed.

Photo:
Paula Leier-Engelhardt

Speaking of the great unconformity, I did manage to get to it without killing myself and only bruised a shin. It is the nonconformable contact with the Cambrian Mt. Simon Formation and the banded amphibolites. At Big Falls, this contact has a thin blue-green clay layer which is not a paleosol but rather formed as a result of metasomatism from basinal brines. This event is recognized throughout the midcontinent and is related to MVT lead/zinc deposits.

The clay layer is not present everywhere. The nonconformity (without the clay layer) was also observed at the last stop of the day at the Rock Dam campground along Hay Creek. (By the way, Hay Creek could be navigated as a lazy river. . . at least that day). Here, the base of the Mt. Simon Formation is a pebble conglomerate in contact with a metarhyolite.

Significant metamorphism, yet primary features can still be observed.



Pebble conglomerate at the base of the Mt. Simon overlying metarhyolite at Rock Dam. Yes, one foot was firmly planted in Hay Creek to get this picture. *Photo: Paula Leier- Engelhardt*

And we even made the 6:00 o'clock news.

Rock Dam County Park and campground along Hay Creek are approximately 23 miles southeast of Big Falls, and the rocks here that are part of the Eau Claire Volcanic Complex are a mylonitized metarhyolite and a phyllite of unknown origin, both quite different from the mafic volcanics we had been seeing. These rocks are regionally significant, as they are some of the very few dated Penokean supracrustal rocks on the Marshfield Terrane.

This was the last stop of the field trip, so with my one wet foot, bruised shin, and numerous mosquito bites (but no ticks!) we turned east for home. I was reminded again of how geologists love a good puzzle but must have the patience of Job, the death wish of a 2-year-old toddler, and the proverbial curiosity of a cat to find the evidence to piece together these ancient stories. We don't realize how unfathomable that must be to the general public, to try to solve a puzzle that in all likelihood will not be completed in our lifetime.

Because someone keeps looking and keeps finding puzzle pieces!

Do check out the city of [Eau Claire](#) for a long weekend. It started out as a lumber town and has done an admirable job of honoring its past while becoming its present self. It has a college town vibe without the big city issues of Madison.

And it loved all of us there for the ILSG meeting. We even made the local news. The bus driver for the field trip was also a [local news anchor](#), and sure enough there we were on the 6:00 o'clock news.

We're cool like that.

**WI Section-AIPG
Annual Meeting
(virtual)
October 23rd, 2025**

References regarding the Penokean Orogeny and the 69th Annual ILSG meeting include:

- Ames C. (Ed.), Institute on Lake Superior Geology Proceedings, 69th Annual Meeting, Eau Claire, Wisconsin, Part 1 - Abstracts and Proceedings. v.69, part 1
- Lodge, R.W.D. (Ed.), Institute on Lake Superior Geology Proceedings, 69th Annual Meeting, Eau Claire, Wisconsin, Part 2 – Field Trip Guidebooks. v.69, part 2
- Schulz, K. J., and Cannon, W. F., 2007, The Penokean orogeny in the Lake Superior region: Precambrian Research, v. 157, p. 4-25.
- Zi, J-W., Sheppard, S., Muhling, J. R., and Rasmussen, B., 2021, Refining the Paleoproterozoic tectonothermal history of the Penokean Orogen: New U/Pb age constraints from the Pembine Wausau terrane, Wisconsin, USA: Geological Society of America Bulletin, v. 134, p. 776-790.

Wisconsin Section-AIPG Annual Meeting
Virtual meeting – Thursday, October 23rd, 12:00-1:30 pm

Please join us for a brief business meeting, followed by a presentation by Dr. Kent Syverson on the new Wisconsin Quaternary geology map.

Much of Wisconsin was glaciated during the Ice Age. Today we build structures on glacial sediments and deal with groundwater contamination in those same materials. The Wisconsin Geological and Natural History Survey (WGNHS) recently published a new, wall-sized Quaternary Geology of Wisconsin map (1:500,000 scale, Rawling III et al., 2025). Dr. Kent Syverson, a co-author of the new map, will use the map as a framework to briefly discuss glacial sedimentary units and the glacial history of the State of Wisconsin. The talk will be useful for a person who works on geology-related projects in Wisconsin.

Kent M. Syverson is a Professor of Geology and Environmental Science at UW-Eau Claire. He received his BS in geology from UM-Duluth and his MS and PhD in glacial geology from UW-Madison. He conducted his PhD research in Glacier Bay, Alaska, as part of the National Geographic Society's Burroughs Glacier Expedition. At UW-Eau Claire, he has conducted glacial geology research with undergraduate students in Maine and Wisconsin. He mapped the glacial geology of Washington and Chippewa counties for the WGNHS (Mickelson and Syverson, 1997; Syverson, 2007). He also published an overview about the glacial history of Wisconsin (Syverson and Colgan, 2011). He has used his geology, geotechnical, and hydrogeology expertise as a consultant in the frac sand and dairy industries. Syverson is the 2012 recipient of the UW-Eau Claire Excellence in Teaching award and author of the book "Adventures in Glacier Bay" (Syverson, 2020; Amazon).

Geology in the News

Geology in the News

WGNHS Year in Review

Check out the Wisconsin Geological and Natural History Survey [2024 Year in Review](#). The review comes out in April, summarizing the main geological mapping projects, groundwater studies, data preservation efforts, and outreach activities from the past year and highlights the variety of new maps, data sets, and other products published by WGNHS staff and network of important collaborators.

Combining geology and vacations. . .

Who among us has not coerced family members to endure some sort of ‘field trip’ disguised as a vacation or a relaxing hike? (Ask any of my extended family about various Leier Family Death Marches). The American Association of Petroleum Geologists weekly newsletter *GeoLifestyle: Where geology meets daily life* – provides just the right combination of geology and things to do that may make family less hesitant to join you on an adventure. Recent topics include [Florissant Fossil Quarry](#) near Colorado Springs; a journey along [Ecuador’s volcanic zones](#); and for the less adventurous [reviews](#) of the movie *Jurassic World Rebirth* and the TV series *Landman*.

Iceland, not so much, but Kilauea. . .

It has quieted down in [Iceland](#), but eruptions continue in [Hawai’i Volcanoes National Park](#).

And let’s not forget about Alaska

[July 16, 2025](#)

Revealing more secrets about the Early Cretaceous world

A [rare, pregnant ichthyosaur fossil](#) helps scientists better understand not just the animal, but our planet’s geology.

SEPM Field Conference – October 4-5, 2025

[77th Annual Tri-State / 38th Annual Great Lakes Section Society for Sedimentary Geology \(SEPM\)](#) Black River Falls, Wisconsin October 4-5. Topics will include Cambrian stratigraphy, and structure and geochronology of the Archean Marshfield Terrane.

September is AIPG Member Appreciation Month

September is Member Appreciation Month. As a thank you, we invite AIPG members to attend the September Lunch and Earn for free. Watch for details regarding the talk and presenter!

We also are waiving the CPG application fee for any member who completes and submits their CPG application between September 1 and September 30, 2025. For those who choose to submit a paper application, we will base the waiver on your postmark, so be sure to drop that application in the mail within the appropriate date window.

Our members are the lifeblood of AIPG. I give all of you my most heartfelt thanks.

The National Office Staff and I wish you all the best,
Dr. Aaron Johnson, CPG, PG, AIPG Executive Director