

**AIPG Student Chapter at Michigan Technological University**

**Fall 2021 - Spring 2022**

**Annual Report**

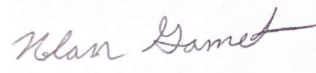
**President: Elana Barth**



**Vice President: Olivia Salavaggio**



**Secretary: Nolan Gamet**



**Treasurer: Emilie Pray**



**March 30, 2022**

**Michigan Technological University****Houghton, MI 49931****Table of Contents**

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### **1. Inclusive dates of the year being reported**

For the 2021-2022 academic year, the Michigan Technological University (MTU) AIPG Student Chapter aimed to reach out and provide resources to students while in quarantine. In the Fall semester of 2021, the MTU student chapter focused on improving students' professional skills by hosting resume building meetings and allowing students to gain information on opportunities at the university, such as graduate school. The student chapter wanted to provide fun, socially distanced activities to allow students to unwind during the busy school year. In the Spring 2022 semester, the student chapter focused on providing fun activities for students as well as providing information on important topics worth studying for, such as field camp and ASBOG. The MTU Student Chapter will continue to plan similar informative activities for the 2022-2023 academic year. For this reason, the 2021-2022 annual report will include information from September 2021 through April 2022 with highlighted dates as follows:

September 15: First semester meeting

September 20: Resume Roast

September 27: ASBOG Jeopardy

October 2: Gierke's Blueberry Farm

October 16: Quincy Mine Tour

October 27: Pumpkin Carving

October 29: "The 33" Movie Night

November 3: Grad School Presentation and November meeting

November 9: Poster Meeting

November 16: Among Us Night

January 12: First meeting of the year

January 26: Meet a Professional

January 30: Eben Ice Caves Trip

February 14: Resume Roast

February 20: Hungarian Falls Field Trip (canceled due to weather)

March 17-18: Group Carpool to Central Michigan University for ASBOG Examination

## 2. Membership

### 2.1 Chapter Officers

#### 2021/22 School Year

President	Elana Barth	<a href="mailto:egbarth@mtu.edu">egbarth@mtu.edu</a>
Vice President	Olivia Salvaggio	<a href="mailto:omsalvag@mtu.edu">omsalvag@mtu.edu</a>
Secretary	Nolan Gamet	<a href="mailto:ngamet@mtu.edu">ngamet@mtu.edu</a>
Treasurer	Emilie Pray	<a href="mailto:empray@mtu.edu">empray@mtu.edu</a>

#### 2022/23 School Year

President	Grace Ojala	<a href="mailto:gmojala@mtu.edu">gmojala@mtu.edu</a>
Vice President	Max Stange	<a href="mailto:mastange@mtu.edu">mastange@mtu.edu</a>
Secretary	Hannah Miller-Young	<a href="mailto:hannahm@mtu.edu">hannahm@mtu.edu</a>
Treasurer	Emilie Pray	<a href="mailto:empray@mtu.edu">empray@mtu.edu</a>

### 2.2 Chapter Sponsor

Dave Adler, CPG - 11377	<a href="mailto:DAdler@manniksmithgroup.com">DAdler@manniksmithgroup.com</a>
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### 2.3 Faculty Sponsor

Dr. Chad Deering	<a href="mailto:cddeerin@mtu.edu">cddeerin@mtu.edu</a>
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### 2.4 Section President

Mellisa Powers-Taylor	<a href="mailto:powerstaylorm@michigan.gov">powerstaylorm@michigan.gov</a>
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### 2.5 Section Liaison

Cody Stoddard	<a href="mailto:stoddardc1@michigan.gov">stoddardc1@michigan.gov</a>
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## 2.6 Chapter Members

The MTU AIPG Student Chapter has 64 members, listed below:

Aidan Gabriel	Elliz McClelland	Logan Fike
Alexander Dartt	Emilie Pray	Maddy Anderla
Addison Goecker	Emily Street	Maddie Pugh
Austin Riggs	Emmeline Wolowiec	Maisy Snyder
Andrew Cooper	Fletcher McGuire	Max Stange
Anthony Bashur	Fritz Jaeger	Max Douglas
Antwan Smirnov	Grace Ojala	Natalea Cohen
Aritra Ghosh	Hannah Hunt	Nolan Gamet
Barbara LaTendresse	Hanah Miller Young	Olivia Salvaggio
Benjamin Neely	Ian Gannon	Peter Klein
Brandon Schultz	Isabella Metts	Rebekka Guyon
Breeanne Heusdens	Jacob Hawes	Ryan Schwiderson
Brendan Harville	Jack Kettelhod	Samuel Johnson
Bruce Bilgreen	Jake Maxon	Sarah Aardal
Cade Johnson	John Hagopian	Sentle Augustinus
Carlos Hernandez	John Myaard	Sienna Meekhof
Cassidy DeLeon	Joshua Bregger	Steven Shuhonen
Cassie Burch	Jordan Ewing	Stephanie Wiegand
Clarissa Gordon	Katherine Langfield	Tim Hauxwell
Dean Wozniak	Kolby Carpenter	William Cornillie
Elaine Girbach	Korrina Young	Zach Daining
Elana Barth		

### 3. Chapter Activities

#### September 15, 2021: First Chapter Meeting

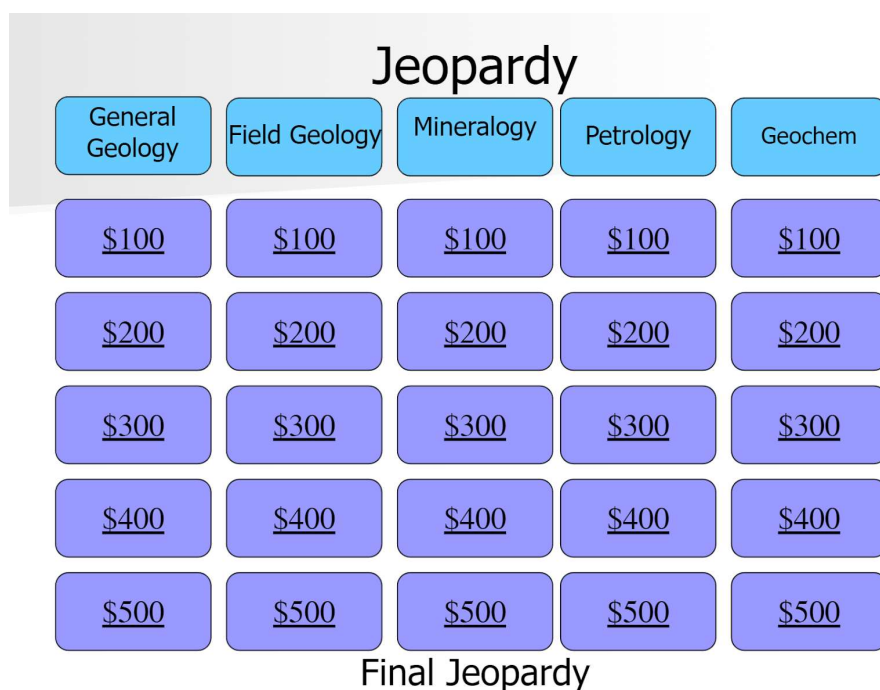
This was the first meeting of the semester besides the Eboard meeting conducted the previous week. We talked about how to join national and involvement link for those that have yet to do so, as well as ironing out the schedule for the upcoming semester.

#### September 20, 2021: September Resume Roast

The resume roast was a fun and exciting way to conduct a resume workshop. A member would volunteer to present their resume via overhead projector and then other members would discuss what needs to be done to their resume. We also went into detail regarding LinkedIn accounts and what makes them so important.

#### September 27, 2021: ASBOG Jeopardy

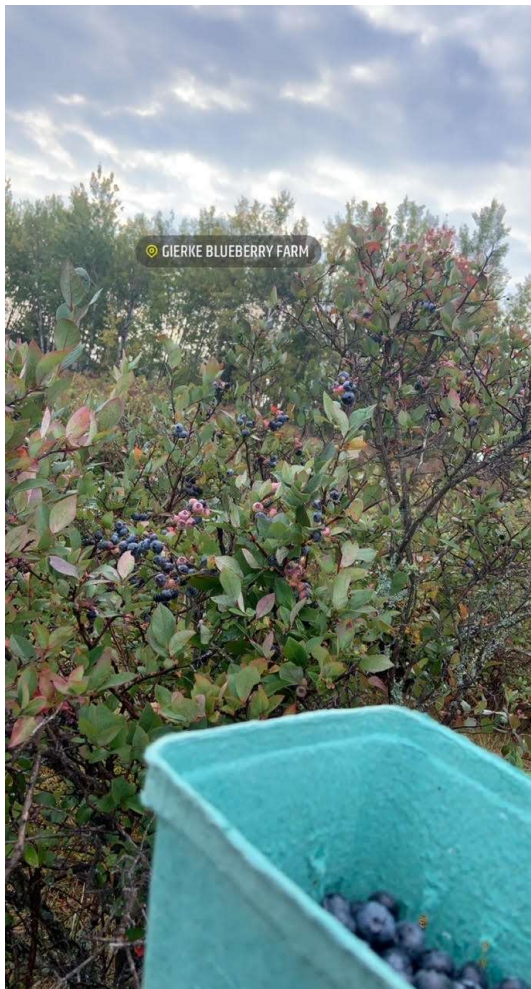
We played Jeopardy with the students that attended the event. The Jeopardy boards contained questions from a plethora of different geology topics outlined in the ASBOA website. The event was an okay turnout, but it was a great time for those that could make it.



*A screenshot displaying one of the three ASBOG Jeopardy boards created for the event.*

October 2, 2021: Gierke's Blueberry Farm

Students from the AIPG student chapter and GE 1100 caravanned out to Gierke's family farm. The day began with a geophysical survey of the water table beneath the blueberry patch, which was led by Elana Barth. Shortly after the demonstration, we all grabbed our own buckets and/or containers and began picking fresh blueberries. Students were even able to meet Dr. Gierke's friendly alpacas. We ended the day by learning how to make fresh apple cider from scratch. Students left the blueberry patch and headed to the apple orchard section of the farm to collect fresh apples. Dr. Gierke had students spread tarps out beneath the trees and then had them shake the trees until apples rained down. The apples were put into buckets and hauled to the apple masher and press. Once Dr. Gierke taught students how to use the machine, it was only a matter of time before everyone had a cup full of homemade apple cider. This event would not have been possible if it was not for Dr. Gierke and his family's wonderful hospitality.



*Picking blueberries and making homemade apple cider at Gierke's Blueberry Farm (photos by Nolan Gamet).*



October 16, 2021: Quincy Mine Tour

Students from AIPG, SME, and GE 1100 had the opportunity to get a tour at Quincy Mine in Hancock from Bob Baron and Tom Wright. It was a cold and rainy day which made it perfect for taking a walk back in history. The tour began at the adit entrance where Bob and Tom presented plenty of geological and historical information related to the Quincy Mine. Insights were given on the Mid-Continent Rift system, the mineralization of copper, the mining techniques used, and the history of the area during the booming years in the Keweenaw copper country. The in-depth tour provided ample learning opportunities for both the students and the professors that were able to make it to the event. From observing amygdules and ripple marks to standing on the Hancock fault line, the Quincy Mine tour demonstrates the importance of hands-on learning. Without Michigan Tech and the students who expanded the adit to what is seen today, this tour would not be possible. This amazing tour would not have happened without the guidance and hospitality from Bob Baron and Tom Wright.



*Bob Baron illuminating ripple marks for students to see. These ripples were exposed as a result of blasting a lava flow top unit within the Portage Lake Volcanics (photo by Nolan Gamet).*



### October 21, 2021: Class Registration Night

During this event, AIPG members discussed things like electives, difficulty of classes, and class-related plans. We also discussed the importance of creating Excel spreadsheets for the classes that you plan on taking. Students were recommended to bring their laptops so we could help them create their own plans. This was a great opportunity to bring up any questions, comments, concerns, or advice that students had regarding class registration.

### October 23-26, 2021: AIPG National Conference

Elana Barth and Sienna Meekhof made the long journey to the AIPG 2021 National Conference in Sacramento, California during the Fall semester. They proudly represented Michigan Tech's student chapter and accepted the prestigious Student Chapter of the Year award from the previous school year.



*MTU AIPG student members Sienna (left) and Elana (right) accepting the student chapter of the year award at the 2021 annual meeting in Sacramento, CA.*

October 27, 2021: Pretty Cool Pumpkins

Students from the MTU AIPG student chapter and the MTU Geology club gathered at the wonderful Boulder Garden on Michigan Tech's campus to carve some pretty cool pumpkins and/or gourds. Students brought their own pumpkins, or gourds in some cases, and demonstrated their amazing carving skills. Who would have thought that geologists could be such great artists? Carving pumpkins can get pretty messy, so buckets were used for the fruit innards and a tarp to collect everything else. We attempted to choose a winner for best carving, but the competition was too great to decide. A special thanks goes out to Dean Wozniak for supplying the scooping utensils and various carving blades.



*Student AIPG members showing off their pretty cool pumpkins (photo by Elana Barth).*

October 29, 2021: “The 33” Night

Students gathered on the very spooky Friday before Halloween to watch the movie, “The 33”. This movie is based on a real-life event that took place in Chile. A gold and copper mine collapsed and it trapped 33 miners underground for 69 days. A thrilling and eye-opening movie was the perfect opportunity to get spooky before Halloween Eve the following day. The movie may have made some aspiring mining geologists rethink their future career path (just kidding).

November 3, 2021: Graduate School Presentation and November Meeting



Students from the MTU GMES department and the AIPG student chapter gathered for a graduate school presentation/discussion brought to them by Dr. Luke Bowman. This was an informal meeting where students could ask any question that they could think of regarding graduate school. Topics included the accelerated master's degree program, the senior status, the application process, and some other things. Those who are considering graduate school at Michigan Tech were compelled to attend. Special thanks goes out to Dr. Bowman for giving his presentation and to Brittany Buschell for the pizza and refreshments. After the graduate school presentation, the AIPG student chapter conducted their November meeting. Future plans, trips, and fundraisers were discussed in which input from the attendees were highly encouraged. The meeting ran smoothly and efficiently thanks to Elana.



*Is Graduate School right for you? Just a beautiful picture of MTU's campus (photo by MTU).*

November 9th, 2021: Tilden Mine Tour



A small group of students was able to participate in a surface mine tour of the Tilden Iron Mine. They were able to ask employees questions about the mine and the local geology. After the surface tour they were able to go on a plant tour and learn more about how the iron ore is processed (photo from Elana Barth).

#### November 16, 2021: Among Us Night

Students from the AIPG student chapter gathered virtually over Zoom for a friendly, but suspicious game of Among Us. The students that made an appearance showed their true fibbing skills, as well as demonstrating excellent willingness to complete tasks. Though there were no true winners, smiles and laughs were shared as students took a walk down memory lane. A special thanks goes out to Elana Barth for setting up this event, which allowed us to take a break from the stress that late semester projects and homework brings forth (photo from wikipedia.org).



#### January 12, 2022: First Meeting of the Year

This was the first meeting of the year in which we discussed ideas for upcoming events, test dates, and presentations for the Spring semester. Additionally, information regarding the upcoming executive board election, the available AIPG scholarships, MI section workshops, and the annual and MI section meetings were discussed to give chapter members ample opportunities to grow as a professional geologist.

January 26, 2022: Meet the Professional - Alex Villhauer

As part of our “Meet a Professional” series, designed to provide an intimate setting for students and early career professionals to meet and hear about interesting roles related to the field of Geology, AIPG proudly presents the January 2022 edition featuring Alex Villhauer of Arcadis, a practicing geologist who specializes in large-site characterization and emerging contaminants, including PFAS. Alex Villhauer is a Geologist at Arcadis with over ten years of experience in the environmental field. At Arcadis, Alex serves as a technical resource for industrial and federal projects with a focus on site investigation, emerging contaminants (including PFAS, 1,4-dioxane, and explosives residues and byproducts), and conceptual site model development (photo from arcadis.com). Notes for transcription:

PFAS = not good

January 30th, 2022: Eben Ice Caves Trip

The club took their annual trip to the Eben Ice Caves where we snowshoed the trails. One member brought a sled this year, so we sledged down some of the hills. The temperature was colder than last year and there were no mosquitoes, a definite win for the hikers (photo from Elana Barth).



March 17-18, 2022: ASBOG Examination

A group of four students carpooled together for 7 hours to take the ASBOG. They left on Thursday to stay overnight in Mount Pleasant, and then headed back to Tech after the exam on Friday. It was a long journey but a very short trip. The MTU AIPG student chapter is wishing those who took the exam the best of luck with regards to receiving passing scores (photo from [asbog.org](http://asbog.org)).



*National Association of State Boards of Geology*



#### 4. Member Activities

##### Nolan Gamet

Student member of MTU AIPG from Fall 2020 - Present  
Geological and Mining Engineering and Sciences Department (GMES) at MTU

##### USGS EDMAP Initiative - Summer 2021 Field Campaign

*“During the summer of 2021, I was lucky enough to join the 2021-2022 EDMAP Initiative for my Masters research project with the guidance from Dr. James DeGraff. EDMAP is a component of the National Cooperative Geologic Mapping Program that funds universities to help train future geologic mappers. For this specific project, I began mapping a segment of the Keweenaw Fault between the towns of Lake Linden and Mohawk in Michigan’s Keweenaw Peninsula. The Keweenaw Fault is a major thrust fault that runs along the center of the Keweenaw Peninsula and juxtaposes the Mesoproterozoic Portage Lake Volcanic series to the West and the Jacobsville Sandstone to the East. The fault resulted from the 1.1 Ga Midcontinent Rift System (MRS) which formed through extensive crustal extension and late compression of the North American plate during the Grenville Orogeny. A major reason for additional mapping in this region is because the Keweenaw Peninsula has not been mapped in great detail since the 1950’s. A “boots on the ground” strategy coupled with high precision GPS technology enabled me to collect high quality data that will be used to construct an updated geologic map of the project area. The data will help us better understand the fault’s movement, slip kinematics, and structure to improve its current geometry and associated deformation. I used a Trimble Geo 7x differential GPS to collect sub-meter accurate site locations, and a Brunton compass and the Field Move Clino phone app to collect measurements at each site. Important and well-known localities within my project area include Douglass Houghton Falls (shown in the images below), Wall Ravine (the Natural Wall of Calumet), and St. Louis Ravine.” This project has helped me grow as a geologist, appreciate the Keweenaw’s beautiful scenery, and expand my mapping skill set. Field work will continue through this upcoming summer, and I am excited for what this field season has to offer.”*



Douglas Houghton Falls is a well known and an important geologic field locality within my project area (top image). My advisor, Dr. James DeGraff, helped collect veinlet and fracture trends within a Portage Lake Volcanic unit along the Southern wall of Douglas Houghton Ravine, SE of the falls (bottom image). (Photos by Nolan Gamet)



Grace Ojala

Student member of MTU AIPG Fall 2018 - Present

Geological and Mining Engineering and Sciences Department (GMES) at MTU

Field Geology Courses

*“This past summer, I took the field geology and field geophysics classes that are required to graduate with a Geophysics degree from Michigan Tech. While both classes were a lot of work, they were both very interesting, and I learned a lot. In field geophysics, I learned how to practically apply the geophysical techniques that I had learned about in previous classes. For instance, we used a gravity survey to locate a now-buried glacial channel; this technique worked because the glacial till which filled in the channel was much less dense than the surrounding sandstone. In field geology, we learned how to create accurate, professional geological maps using field surveys. For example, we mapped the cliff face at Harvey’s Quarry in Marquette, Michigan, as shown in the figure below. The outcrops at this location are incredibly and geologically complex, so the project was challenging, but interesting and very memorable.”*



Massive quartz vein that signifies the fault and unconformity between the Mona Schist and Mesnard Quartzite in Harvey’s Quarry, Marquette, MI. Myself for scale (Photo from Grace Ojala).

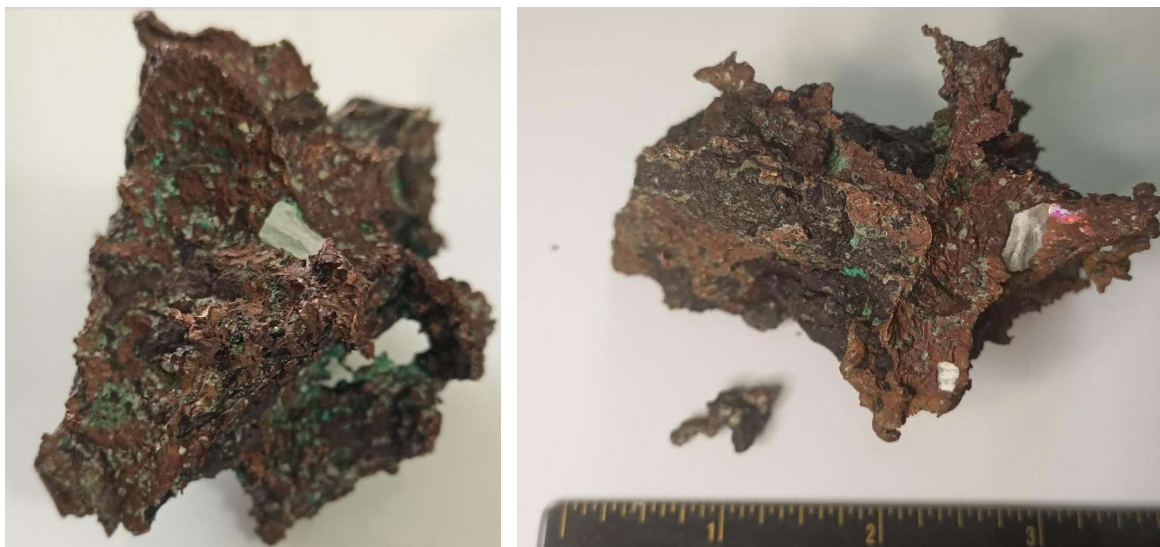
Hannah Miller Young

Student Member of AIPG Fall 2021 - Present

Geological and Mining Engineering and Sciences Department (GMES) at MTU

Moving to the Keweenaw Peninsula

*“Moving to the Keweenaw Peninsula has been an absolute treasure. Upon my decision to return to school, my husband and I purchased a plot of land that came with some interesting finds. Light rail mining transportation had previously traversed the property to deliver copper ore to the stamp mill powered by Redridge Dam. One afternoon last year while puttering around a building project, I spotted a suspicious blue-green object about the size of my hand amongst some brown leaves. As I picked up the specimen, I immediately realized it was a solid piece from a vein of native copper – its heft and sharpness cut into my fingers from curious study. Upon conjecture, it likely tumbled off one of the rail carts while being transported, and sat there ever since (like a rock). The mining company's unknown loss has turned into my gain as we now have more insight into the past. The specimen was originally one piece, but a small chain has since separated. The small chain is approximately 1.9 cm x 1.2 cm, and the large specimen is approximately 6.3 cm x 9.1 cm, with a combined total weight of 293.3 grams with quartz embedded within the ore. It goes to show that if you know what you are looking for, it might just make itself known.”*



Native copper with quartz and calcite growths and secondary minerals such as malachite (photos by Hannah Miller Young).

Elana Barth

September 2019 - Present

Geological and Mining Engineering and Sciences Department (GMES) at MTU

2022 Field Geophysics TA Experience

*“This year I was the TA for Field Geophysics and we were doing a gravity survey at Bear Lake Road. One of the groups became “friends” with a grouse. So I, who was attacked by a grouse when I was a student in Field Geology, responded “that's not your friend, that's a monster”. They all laughed at me and called me crazy until they moved a station down, closer to the nest, and the bird started getting aggressive. It started pecking at people's feet/legs, so the bird was shooed away with a foot (not by me). The grouse now thoroughly ticked off, got up, looked me dead in the eye and charged me. So I did what any ex-cross country runner would do, and booked it down the road, grouse in tow. All of the students laughed at me until I was out of sight.” -There is no video evidence of this event-*



Dr. Jeremy Shanon balancing a ruffed grouse on his boot (Photo by Elana Barth).

Dave Adler, CPG-11377, Chapter Sponsor

August - October 2021

## Upper Peninsula Field Trips

*"I was fortunate to be able to make three field trips to the Upper Peninsula during the 2021-2022 academic year. In August 2021, I went on a field trip to Marquette to explore some of the Marquette region's 70 plus waterfalls and some of the other geologic features of the area. One of the highlights was a hike through the Dead River Gorge where there are 10 separate waterfalls and some spectacular scenery (see Photo 1). The Marquette area also has some of the best outcrops of the ancient (Archean) pillow basalts preserved in the Mona Schist at the mouth of Whetstone Brook by the Marquette bike path, behind the old Best Buy store on US 41 in Marquette, and along westbound US 41 in Negaunee Township across from the Schunk Furniture store (see Photo 2). In September, my wife Martha and I visited Marquette and the Keweenaw Peninsula. We went to Presque Isle Park and toured the historic Marquette Harbor Lighthouse while in Marquette. We visited Hunter's Point, Bare Bluff, Central, Brockway Mountain Drive, and Horseshoe Harbor while in the Keweenaw, and took a memorable day trip to see 10 waterfalls in the westernmost U.P. including Bond Falls, Agate Falls, and waterfalls along the Black River National Scenic Byway and along the Presque Isle River at Porcupine Mountains Wilderness State Park (see Photos 3 and 4). I returned to the Keweenaw in October, stopping at Champion Mine along the way and visiting the A.E. Seaman Mineral Museum on the Michigan Tech campus in Houghton. On October 16, 2021, I joined the MTU AIPG Student Chapter and Geology Club for a special guided underground tour of the Quincy Mine in Hancock. The Quincy Mine tour, led by Tom Wright of the Quincy Mine Hoist Association and Bob Barron of the MTU Geological and Mining Engineering and Sciences Department (now retired), was an unforgettable experience (see Photos 5 and 6). SAY YES TO MICHIGAN."*





**Photo 1: Archean Mona Schist (Lighthouse Point Member) at Stony Mills Falls in the Dead River Gorge**



**Photo 2: Ancient Pillow Basalts Preserved in the Lower Member of the Mona Schist at Whetstone Brook in Marquette**





**Photo 3: The Jacobsville Sandstone at Agate Falls in Ontonagon County**



**Photo 4: Precambrian Black Slate of the Cops Formation at Bond Falls in Ontonagon County**





Photo 5: MTU AIPG Student Chapter/Geology Club Group at Quincy Mine Adit in Hancock



Photo 6: MTU AIPG Student Chapter/Geology Club Group Inside The Quincy Mine in Hancock

### **5. Secretary's Report - Nolan Gamet, MTU AIPG Student Chapter Secretary for 2021/2022**

As the Secretary of the MTU AIPG Student Chapter, I was responsible for keeping track of all relevant information over the 2021 – 2022 academic school year. I attended all meetings and participated to the fullest of my ability. Outside of meetings, I attended events that were put on by our student chapter and events that included both AIPG and the MTU Geology Club. During the Spring 2022 semester, I reached out to AIPG members to collect summaries of activities they have participated individually in within the past year. From the meeting minutes and emails exchanged by officials throughout the year, I then developed this Annual Report to submit to the AIPG Michigan Section and AIPG National with the pictures and student experiences that have been previously provided. After writing this report, it was reviewed and approved by the Chapter Executive Committee as stated in Section 7.

### **6. Treasurer's Report - Emilie Pray, MTU AIPG Student Chapter Treasurer for 2021/2022**

In 2021, the AIPG Student Chapter at Michigan Tech received \$1000 from the Michigan Section to help support the educational activities the chapter hosted throughout the year. In addition, the chapter was also awarded \$500 from the AIPG for the 2021 Student Chapter of the Year Award. Over the year, the chapter covered expenses for meeting expenses and events which totaled to approximately \$100. Two students were supported by the AIPG so that they could attend the 2021 AIPG National Conference in Sacramento, California. The chapter also fundraised money to help support three students who traveled to take the ASBOG test in March of 2022. The chapter plans on providing funds to help support students who are attending the 2022 National Conference, as well as support future students who will travel to take the ASBOG test. Student members are not required to pay dues, so in order to run events, the chapter needs to fundraise money.

**7. Attest the Report has been Approved by the Chapter Executive Committee**

The 2021/2022 Chapter Executive Committee approves this report as indicated by their signatures on the cover page.