

AIPG Student Chapter at Michigan Technological University
Fall 2019 - Spring 2020
Annual Report

President: Dustin Helmer



Vice President: Sienna Meekhof



Secretary: Makala O'Donnell



Treasurer: Emilie Pray



March 30, 2020

Michigan Technological University
Houghton, MI 49931

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1. Inclusive dates of the year being reported

For the 2019-2020 academic year, the Michigan Technological University (MTU) AIPG Student Chapter aimed to reach out to community groups in hopes of more involvement with community service and student practice with presentations. In the fall semester of 2019, the student chapter focused on improving students' professional skills by hosting resume building meetings and allowing students to practice giving presentations to an audience. The student chapter also wanted to increase our community involvement, so we contacted MTU Dr. Bill Rose and Erika Vye from the Keweenaw Geoheritage group to discuss several ways that we could get the community more involved with the geology and history of the Keweenaw. In the spring 2020 semester, we were able to create three main projects: a community event at the Adventure Mining Company in Mass City, MI to raise awareness of Geoheritage, a social media page that encourages community members to enjoy but preserve nature and geology in the Keweenaw, and add geologic background information to existing waterfall tours of the Keweenaw. We also began to orchestrate an event to educate elementary school aged children (grades K-5) about earth science. However, due to the recent disruption of regular school activities and the need for social distancing, these planned events have been placed on temporary hold until such time as regular school activities are resumed. The MTU Student Chapter will continue to plan and host similar events for the upcoming fall 2020 semester. For this reason, the 2019-2020 annual report will include information from September 2019 through March 2020 with highlighted dates as follows:

September 19, 2019: AIPG National Conference and Resume Roast

September 30, 2019: MTU AIPG Student Chapter and Geology Club Bonfire and
Yooperlite Hunt

October 5 and 29, 2019: Student Presentations and Philanthropy Opportunities

November 19, 2019: Philanthropy with the Keweenaw Geoheritage

December 9, 2019: Stress Relief Before Exams

February 20 and March 3, 2020: Planning Events with Keweenaw Geoheritage

March 8-15, 2020: Spring Break Field Trip

2. Membership

2.1 Chapter Officers

2019/20 School Year

President	Dustin Helmer	drhelmer@mtu.edu
Vice President	Sienna Meekhof	smmeekho@mtu.edu
Secretary	Makala O'Donnell	mmodonne@mtu.edu
Treasurer	Emilie Pray	empray@mtu.edu

2020/21 School Year

President	Elana Barth	egbarth@mtu.edu
Vice President	Breeanne Heusdens	bmheusde@mtu.edu
Secretary	Makala O'Donnell	mmodonne@mtu.edu
Treasurer	Emilie Pray	empray@mtu.edu

2.2 Chapter Sponsor

Dave Adler, CPG - 11377 DAdler@manniksmithgroup.com

2.3 Faculty Sponsor

Dr. Chad Deering cddeerin@mtu.edu

2.4 Section President

Sara Pearson, CPG - 10650 pearsons@michigan.gov

2.5 Chapter Members

The MTU AIPG Student Chapter has 54 members, listed below:

Abigail Friedl	Emilie Pray	Max Douglas
Alexander Dartt	Emily Street	Melanie Zondag
Allyson Hartz	Evelyn Jobe	Natasha Timkovich-Camp
Andrew Cooper	Fritz Jaeger	Nick Potter
Anthony Bashur	Grace Ojala	Olivia Salvaggio
Arie Ruiten	Hannah Hunt	Quelyn Bekkering
Aritra Ghosh	Ian Gannon	Rebekka Guyon
Benjamin Neely	Jacob Kettelhodt	Ryan Schwiderson
Brandon Schultz	Janayna Manuel	Sentle Augustinus Hlajoane
Breeanne Heusdens	John Hagopian	Sienna Meekhof
Bruce Bilgreen	Joshua Bregger	Sophie Mueller
Cosmo Trikes	Kira Koboski	Tim Hauxwell
Daniel Trekas	Korrina Young	Tyler Maiers
Dean Wozniak	Kyle Walker	William Cornillie
Dorival Silva	Lily Sparks	Wyatt Bisballe
Dustin Helmer	Maddie Pugh	Zach Daining
Dyani Stewart	Maddy Anderla	
Elana Barth	Makala O'Donnell	
Elliz McClelland	Malte Ed Rudolph	

3. Chapter Activities

September 19, 2019: AIPG National Conference and Resume Roast

On September 14, 2019, three MTU Student Chapter members attended the AIPG National Conference in Vermont. While there, the students attended the student workshops about how to write resumes and cover letters, how to apply for jobs, what jobs are available to geology students, and how to invest in retirement funds. In the evening, the MTU students went to a “Speed Dating with Professionals” event and connected with the Central Michigan University Student Chapter attendees to share some ideas about student chapter events.

Leading up to the MTU Fall Career Fair, the student chapter held a “Resume Roast” meeting where the students that had attended the National Conference in Vermont gave a presentation to the rest of the Student Chapter about what they had learned. This was an excellent opportunity for these students to pass on the information they had gained at the AIPG National Conference and to practice their presentation and public speaking skills. Student Chapter members were also encouraged to bring their resumes to the meeting for their peers and upper classmen to give them tips on how to improve their resumes.



Figure 1: MTU and CMU student members posing for a photo at the 2019 AIPG National Conference in Vermont. MTU students Evelyn Jobe and Sienna Meekhof are pictured third and fourth from the left, respectively.

September 30, 2019: AIPG Student Chapter and Geology Club Bonfire & Yooperlite Hunt

The MTU AIPG Student Chapter bonded with the MTU Geology Club over s'mores at a bonfire and rockhounding field trip at the Gratiot River County Park where the Gratiot River empties into Lake Superior. Rockhounding included searching for Yooperlites which became famous in the summer of 2019 because they are easily found beach rocks with sodalite inclusions that fluoresce under a blacklight. With help from many members in both groups, we were able to sell extra Yooperlites as a fundraiser for our Spring Break field trip. This sparked an interest in many young engineers and geoscientists to continue to learn about the earth sciences, and we noticed a few of them attending the AIPG meetings. Fun outings like a bonfire/cookout paired with exposure to geology made our AIPG Student Chapter successful in obtaining new members this year.



Figure 2: Yooperlites collected by students fluorescing under a blacklight.



Figure 3: Students from the AIPG Student Chapter and the Geology Club posing for a picture in front of the sunset on LAke Superior at Gratiot River County Park.

October 5 and 29, 2019: Student Presentations and Philanthropy Opportunities

The Student Chapter reached out to the Mining INnovation Enterprise (MINE) at MTU to give a presentation on the types of projects they work on and current projects students could get involved with such as mining gypsum on the moon and on Mars. Enterprises at MTU are student-driven, multidisciplinary teams that work like companies on real-world client projects, and they are always looking for students to join. This was a great opportunity for underclassmen to discover what opportunities are available at MTU and allowed the MINE student members to practice their presentation skills. The Student Chapter also voted on what kinds of community outreach they would be interested in for the continuing academic year and decided to reach out to the Keweenaw Geoheritage.



Figure 4: Students from the MINE enterprise at MTU are shown giving a presentation to the AIPG Student Chapter. Pictured from left to right: Mickala Kohtz, Breeanne Heusdens, and Emily Scheetz.



Figure 5: Student member, Evelyn Jobe, presenting a project about Mars created for a planetary geology class at MTU.

November 19, 2019: Philanthropy with the Keweenaw Geoheritage

The MTU AIPG Student Chapter reached out to Erika Vye, the Geoheritage Education Coordinator at the MTU Center for Science & Environmental Outreach, to get involved in the Keweenaw Geoheritage Project. The Keweenaw Geoheritage is an amazing resource for information on the geology of the Keweenaw Peninsula, and they are always looking for volunteers for events and community outreach. This meeting mostly consisted of the Student Chapter learning and understanding what the Keweenaw Geoheritage does and what they are looking for us to do in the future.



Figure 6: A student led meeting with Erika Vye from the Keweenaw Geoheritage to brainstorm ideas for future events to be hosted by the student chapter.

December 9, 2019: Stress Relief Before Exams

Student Chapter officers presented tips to members on how to relieve stress during exam time, and exchanged cookies as a holiday treat for members. Information on test anxiety, sleep and eating habits, and studying tips in the forms of academic journals were printed off for members to read through and take with them. A calming environment was created for students to take a productive break from studying. After typical meeting announcements and quickly going through these tips, students mingled and enjoyed their treats before we sent them off to end their fall semester knowing how to tackle finals.



Figure 7: Cookies made by student members to help with stress relief before finals.

February 20 and March 3, 2020: Planning Events with the Keweenaw Geoheritage

The student chapter met with Erika Vye of Keweenaw Geoheritage and the Student Chapter Sponsor to discuss events and other outreach activities we could do for the Keweenaw Geoheritage Project. The Student Chapter wants to host an event in September 2020 at the Adventure Mining Company, which is an abandoned copper mine near Mass City, MI that gives tours of their facilities during the summer. This event would include games, crafts, biking, hiking, and live music to educate more people on the history of the copper mining industry and the opportunities for recreation at the mine.

The student chapter also planned to set up a local geology themed Easter egg hunt for elementary school aged children in the Calumet, MI school district where plastic eggs would be filled with a local rock and a description of the rock type as well as some candy. Unfortunately, this event had to be canceled along with other spring activities such as Spring Fling where MTU students get a chance to sign up for various organizations on campus.

We are still planning to set up and running an Instagram page for the Keweenaw Geoheritage Project where we will start posting Waterfall Wednesdays, seasonal story spams working with Pure Michigan, creating a RockID Geoheritage tag to connect with the community, discussions on mineral collecting ethics, and "your rock is not a meteorite" posts.

March 8-15, 2020: Spring Break Field Trip

The MTU AIPG student chapter teamed up with the MTU Geology Club to travel to the Appalachian Mountains area for a Spring Break field trip. A total of twelve students took the opportunity to go rockhounding and geologizing down south in the beautiful (and not snow covered) mountains. The trip started in Virginia where the group went on a cave tour at Natural Bridge State Park. They stayed in Fairy Stone State Park and found many staurolite crystals, both twinned and un-twinned varieties. The group then travelled to North Carolina for some hiking at Chimney Rock State Park with gorgeous views of the mountains and metamorphic geologic features. The group found many large garnet crystals at the Little Pine Garnet Mine and large books of muscovite mica, as well as beryl, smoky quartz, and amazonite at Ray Mine. After some time in North Carolina, the group travelled to Tennessee to explore the Great Smoky Mountains as well as search for Herkimer quartz crystals at Douglas Lake and agates at Greasy Cove. The trip ended in Kentucky with a cave tour at Mammoth Cave National Park.



Figure 8: Garnets collected by students at the Little Pine Garnet Mine in North Carolina.



Figure 9: Staurolites (a.k.a. Fairy Stones) collected by students at Fairy Stone State Park in Virginia.



Figure 10: Beryl collected by students at Ray Mine in North Carolina.



Figure 11: AIPG students and Geology Club students at Chimney Rock State Park in North Carolina.

4. Member Activities

Sienna Meekhof

May 2019-present

Southern Complex-Marquette Research MTU, Chad Deering

"I had the pleasure of working with Dr. Chad Deering this year on a research project concerning Bell Creek units of the southern complex in Marquette. This was the first research I have been a part of, and learned real life skills I lacked from reading textbooks in a classroom. This project allowed me to participate in traveling and collecting samples in the field, as well as working on cutting samples into bulk and billets, and then turning them into thin sections. I was able to be trained on rock cutting saws and equipment by Lab Safety Instructor Bob Barron, who helped me greatly in learning techniques for preparing samples for the best analysis possible. I have started geochemical analysis and written papers on past literature for this project now, and petrologic analysis from the thin sections will come next. I am most excited to be a part of this project because I feel as though I am contributing to the professional geologic community with new discoveries through this hands on experience."



Figure 12: Testing thin section samples from the Southern Complex

May-August 2019

Adventure Mine Company (AMC), Greenland MI

“This summer I got the amazing opportunity to return as a tour guide at the Adventure Mine in Greenland, Michigan. Working here includes learning about the copper mining history of the Keweenaw, the geology of the Keweenaw, and also basic construction and mining skills. We help the owner complete projects around the property, drive guests up rough terrain in Austrian built military vehicles, and do inspections throughout the mine to ensure the safety of the guests. I got the pleasure of barring down and scaling loose rock from the mine walls, as well as exploring the mine’s second level. Each year, the lower levels of the mine flood and need to be pumped out for extended tours. This year the Adventure Mining Company switched to an electric pump that had to be installed by the summer student workers, and pumped more water, faster than before! I loved working here because of the real world experiences, and getting to greet and educate guests from all over the world.”



Figure 13: Sienna Meekhof as a tour guide in Adventure Mine.



Figure 14: Sienna Meekhof driving one of the Adventure Mine's military vehicles used to transport guests.

Breeanne Heusdans

Fall 2018-present

Mining INnovation Enterprise at MTU

“This year I wrote and published an article in The Professional Geologist about my research in the Mining Innovation Enterprise. I am the Geology Team Lead and Enterprise President, and while the Enterprise works on a multitude of projects, I focus on the research and lab work with mining gypsum on Mars. The Enterprise is funded by NASA to prove the feasibility of a rover or many rovers equipped with geophysical methods for locating gypsum deposits on the Martian terrain, water jetting equipment to break up and collect the gypsum, and a calcining reactor to turn the gypsum and water slurry into pure water and waste anhydrate. My personal focus during the Spring 2020 semester is on using electrical resistivity methods to locate the gypsum without liquid water present in the subsurface. The Enterprise additionally works on the NASA Lunabotics competition and a subsea mining ROV.”

Submitted summary of this activity can be found in The Professional Geologist Vol 57, Number 1 pg 54 titled “Mining Mars for Gypsum”.

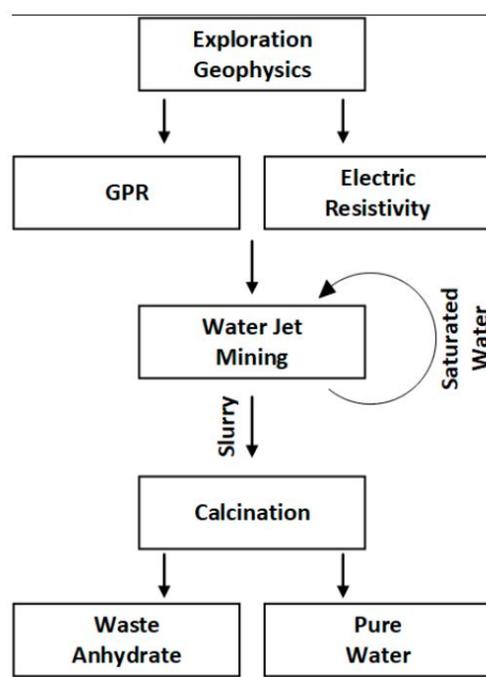


Figure 15: Gypsum mining flow chart created by MINE students.

Fritz Jaeger

Fall Semester 2019

Intern for Ottawa County, Michigan Conservation District

“Throughout the course of this internship, I was responsible for data collection and analysis of road stream crossings within the Pigeon River Watershed and Sand Creek Watershed. My work focus was to actively assess erosive boundaries and sediment impoundment to form a conclusive assessment of overall stream health parameters to aid in procuring a watershed management plan for the Pigeon and Sand Creek.”



Figure 16: Fritz Jaeger measuring the water depth in a stream for his internship.

Elana Barth

September 2019-present

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

“In the fall semester of 2019 Breeanne Heusdans and I worked together in order to develop a Geology Learning Center for the GMES Department. At MTU, most other academic departments have a learning center, but the GMES department didn't. Learning centers provide extra support outside of professors' office hours for students who are struggling with their classes. We worked with GMES Department faculty and learning center coaches from other MTU departments to build the foundation of the GMES Department geology learning center. At the beginning of 2020 the GMES Department geology learning center opened its doors to help students with petrology, structural geology, and geophysics. So far, the learning center has been a success and I hope to include other classes as the center grows.”

5. Secretary's Report - Makala O'Donnell, MTU AIPG Student Chapter Secretary for 2019/2020

As the Secretary of the MTU AIPG Student Chapter, I was responsible for keeping track of all relevant information over the 2019 – 2020 academic school year. I attended all meetings and participated to the fullest of my ability. Outside of meetings, I attended school events such as K-Day to help recruit new members through bringing awareness of AIPG for new students. Halfway through the year, 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 2019/2020

In 2019, the MTU AIPG Student Chapter received \$1000 from the Michigan Section to help fund the various educational and event activities that the chapter was able to experience throughout the 2019-2020 school year. In September, three MTU AIPG chapter members attended the AIPG National Conference in Burlington, VT. The Student Chapter provided funding towards travel for this trip: \$460 for travel, and \$50 for food. The chapter also covered incidental meeting expenses for materials used during monthly meetings. These expenses totaled approximately \$150. The student chapter also paid \$182 for one student to attend the Michigan Section meeting in March that was subsequently cancelled. During the 2020-2021 academic year, the chapter expects to cover the funds for a day-long community event at the Adventure Mining Company in the fall (approximately \$150), and travel costs for more students to attend the 2020 AIPG National Conference in California. MTU AIPG Student Chapter members do not pay dues, so fundraising will be necessary for attaining enough funds to pay for future events planned.

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

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