

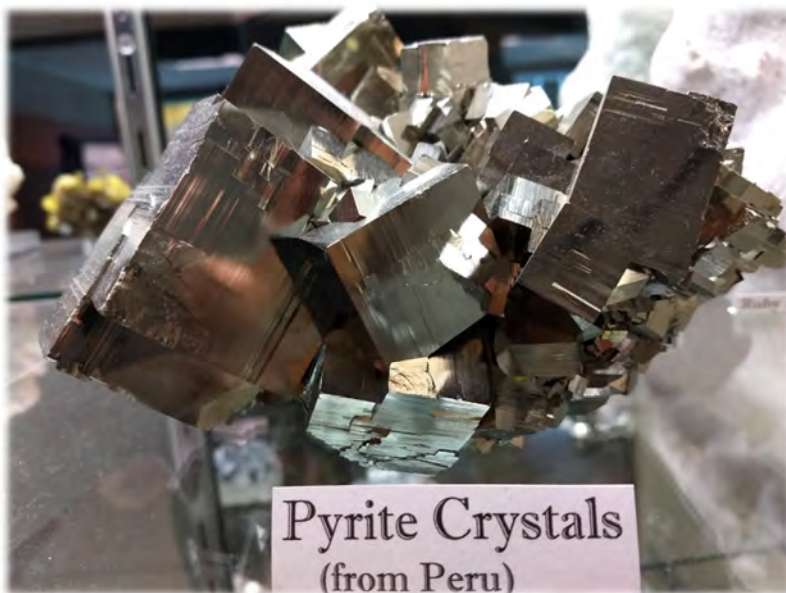


GRAND VALLEY STATE UNIVERSITY[®]

GEOLOGY DEPARTMENT

December 2018 Newsletter

Grand Valley State University educates students to shape their lives, their professions, and their societies. The university contributes to the enrichment of society through excellent teaching, active scholarship, and public service.





The mineral, rock, and fossil collections remain at the core of instructional materials for associated labs. At the same time, our public displays are central attractions to all in the Padnos hallways. Alumni and friends of the department have provided important additions to the collections. And the Miller collection is the source of many of the most beautiful specimens. Support the Paul & Florence Miller Mineral Collection Endowment which provides funding to add materials including fossils. See Kevin Cole's section in this newsletter for new display plans.

Greetings from the Chair!

Figen Mekik (mekikf@gvsu.edu) This year has been an eventful one in Geology! It marks the very first year where we implemented our new curriculum in full with many new courses. Our students are graduating and finding gainful employment with the skills they learned in our program. In fact we had our very first graduates with the *Geology B.S. and Environmental Emphasis* this year. And our faculty are getting younger and more vibrant every year - the youthful among the readers will understand my humor with that last comment more and more every year. Our field trips are going strong. Our alums tell us that it was the field trips that became the most memorable parts of their experiences with us. Some other highlights of the year include **Dr. Tara Kneeshaw** earning tenure, and **Dr. Caitlin Callahan** successfully completing her first contract renewal. We have a new Affiliate Professor, **Dr. Ian Winkelstern**, who studies clumped isotopes in corals as a paleo-temperature proxy and who works hard to disabuse me of the notion that clumped isotope data reflect diagenesis. I suspect I am driving him crazy. ☺ He successfully submitted a proposal to the National Science Foundation within the first two months of his employment at GVSU! **Dr. Bill Neal**, **Dr. Patricia Videtich**, **Mr. Greg Wilson** and **Mrs. Janet Potgeter** are working together to create a hallway display of the history of our beloved Geology Department. This work is still in progress, but be sure to ask for old pictures of your professors the next time you visit us. And lastly, happily for her but sadly for us, **Dr. Patricia Videtich** retired from Grand Valley with Emeritus Professor status after 26 years of service. We will miss her deeply but she promises to show up for our picnics!

Our faculty have been working hard at teaching our new curriculum. **Dr. Ginny Peterson** and **Dr. Kevin Cole** taught GEO 214 *Solid Earth Materials and Systems* for the first time; and **Dr. Patrick Colgan** and **Figen Mekik** taught GEO 220 *Earth Surface Materials and Systems* for the very first time this year. **Dr. Peterson** also taught the new course

GEO 314 *Petrography: Mineral and Rock Analysis* for the first time.

Mr. Greg Wilson, **Dr. Kevin Cole** and **Ms. Susan Jansen** have been visiting the gem and mineral show in Tucson and bringing back gorgeous specimens that we are displaying in our Miller Case. And **Mrs. Janet Potgeter** has finally been acknowledged by our faculty and students alike as the *well of all knowledge* pertaining to our department. This acknowledgement is long overdue. All of our faculty have been quite active outside of class. **Dr. John Weber** was on sabbatical this year but returned with reinvigorated energy this fall. His new field guide has recently been accepted for publication. **Dr. Peter Riemersma** developed a very popular special topics course revolving around a week-long field trip to the Florida Everglades over Spring Break 2019 called *Geology, Natural History and Water Resources of Florida*. They will examine springs and sinkholes, and even do some snorkeling in the Keys. **Dr. Stephen Mattox**, developed a 12 week course in Iceland called *Geology in the Land of Fire and Ice*. I think he is secretly wishing for eruptions while they are there. **Dr. Caitlin Callahan** was a leader and co-leader for multiple sessions of the Earth Educators' Rendezvous about mentoring practices and advancing transdisciplinary dialogue in Geoscience Education research. **Dr. Tara Kneeshaw** has dedicated many hours to help GVSU students with remedial work and to entice her students in her General Education courses to fall in love with Geology. Similarly, **Ms. Kelly Heid** continues to draw in very capable geology majors from her introductory courses. She is also very excited about her new weather station on campus! **Dr. Pat Colgan** worked tirelessly on his summer research projects with **Taylor Weeden** and **Ella Larson**. Both projects were funded by NASA's Michigan Space Grant Consortium. **Dr. Peter Wampler** has been continuing his illustrious work in Haiti with much public acclaim. Most recently he has been invited to feature his work in Haiti in the *Academic Minute*, <https://academicminute.org/>, which is

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a podcast featuring the work of researchers in various colleges and universities across the country.

Dr. Ginny Peterson has been elected as Chair of the Geoscience program in the Council for Undergraduate Research. **Ginny Peterson, Tara Kneeshaw, Peter Riemersma, John Weber, Pat Colgan and Kelly Heid** attended and presented their research at the Geological Society of America annual meeting in Indianapolis. And I am continuing as the Unit Head of this venerable department into my third year. I published two papers this year both in Elsevier journals about the age of seafloor sediments and how to recreate sea surface temperatures in Earth's past. All of the Geology faculty have been quite prolific this year. See the list of all Geology faculty publications in 2018 on page 16.

As always, Geology is a happening department and will continue to be so. Please send us your stories, tell us of your accomplishments, and keep us close to your hearts! We are always grateful to our alumni who send us job and internship announcements for our current majors. Just to name a few: **Nathan Noll** (2010), **Heather (Brusnahan) Skidmore** (2009), **Karen Musser** (2016), **Jacqueline Bussey** (GEO, 2013), and **Adam Wygant** (1993). We are grateful to **Indian Mounds, the Tulip City Gem and Mineral Club** and the **Gibson family** for providing our students with scholarships and awards. We are also grateful to the **Miller family** who help us maintain and enrich a beautiful mineral display in our Department. Many of the images on the first two pages are of specimens from the Miller collection. Your Geology professors miss you and wish you the very best!

Caitlin Callahan (callahca@gvsu.edu) This fall marks my fourth year at GVSU. I continue to be awed by how the landscape of my career keeps expanding in new, exciting, and challenging directions. A notable example of this has been the opportunity to serve the National Association of Geoscience Teachers as conference co-chair for the annual Earth Educators' Rendezvous both for 2018 and for 2019. The Rendezvous is intended for any and all who are interested in teaching and learning in the geosciences. This past summer, the conference was held at the University of Kansas (KU) in Lawrence. From July of 2017 to July of 2018, I worked with my co-chair, and a committee of eleven, to schedule six 3-day workshops; six 2-day workshops; 15 afternoon workshops; two plenary speakers; roughly 18 roundtable discussions; and a handful of smaller events. As co-chair of the Rendezvous, I also co-lead both the welcome and closing sessions of the conference. A colleague captured an image of the first PowerPoint slide for those presentations.



Happily, I was able to attend the pre-conference field trip where we had a chance to try out some new iPad-based software that faculty at KU have designed. The programs aim to improve students' learning experiences in the field; here I am caught in the act of collecting some data with my iPad. (Image below) Work is now well underway to plan the 2019 Rendezvous, which will be held in Nashville, jointly hosted by Tennessee State University and Vanderbilt University! It is such a pleasure to have the chance to interact with and learn from geoscientists from all



Close to home, my teaching and research continue to keep me busy as well. I am teaching a section of GEO 111 (Exploring the Earth) and GEO 175 (Research Tools for Geoscientists), as well as leading GEO 486 (Geology Reading Seminar). The latter is the fall semester component of the course that was formerly the year-long seminar for Geology Department majors. Added to these, I am teaching a section of Integrated Life Sciences for K-8 Teachers (SCI 225). For my research, I

continue to work with **Lindsey Wiley** (current GVSU Geology Major) along with other faculty collaborators on our NSF-funded project related to recruitment and retention of underrepresented groups in the Earth System Sciences. Our work is drawing attention to the importance for both students and mentors to articulate their respective needs and to incorporate those needs into mentoring relationships. Moreover, the findings in our project emphasize the necessity of explicit actions by mentors to help students build social capital. As this grant will come to a close next fall, I am already looking to the horizon and starting to think about what research questions to pursue next.

Kevin Cole (colek@gvsu.edu) Another year has gone by. Last spring, I worked mainly on cataloguing the GVSU mineral collection with the help of geology student **Ben Pummel**. The goal is to identify and label mineral samples, so they are easier to locate and utilize as well as sorting donations and deciding what samples should be placed in storage, go to the geology club, or to the rock pile. I have also been working on the Miller Collection. The goal is to have several displays with educational themes such as “Minerals of Michigan”, “Native Elements”, “Rock Forming Minerals” and “Economic Mineral Deposits.” It is an ongoing project. To procure more specimens for the display Susan Jansen, Greg Wilson and I went to Tucson to the Tucson Gem and Mineral Show. We came home with some beautiful mineral specimens.

In May I attended an Institute on Lake Superior Geology field trip in Iron Mountain in preparation for the GEO 214 field trip in the fall. In June Ginny Peterson and Jon Burr joined us to scout out new localities for the field trip. We had a lovely time camping avoiding most of the bad weather. We were, however, visiting the Eagle Mine when an electrical storm passed. We were on lock down for about an hour. We didn’t get a tour but our time with Geologist Bob Mahin was so educational we decided to include it in our field trip. We also got samples to use in class of both the ore, wall rock, concentrate as well as drill core samples.

Susan and I continued to our annual trip west. We visited many national parks with an emphasis on fossils. In Colorado we met up with alums **Jacqueline Bussey** (GEO, 2013) and **Eli DenBesten** (GEO, 2013) for hiking and camping in the Rockies (see photo). We also met up with alum **Michael Stockoski** (GEO, 2012), also living in Colorado.

Once we reached Washington, I headed north on our way to spend some time with with my dad, brother Ross and friend Jim on my dad’s boat for 3 weeks of fishing, shrimping, crabbing, visiting old haunts and



Eli, Jacquie and Kevin

telling stories. Susan stayed in Washington and Oregon visiting family, hiking on the PCT and on the Washington coast with Greg Wilson and his son Luke.

The Fall marked the second year of GEO 214 which I team taught with Ginny Peterson. We had a busy field trip to the UP where at many of the stops we encountered other university field trips. While visiting a kimberlite deposit we encountered alum **Josh Ehlich** (GEO, 2014) who is a TA for Northern Illinois University working on his PhD. We were the only group who were camping!

Patrick M. Colgan (colganp@gvsu.edu) Hope everyone is healthy and happy! This year was memorable with interesting research with great students and colleagues, rewarding teaching, and a small bit of travel and adventure. During the winter semester, I taught *GEO220 – Earth Surface Materials and Systems* for the first time, after Figen Mekik taught the inaugural class in fall 2017. Our new curriculum now has all geology sophomores taking a class that covers water and the hydrosphere, Earth systems, sediments and soils, and critical zone processes. It has been a metric tonne of work developing this class with Figen, but it has been fun and I think it will help broaden our students, and expose them to new research fields and career paths. I also taught *GEO112 – Earth History* to some excellent freshman geology and Earth Science majors and non-majors. Five of these students were in my previous GEO111 class that Kelly Heid and I team taught so I feel a special fondness for them even though they are probably sick of me! I look forward to seeing them graduate in 2-3 years!

In spring and summer, I worked in the field with current students **Taylor Weeden** and **Ella Larson** on funded summer research projects. Ella Larson’s research was funded by a Student Summer Scholars (S³) grant from

GVSU, as well as funding from Michigan Space Grant (NASA) and a Gibson Summer Scholarship (GVSU). Ella's research examines groundwater springs and the small valleys they erode. Ella and I along with Peter Riemersma installed monitoring wells in two valleys at Hemlock Crossing Park in Ottawa County to understand groundwater/spring/surface water interactions and erosion (sapping) of the valleys. Taylor Weeden received a Michigan Space Grant Fellowship (NASA) and a Gibson Summer Scholarship (GVSU) and is mapping late Pleistocene inland dunes in six coastal counties of western Michigan. She mapped hundreds of dunes and found that they cover a large area of the former bed of Glacial Lake Chicago. This summer Taylor and I sampled inland dunes in Allegan County for the first time and found they are very similar to dunes in Ottawa and Muskegon Counties that I have studied before. Both Taylor and Ella will be presenting their first results at the GSA Meeting in Indianapolis, Indiana in November. Very exciting stuff!

In late May, Kelly Heid and I did an 8-day float trip down the Colorado River all ~270 miles from Lee's Ferry, AZ to Lake Mead, NV. We had an awesome time seeing parts of the Canyon and the river that I have hiked down to years ago, but it was a lot easier to float to the outcrops. My favorite memories besides the interesting people we met, were floating below Toroweap Point, then past Vulcan's Anvil, and down Lava Falls (no big deal really). We were wet for 8-days and loved it. Also, a few quiet hikes up narrow side canyons on warm blue-sky days, and napping on the Vishnu Schist watching clouds and buzzards floating by. In late July and early August, we headed out to the Dakotas to hike in the badlands, look for fossils (all left behind on public lands), and occasionally detour around restless Bison in rut. We eventually made it in to western Montana to hunt for sapphires at Gem Mountain, and just enjoy some hiking in the mountains and on the plains. The fall brought an abrupt end to research and explorations, and I jumped back into teaching GEO320 (Geomorphology) to 27 majors/minors, and GEO220 (Earth Surface Materials and Systems) for the second time to 13 geology majors. Both classes have labs so they keep me jumping and constantly grading papers. Both classes have local field trips to learn about geomorphology and water issues so it has been really fun, even when the weather doesn't cooperate. This will be my last year (I think) on the College of Liberal Arts and Science, Personnel Committee, so I looking forward to having Friday afternoons and evenings back next year. Hope everyone has a great year end. Best wishes in the New Year and it is always good to hear from alums!

Jeremy Gould (gouldjer@gvsu.edu) My third year here at GVSU has already been an exciting one! This semester in addition to teaching Geo 100 (Environmental Geology), I am also teaching Geo 103 (Oceans) and Geo 105 (Living with the Great Lakes), and have very much enjoyed seeing the new perspectives from the students in these courses, they are very inquisitive! During the winter semester I will be teaching 5 courses, an assortment of Geo 100, 103, 105 and 111(Exploring the Earth)! During this past summer I continued teaching online courses in climate change and environmental science at Loyola University - Chicago, and even partook in some hybrid courses (both online and in the classroom), which was a new challenge for me. I also started brewing beer, which has always been a skill I've desired to have! I am excited by what the rest of this academic year brings, and am happy to be working once again with all the wonderful faculty and students in this department!

Kelly Heid (heidke@gvsu.edu) I am still enjoying teaching the Exploring the Earth GEO111 course. This year I have been enjoying trying out a few new lab activities that were well received by the students. We tried out a new Weathering lab where the students describe characteristics of various sediment samples, determine their different angle of repose and segued into creating slope failure and landslide events. The second change was to include a sapphire gem search in the traditional mineral lab. Pat and I enjoyed a fun morning at the Gem Mountain Sapphire Mine in Montana this summer and I couldn't resist bringing a couple of bags of gravel back home. So the students learned firsthand that the more dense sapphires will fall to the bottom of the sieve during the washing/shaking process. Then with patience and a keen eye they picked through the gravel to find the sapphires. They spent a little time trying to determine the clarity and carat size of their finds.

The GEO 203 Weather and Climate course has seen a few changes this year. The course now open to both the elementary Integrated Science majors and the secondary Earth Science majors and minors. We are working on our GLOBE weather observation protocols and visiting our new weather station that we were allowed to put in the arboretum this fall. The students also helped run a GLOBE workshop for teachers at the Fall Science Update Conference sponsored by the Regional Math and Science Center on the Allendale Campus. The students did a wonderful job helping to show the local school teachers the various GLOBE weather protocols and showed them how to retrieve data from the website.

Along with sapphire hunting in Montana, Pat and I traveled some this summer. Pat has already written about our Raft Trip in the Grand Canyon to see the “Great Unconformity” and traveling out west to North Dakota and Montana so I won’t go into details here. Take Care and Happy New Year!

Tara Kneeshaw (kneeshta@gvsu.edu) Wow, time continues to fly by! I hope this finds everyone happy and healthy. This past year has been an interesting one full of highs and lows (without a dull moment!). One of the most exciting updates I have is that I was granted tenure this past year! I could not be more excited to continue at Grand Valley as a member of the Geology Department. It is truly an honor to work with such outstanding colleagues and students—thank you to everyone for your ongoing support and inspiration. The summer passed quickly as I again taught the Groundwater Sampling and Monitoring portion of WMU’s Hydrogeology Field Camp two times. In the midst of field camp, I learned that I was extremely allergic to poison ivy, which was decidedly unpleasant. In less “itchy” news, former student, **Kayla Lockmiller** (GEO, 2016), and I had results of our Kalamazoo River oil spill research published and subsequent research continues to build off those initial results. I have also been participating in a number of “student success” initiatives on campus and I have found the engagement with students in this capacity has been immensely rewarding. In July, Josh and I went off on our annual adventure, this time we headed to upstate New York and the Adirondacks. We brought along our new rescue dog (a 6-year-old Australian Shepherd named Mork). Mork (a former city dog) had a blast on vacation and is now slowly adjusting to his new life in the country. In other news on the home front, we planted even more Fraser Fir Christmas trees; I think we are up to over 950 or so. I continue to enjoy my chickens but we once again have run into predator issues losing 23 chickens (16 in one day!!) to what has turned out to be a great horned owl (nature at its finest!). Most recently, I have taken on the new challenge of teaching Geo 112 (Earth History). Geo 112 is definitely a divergence from my usual repertoire but I am sincerely enjoying brushing off my old fossil identification skills and delving back into anything older than the last 100 years (ha, ha!). I enjoy seeing the successes of all of our alumni and current students....please keep us up to date with what you are doing. Cheers to a rewarding year for all in the new year!!

Steve Mattox (mattoxs@gvsu.edu) I got the band back together – or at least a deep pool of talent. Four alumni

presented with me at the Michigan Science Teachers meeting on merging NGSS and the high school geology course. Thanks to **Chris Bolhuis** (GEO, 1994), Hudsonville, H.S.; **Claire (Sobolak) Giovanni** (ES, 2016), St. Fabian Catholic School; **Ashley Meyer** (M.Ed., 2016), Hamilton, H.S.; and **Brad Stevens** (ES, 2011), Zeeland H.S. Good fun. Recent Earth science grad **Nick Vlietstra** (ES, 2017) presented his work on Flooding Using Extreme Weather Events. Geology major **Connor Frymier** (GEO, 2017) used Adobe skills to make A Teacher Friendly Version of the Stratigraphic Column of Michigan. It needs to be reviewed and then maybe we can get the state to publish.

I tested 226 high schools students in the spring for college physical geology credit. About fifty five percent passed and six are geology or Earth science majors at GVSU, WMU or NMU. It’s interesting that research confirms exposure to geology in a high school course guides students to geo majors.

My summer work with Michigan Tech continues. Under the auspices of the Dow Education Foundation we are writing Michigan-centric middle school science curriculum aligned to the Next Generation Science Standards. We wrote about how nature selects for traits using bedbugs as a hook; I itched for nearly two weeks. The project will be complete next fall.

In the summer I spent three weeks in Iceland with Tari Mattox of GRCC and Thor Thordarson of University of Iceland. We were drinking from the firehouse with observations on over 100 field stops. We’ll use what we learned to resubmit a NSF grant and run a Study Abroad course for GVSU students next summer. Over Labor Day, Earth science student **Trent Ruby** and I traveled in Canada north of Georgian Bay from Elliott Lake to Parry Sound, crossing the Grenville Front and seeing a greater variety of gneisses than I ever imagined. Just amazing road cuts that all of you should head up and see. Trent will work on the samples in petrology and write a lesson on the assembly of North America. His work is supported by the Norman and Helen Gibson Geology Field Study Scholarship.

Bill Neal (nealw@gvsu.edu) 2018 has almost completely slid by, and with great rapidity as it seems I just wrote the 2017 update for the newsletter. In my old age I reflect more upon past career. In the 1940s and early 50s when I was a boy, most lads wanted to be cowboys – emulating Roy Rogers, Gene Autry, or the lesser known B-movie heroes (the Durango Kid, Lash Larue, Tim Holt, etc. – you may have to google those names to understand), but not me. I always strongly identified with the cowboy ‘sidekicks’ – Gabby Hayes in particular, and later Jack Elam when he wasn’t playing a

villain (both of these were fine actors). The sidekicks got to hang out with the Heroes, go to all the same places, and help win-the-day. In my career, I've had the wonderful sidekick experience of working with some pretty outstanding scientists who were classmates, teachers, mentors, associates, and colleagues, including those here at GVSU, past and current. Some of these have been co-authors, and the current year is no exception as a back-log of submitted articles saw publication after the usual rounds of revisions and galley corrections. I've established a good working relation with Prof. Nelson Rangel-Buitrago, Universidad del Atlántico, Barranquilla, Colombia, and, along with other co-authors, we've had a journal article (How to Make Coastal Erosion Management a Reality), an encyclopedia article (Coastal Erosion Management), and a Coastal Care article (Te Pito o Te Henua Shore) published. I played a small role in a paper produced mainly by an undergrad classmate Prof. Barry Voight of Penn. State, published in the GSA guidebook for John Weber's Kentland Quarry field trip. With Joe Kelley of the Univ. of Maine, I did a Coastal Care beach-of-the-month article on Newfoundland beaches (derived from the family 'vacation' trip of 2017), and in May had an Op Ed with Orrin Pilkey on "Our coastal cemeteries are falling into the sea" in the Raleigh News and Observer. And just to prove we should always be patient, a paper from 2002 meeting in Portugal finally was published on line (Geologic evidence for the incorporation of flood tidal deltas at Tavira Island, southern Portugal. <http://www.bioone.org/toc/coas/36>). And I broke my rule of "no more talks or lectures" with a presentation to the Tulip City Rock and Mineral Club in March (in appreciation for that club's support for our students through the years).

On the family front Mary and I continue to marvel at the growth and progress of our clan with another grand-daughter graduating high school, now in college; others moving into the Sr. ranks, middle school, or just starting – hard to keep track of! We enjoyed another week-long family gathering on Beaver Island, a summer visit from our California girls, and trips to Indiana to visit extended family. Health problems (mine and others) got in the way of a couple of planned trips, including missing the Indianapolis GSA meeting and visiting with some alums there (Sorry Ron, no beer again). I have enjoyed alumni visits to the department including some who are now 'old timers.' Thanks to all for stopping by, and come again soon!

Ginny Peterson (petersvi@gvsu.edu) Greetings! I just returned from the GSA meeting in Indianapolis where it was a pleasure to connect with several alums – many

who were presenting interesting research. I continue to enjoy collaborating with students on research projects. One of my mentees just graduated from GVSU and started a PhD program at the University of Massachusetts (my alma mater). **Dan Tjapkas** (2017) and I are working to finish a manuscript related to deformation and metamorphic conditions along the Chunky Gal Mountain Fault. Recent graduate **Jory VanEss** (2018) completed a project to measure 3-D strain axes in dunites from the Buck Creek ultramafic complex, using 3 perpendicular thin sections. Jory presented his results at the NC GSA meeting in Ames IA in April and earned the best undergraduate poster competition. The drive to Ames in a freak April snow storm was memorable. Jory recently started work with a consulting company near Lansing. Another student, **Ben Pummell** took on a project to describe and quantify thin section textures in dunite samples for which we had previously collected electron backscatter data. Ben explored the use of paleo-piezometers, deepening our understanding of how the Buck Creek dunite deformed. He recently presented his results at the annual GSA meeting in Indianapolis. I have also started working with a senior Geology major, **Eric Schuemann** to explore volcanic textures in rhyolites from the Keweenaw Peninsula in the context of formation of the rift. Eric collected some samples and we are also collaborating with and using samples from Tari Mattox. These research projects are fun to explore and I am making progress in getting the results in print, with one manuscript close to the submittal stage.

We continue to work on developing and improving the new earth materials course sequence. I am involved in my 3rd semester teaching GEO 214, Solid Earth Materials and Systems. In the Winter I took the students to the Appalachians and we were caught in a significant snow on the curvy mountain roads near Mount Rogers. The weather was so bad we had to abandon the rest of the trip and it still took us hours to go a few miles. This semester Kevin and I took the class to the Upper Peninsula near Marquette. We had a great but chilly trip where we encountered 4 other universities leading geology trips. In order to prepare for the trip we spent a few days in the UP in the summer and managed to be camping near Houghton on the night of the big floods there that made national news. Fortunately our tent stayed dry inside.

Last winter I really enjoyed the opportunity to teach Global Tectonics while John Weber was on sabbatical. In the coming semester I will teach a GEO 314 Petrography for the second time – this is the second course in the earth materials sequence and emphasizes analytical approaches (primarily microscopy) to study

minerals and rocks and their story. I will also teach GEO 414 for the first time. This advanced petrology course will be situated in a plate tectonics context to explore the use of geochemistry and phase diagrams in petrology.

I am still quite active in professional service beyond Grand Valley. I continue to serve as a facilitator for departmental workshops as part of the NAGT Building Strong Geosciences Departments program and I am continuing as the Chair of the Geosciences Division of the Council on Undergraduate Research (CUR) – a 3 year term.

On the personal front it has been a relatively quiet year – we did not do as much travelling this year and instead put our energy into some house projects.

Janet Potgeter (potgetej@gvsu.edu) Season's greetings to all! This year has been and continues to be a series of new adventures. My family is doing well and thriving. The highlight of my summer was a trip to Scotland, hiking on the Orkney Islands for a week and a second week of touring the mainland and Skye, with a couple of days to explore Edinburgh in between.



Near Mull head, on the coast of Orkney.

My hiking group of eight and our leader visited many scenic and historic sites on the Orkney Islands, crawled into cairns, tombs and brochs, strolled on coastal beaches and cliffs, and climbed the hilly sheep pastures. The historical ruins and landscape are both fascinating and beautiful. I hope to use my hiking boots again soon! Merle and I made a quick trip to Phoenix in September to attend an official commencement for son Troy who will actually complete his training at Motorcycle Mechanics Institute in January. We are keeping our fingers crossed he will accept a position in the Midwest. Fortunately for us, daughter Molly and son-in-law Ghazey live nearby. She is working towards a nursing degree and maintains her EMT certification.



Hiking across Hoy.

I can't say it enough, how much the geology department appreciates news and visits from our alumni. Your unique stories make up a wonderful GVSU Geology history. Patty V turned up a few artifacts in her office recently which allowed me to add insightful and historical documents to the newsletter website. Check out the 1980 Ozark Ouachita Field Trip Journal, by **Sheryl (Hoving) Lentini** (ES, 1977).

<https://www.gvsu.edu/geology/geology-newsletters-67.htm>. It is hilarious! Clearly, those were the good old days! I beg the excuse that time just gets away from me because the editor missed what should have been recognition of the 50th anniversary of the GVS Geology department in 2016. This issue includes a reprint of John B. Lucke's 1976 *Reflections*, an account of the first years of GVS and the birth of the Geology department. The legacy was practically insured by geologist James H. Zumberge as the first president of GVS. Lucke was the first department chair, and he hired Richard Lefebvre away from University of Georgia in 1967. The Lefebvre family has allowed us to include images of telegrams Dick received from Lucke which document his arrival in those early years. The Geology department has come a long way, baby! I hope you enjoy catching up with us as much as we enjoy hearing from you. I've been with these "Rock Stars" for 15 years and I am not bashful to say that I might live vicariously through our alumni, old and new alike, and I enjoy sharing your news.

I received a note from **Mark Arnold** (GEO, 1975) in January (see his message in Alumni News), and then had to get his book, *Monster: The Story of Young Mary Shelly*. This sent me on a new literary path, including Mary Shelly's *Frankenstein*. George Byron has been added to my reading list too. Hey, it's going to be winter in Michigan soon! Thank you Mark! Best wishes to all in the new year!

Peter Riemersma (riemersp@gvsu.edu) **Nick Brown** (GEO, 2018) presented a poster of our research on Fish Lake carbonate nodules (microbialites) at the North-Central GSA meeting in Iowa and he is pursuing a PhD at Florida Atlantic University. **Lauren Chwojncki** is continuing the microbialite project and this summer conducted numerous fish tank experiments with the nodules, monitoring dissolved oxygen concentrations to investigate biological activity. I assisted Pat Colgan and his student **Ella Larson** on their sapping valley investigation at Hemlock Crossing. As a hydrogeologist it was satisfying to see dune erosion and valley formation solely from a small stream fed by groundwater discharge.

I spent my spring break this year in Florida with former GVSU Affiliate Instructor and alumni **Larry Fegel** (GEO, 1973), planning out a new field focused course that I am teaching in winter 2019 called "Geology, Natural History and Water Resources of Florida". The 3 credit elective course is focused on a 10 day spring break field trip during which we will examine springs and sinkholes, vertebrate fossils in the Peace River, oolitic and coquina limestones and of course the modern reef environment! I taught for the first time Geo 360, an upper level general education issues course developed by Peter Wampler. The focus of the course was "Water Resources" and I had students conduct research on a water issue (e.g. Wolverine PFAs, Flint, Ice Mountain, Enbridge Pipeline) and present their findings to Allendale High School students. In the Geo 312 (Sed-Strat) field trip to Kentucky, this was the first year that no student found a complete trilobite!

I coached the Allendale High School Science Olympiad team to a first place finish in Rocks and Minerals at regionals and I signed up GVSU students **Claire Thomassen, Maria Lampertius, Matt Collins** (GEO, 2017), **Ella Larson, Taylor Weeden, Zach Mills, and Conner Palm** to help coach other Science Olympiad events for Allendale. This summer I again helped develop and organize the Seventh Annual Allendale Community Field Day, with a theme of "Things That Count". This community event involved a variety of educational activities like origami, code breaking, counting beads and an estimation station. Unfortunately it was also the first year that we were driven inside due to bad weather. Other highlights of the year include supervising with Tara Kneeshaw numerous sessions of the Energizing Our World "Hydropower" event, coordinating the 14th Geology Chili Contest and 12th Earth Science Week, organizing a geology major exit interview, new geology major overnight retreat, and the geology calendar.

My son Dakota and I spent a month this summer on the road headed to the Pacific Northwest, stopping for hikes in Glacier NP and Olympic NP and also looking for thunder eggs and petrified wood in Oregon and dinosaur bones on a private ranch in Montana. We spent over a week in the Olympic Peninsula visiting Seattle, whale "tail" viewing, and watching a Sounders MLS soccer game. The "boy" is now driving and taking two classes a semester at GVSU while a junior in high school.

John VanRegenmorter (vanregjo@gvsu.edu) I'm proud to once again be writing this update as a visiting professor at my Alma Mater! This is the start of my second year, and I couldn't be happier! I'm falling more and more in love with teaching and passing on my passion for all things geology. I've been keeping myself busy over the last year. I've had the opportunity to visit a number of elementary school classes to talk rocks and fossils, guest lectured for the Tulip City Gem and Mineral Club, and have had the opportunity to work with the 'Pathways To College' program here at GVSU. I even sneaked in a trip to Arizona and the Grand Canyon for Spring Break with my family.

This year is starting off with just as much excitement. I've already spent time with some wonderful preschoolers at the Rockford Child Care Center...I think we definitely have some future geologists there! I am also working with Grand Rapids Community College Professor Tari Mattox and potential GVSU GEO students on an independent study project centered on a collection of (mostly) vertebrate fossils housed at GRCC. These fossils apparently collected by infamous turn-of-the-century North American Paleontologist Charles H. Sternberg. Among Sternberg's most notable finds are the 'dinosaur mummy' and both of the famous 'fish within a fish' fossils. This project is focused on not only identifying the fossils, but also attempting to find out how these fossils came to arrive at GRCC. We have already found fossils of mosasaurs, turtles, rhinos, dinosaurs, and the "swords" from a couple of swordfish-like fish...all collected by Charles Sternberg. A GRCC student will be organizing these and other amazing 'Sternberg Fossils' into a display with all sorts of great info on the fossils and Sternberg himself. If you are on GRCC's campus be sure to stop by the Physical Sciences department and check it out! I have also been in discussion with the Grand Rapids Public Museum about loaning us a mastodon tusk to display in the Geology Department here at GVSU! That will likely happen early

next semester, so be sure to come and check that out too!



John and Bryce

I wish all the best to everyone reading this and their families! May this year treat you all as well as it has been treating me and my family!

Patricia Videtich (videticp@gvsu.edu) Hello everybody! My big news is that as of May 1 I retired! I can't really figure out what I have achieved in the last several months, but I have been very busy. First, just the act of retiring turned out to be a series of parties! There I was, happily giving my last lecture ever (Oceans) when in walks Conniver-in-Chief Figen pushing a cart with a cake on it! And a whole bunch of faculty followed baring many bouquets of flowers and chocolates and cookies and all kinds of gifts! Then came in students each carrying a single flower! As I told the crowd at the time, I get emotional over the state of coral reefs, so students carrying single flowers almost put me over the edge!

A bit later I was getting ready to teach my last lab (Exploring the Earth) when I slid a whiteboard over and there, hidden away, was a "Happy Last Lab" sign covered by sketches of flowers and the signatures of all my colleagues! Even my last teaching assistant ever,

Nick Brown (GEO, 2018), gave me flowers and a very nice card! So after those two events I was at least smart enough to figure out that something would happen at my last Seminar, but I did not expect a very elaborate roast complete with slides and more gifts – some funny and, some, actually nice!

Finally, Ginny and Jon had a party for me at their house, more roasting and cool gifts! Plus, almost everyone at the party was wearing a floppy hat, just to see if I would notice. I did. And Ginny gave me her floppy hat right off her head! So now, amongst all my other cool gifts, I even have a new floppy hat! To top it all off, **Julie Hewlett** (GEO, 1977) and her husband were there – what a nice surprise! After so many best wishes and special events put on for me by my coworkers, I wondered if I could "unretire"! Our department certainly is filled with a bunch of wonderful people, schemers, but wonderful people just the same! Thanks to all!



Patty's last day of teaching.

Now back to Earth. I am actually going to have an office for a little while yet - Ginny and I switched offices. (Please rest assured that I got rid of most of what was in my old office; all that stuff did not move upstairs with me!) With Bill Neal's help I am trying to figure out what to do with historic departmental papers/books, some of which will go to University Archives. And I might write a bit more about the history of the department, etc. As for travel, yes, I will continue to travel, but so far I have been too busy to plan anything!

After four years of going to GVSC as a student (1976 grad) and 26 years of teaching here, I am truly a "Laker

for a Lifetime”, so I plan to continue to go to geology picnics, chili cook-offs, and other geo events. I hope to see some of you on those occasions. If not, when you are in town and stop by the department, I would love to see you. I will still be living very close by for the foreseeable future, and, if you let me know you are coming (email videticp@gvsu.edu as always), I will try to be at school to see you. So please keep in touch.

Peter Wampler (wamplerp@gvsu.edu) I am sabbatical this year and it has started off well. This fall I completed an exhibit with Dr. Ellen Adams that is on display in Lake Ontario Hall called “[Wandering Seeds](#)”. It showcases Haitian art and describes what GVSU students saw and experienced on the 2018 Haiti study abroad that I lead. I am taking a break from leading the trip to Haiti in 2019, but I will be leading another trip in the spring of 2020. I also finally completed a paper with a one of the first Haiti study abroad students and GVSU geology alum **Hayley Schram** (GEO, 2017) about Hand-Dug wells in Haiti that was published at the end of August,

https://www.mdpi.com/search?q=&authors=Wampler%5C&journal=&article_type=&search=Search

This winter and next spring I will be learning a new DNA-based water analysis technique called quantitative Polymerase Chain Reaction (qPCR). I am excited to learn this new technique and hopefully apply it to research in Haiti and locally.

My sabbatical has not been all toil and to do lists. I just returned from a three-week pause in my sabbatical academic work. I travelled to Iceland and Europe for three weeks. Iceland was amazingly beautiful. Spending seven days in Iceland as a geomorphologist was a bit like trying to visit the Smithsonian Museum in a day, there is way too much to see and do.



Our humble Air B & B in the eastern Fjords near Seydisfjordur

I climbed into glacial cirques, watched icebergs wash onto the beach, saw my first reindeer in the wild, and experienced a house-sized iceberg roll about 100 yards from where I was standing. We had about a 1½ days of cloudy/rainy weather while in Iceland and we were mainly driving for most of that time. I definitely want to go back for more exploring in Iceland with my wife.



Near the Matterhorn

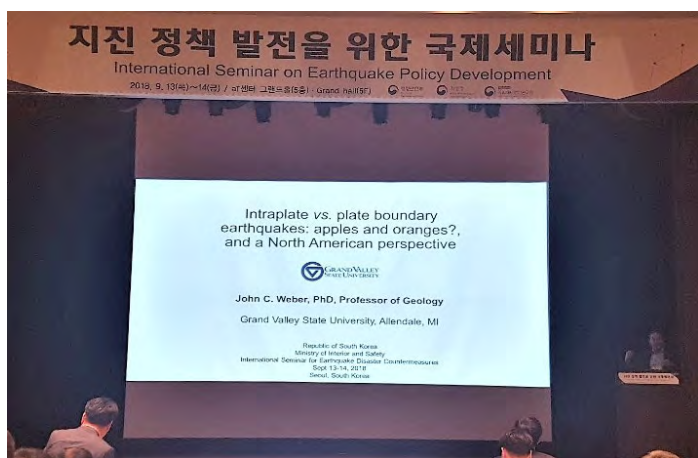
I was also able to cross a bucket list item off my list when I spent a day hiking around the Matterhorn near Zermatt, Switzerland.

An added bonus was I got to spend the weekend with my nieces and nephews who I rarely get to see. The views of the Matterhorn and surrounding glaciated terrain were spectacular and the weather could not have been more perfect. While in Italy I was able to return to a place I lived for a year when I was 10 years old. It was surprising how much was the same and how being in a place causes sorts of buried memories to spark to life.

I am currently working with students on a diverse set of environmental geology topics including household radon in Michigan. In mid-October I gave a presentation to a group of Department of the Environmental Quality (DEQ) geologists in Roscommon, Michigan. It was fun to share about our research and hear about many of the topics that DEQ is dealing with at the moment like PFAS and other environmental issues. I have a couple of students working on understanding the fouling of Sawyer water filters by calcium carbonate and how the filters can be cleaned once fouled. We have distributed over 250 of these filters in Haiti so it is important to understand their limitations and sustainability.

John Weber (weberj@gvsu.edu) 2017-2018 was a productive sabbatical year. I took sabbatical for the full year at half pay. I worked on writing several proposals; writing, illustrating, and submitting five papers (two

already published!); and did a lot of work-related traveling, several extended and fun family trips, and plenty of parent pre-teen bonding. Teya Li is now 12 and is enjoying middle school, band, choir, and acting. Work-related travel included: two basin-wide 10Be field sampling trips to the Ozarks with University of Korea visitor Dong-Eun Kim, a Structure and Tectonics forum in Phoenix, a southern San Andreas Fault tectonic geomorphology trip, a GSA Penrose conference in Airo and Coldigioco, Italy, teaching a session of the University of Houston field camp at YBRA, a month at the University of Ljubljana in Slovenia (with family), and a month in the field in Azerbaijan. I gave invited presentation "Intraplate vs. plate boundary earthquakes: apples and oranges? and a North American Perspective" and served on an advisory panel at the "International Seminar on Earthquake Policy Development", Seoul, Korea, September 13-14, 2018. (Photo below)



Greg Wilson (wilsong@gvsu.edu) I am enjoying teaching in Honors again this year (Fall and Winter), and also still keeping plenty busy with department duties. Most of the major remodeling has been completed now and the department materials are settling into more permanent homes. We have for the last few years been working on updating the computer inventories for each of the department collections (rocks, minerals, fossils, maps, and field equipment). We have been moving some of these inventories into a new university system – Filemaker. The inventorying and updating files has been a major task. This has been accomplished with the assistance of number of dedicated student helpers working throughout the year. This past summer I made my first visit to New York City. I was visiting my son, Cooper who is now teaching English to Spanish speaking students in Brooklyn. I was also able to travel this summer with my younger son Luke to the Seattle area. We enjoyed visiting the Olympics, Snoqualmie Pass, Mount Rainier, and Seattle. We also enjoyed visiting

with Susan, while Kevin and his dad were out on their sailboat. Luke is in his second year at the Kent Career Tech Center where he is helping to train students who are interested in pursuing careers in aviation maintenance. I am looking forward to attending the Tucson Gem and Mineral Show with Kevin and Susan in late January and early February. Our goal at the show is to purchase some new items for the Miller Collection as well as pick up some items for the Geology Club to use in their sales. We also hope to visit with Norm TenBrink while in Tucson.

Ian Winkelstern (winkelsi@gvsu.edu) Greetings, everyone! I'm thrilled to have joined the department this fall as a new Affiliate Faculty member. I'm a nearly lifelong Michigander, and my wife Colleen and I have just moved from Ann Arbor. There I did my PhD and a two year postdoc in Earth and Environmental Sciences at the University of Michigan. I'm very happy to be back in front of a classroom after spending the last few years working in a stable isotope geochemistry lab. While at Michigan I worked on research related to carbonate sedimentology and paleoclimatology, and for several years I also got to teach intro geology and field camp in the western US.

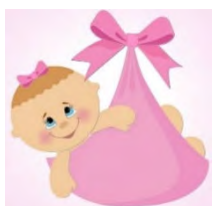


Ian and his wife, Colleen in the Outer Banks of North Carolina this summer.

In addition to moving, this summer I managed to attend the Goldschmidt Geochemistry conference in Boston and to work on a just-submitted NSF proposal. If funded, I hope to bring a few GVSU undergraduates into a larger project studying Last Interglacial climate along the east coast and in Bermuda. I've also got a pending Petroleum Research Fund proposal to work on dolomite formation with colleagues at Western Michigan. With luck, one of these pitches will result in some students and I getting some stimulating science done next summer.

This fall I'm getting my feet wet teaching Environmental Geology and Exploring the Earth. In one case literally, as I did a pretty good job falling into Sand Creek in front of the class during my first field trip. Between the mud and the mosquitos, I was impressed with the resilience and the eagerness of GVSU students. It has been great having a chance to interact with students new to the Earth sciences and to see their enthusiasm for geology. One highlight was tagging along with the new majors field trip to Hoffmaster State Park organized by Peter Riemersma. We shared field stories around the campfire, dug a trench in a (mostly failed) search for cross beds, climbed dunes, and generally had a good time.

The faculty, staff and students in the department have been incredibly welcoming and helpful. I can already tell that this is a supportive and energizing place for students, and I'm excited to have the opportunity to contribute.



Ian and Coleen welcomed their first baby girl, Paige Ann, on October 29!



December 2017 – August 2018

Geology Program Graduates:

Nicholas Brown	Kyle Meyer
Connor Cain	Jaren Miller
Matthew Collins	Joseph Nichols
John DeYoung	John Ouellette
Megan Haessly	Grace Robinson
Cory Hughey	Lydia Spears
Olivia Jamrose	Timothy Seuss
Max Korndorfer	Jory VanEss

Environmental Emphasis:

Nathan Allen	Micaela Fischer
Adam Canute	Madison Koth

Geochemistry:

Parker Sutton	Daniel Tjapkas
Bryce Thiel	

Geology Minor Graduates:

Kyle Hart	Paige VerBouw
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2018-19 Faculty and Staff

[Caitlin Callahan](#) – Assistant Professor

[Kevin Cole](#) - Associate Professor

[Patrick Colgan](#) – Professor

[Jeremy Gouldey](#) – Visiting Instructor

[Kelly Heid](#) - Affiliate Faculty

Tom Hendrix - Emeritus Professor

[Tara Kneeshaw](#) - Assistant Professor

[Stephen Mattox](#) – Professor

[Figen Mekik](#) – Professor & Chair

[Bill Neal](#) - Emeritus Professor

[Ginny Peterson](#) - Professor

[Janet Potgeter](#) - Department Coordinator

[Peter Riemersma](#) - Associate Professor

Norm TenBrink - Emeritus Professor

[John VanRegenmorter](#) – Visiting Instructor

[Patricia Videtich](#) – Emeritus Professor

[Peter Wampler](#) - Professor

[John Weber](#) - Professor

[Greg Wilson](#) - Instructor & Lab Coordinator

[Ian Winkelstern](#) – Affiliate Faculty

Currently there are 101 Geology majors, with 21 students having an Environmental emphasis; 6 Geochemistry; 5 Earth Science majors; and 7 Geology minors. There are 90 students in the Integrated Science program.



Geology Club Officers For 2018-19:

[Join us on Facebook!](#)

President: Ian Beek, beeki@mail.gvsu.edu

Vice President: Josh Walker

Secretary: Eric Schuemann

Treasurer: Cate Shagonaby

Sales Rep: Matt Clark

Social Media Advisor: Danielle DeWeerd

Faculty Advisor: Kevin Cole

GVSU AAPG Student Chapter 2018-19 Officers:

President: Nick Priehs

Vice President: Danielle DeWeerd

Treasurer: Jared Eslick

Secretary: Cathlynn Shagonaby

Current Membership: 12

John Weber/Bill Neal - Faculty Advisors

2018 Field Trips

- February 28: Goodale Enterprises, Grand Rapids/Walker oil field, 5 participants.
- April 30-May 2: Petrolia, Ontario, Canada, 12 participants. Supported by AAPG Weeks Foundation Grant.

Trip Leader: Prof. John Weber

Trip Co-Leaders: Prof. Kevin Cole, Susan Jansen, Dr.

Laurent De Verteuil (Ontario Professional Geologist)

Mon April 30: Leave GVSU at 6 am & are planning to be at the museum in Oil City at 10am on Monday. Tour the museum, meet Charlie Fairbank, tour Fairbank property historic (1860s) oil field, Petrolia for lunch (with Charlie Fairbank).



Our host Charlie Fairbank (in photo), is the owner of this family-owned (since 1961) oil field operation in Petrolia, Ontario.

After lunch in Petrolia: machine shop, hardware store, Victoria Hall, oil supply shop, church, etc. Dinner at campsite - Henderson Conservation Area (<https://www.scrca.on.ca/locations/lorne-c-henderson-conservation-area/>).

Tues May 1: Breakfast in Petrolia. London, Ontario core library 10am. Frank Kuri (Dundee Oil/Gas) talk 11am - Lake Erie gas fields. Lunch. Afternoon looking at core. Dinner at home of Laurent & Jean De Verteuil. Camp NE London Fanshawe conservation area (<https://www.fanshaweconservationarea.ca/>).

2018 Student Awards and Scholarships

Edward L. Tremba Geology Scholarship is awarded on the basis of merit to upper class students who have demonstrated excellence in academic performance, intellectual ability, and potential for significantly contributing to the geosciences program.

Marissa Buehler

Benjamin Pummell

Paige Bush

Parker Sutton

Matthew Clark

Amy Tiemeyer

Cory Hughey

Jory VanEss

The Norman and Helen Gibson Geology Field Study Scholarship is awarded to support undergraduate geology students in conducting scientific research.

Eleanore Larson

Mentor: Patrick Colgan

Nicholas Priehs

Mentor: John Weber

Trent Ruby

Mentor: Stephen Mattox

Taylor Weeden

Mentor Patrick Colgan

Geology Student Field Camp Fund provides support to students who will attend field camp.

Nicholas Brown

Megan Heath

Marissa Buehler

Ross Helmer

Adam Canute

Sean Hiles

Matthew Clark

Olivia Jamrose

John DeYoung

Kera Sharpe

Jared Eslick

Ben Pummell

Micaela Fischer

Amy Tiemeyer

Megan Haessly

Jory VanEss

Geology Department Scholarships

Ian Beek

Simon Kinne

Marissa Beuhler

Eleanore Larson

Thomas Byars

Jared Myers

Madeleine Dunckley

Eric Schuemann

Leah Goodrich

Julia Smith

Kelly Jardine

Student Summer Scholars (S³)

Eleanore Larson

Outstanding Geology Major

Matthew Collins

Tulip City Gem & Mineral Club Scholarship is awarded to students chosen by the Geology faculty, and who have shown significant leadership and service.

Nicholas Brown

Adam Canute

Danielle DeWeerd

Indian Mounds Scholarship Recipient

Connor Cain

Mentor: Peter Wampler

Michigan Space Grant Fellowship:

Eleanore Larson

Mentor: Patrick Colgan

Taylor Weeden

Mentor Patrick Colgan

Council of Undergrad Research (CUR) Outstanding Student Research Award

Jory VanEss

Mentor: Ginny Peterson

AIPG, Michigan Section, November 2017

Student Poster Contest winners:

Connor Cain, 1st Place

Danielle DeWeerd, 2nd Place

GSA – North Central, April 2018

Best Undergraduate Poster

Jory VanEss

Geo SSD Presentations – April 11, 2018

Once again, we are proud of our Geology students who presented 15 notable posters during Student Scholars Day. SSD is held once a year to celebrate the scholarship and creative work performed by GVSU students. Faculty-mentored student work is showcased in several venues across campus. In addition to posters, students may show their work through oral presentation, discussion and panel sessions, fine arts exhibits, or performance. SSD is not a scholarship competition, and does not offer monetary rewards.

"Evidence of Silurian Relative Sea Level Change in the Bisher Formation of Northeast Kentucky"

Marissa Buehler, Jessalyn Gonzalez, Montana Hauke, Jakob Szilagyi

"Deformation of Laminae and Bedding in the Upper Ordovician Point Pleasant Formation in Kentucky"

Ross Helmer, Cory Hughey, Kyle Meyer, Nicholas Priehs, Parker Sutton

"Possible Liquefaction Mechanisms in the Genesis and Distribution of Ball-and-Pillow Structures throughout the Late Ordovician Fairview Formation, Kentucky"

Emily Bergel, Simon Kinne, Taylor Weeden, Brooke Yaffa

"Genesis of Meter-Scale Cyclical Shell-Rich Beds in the Upper Ordovician Fairview Formation, Kentucky"

Danielle DeWeerd, Jared Eslick, Vincent Hrnyak, Lindsay Knauber

"Cause of Cyclicity between Fossiliferous Limestones and Shales in the Upper Ordovician Kope Formation in Kentucky"

Robert Allor, Grace Robinson, Matthew Strickler, Julia VanDam

"Evaluation of the Relative Timing of Chert Nodule Formation in Kentucky's Late-Silurian Brassfield Formation"

Matthew Clark, Kristi Hill, Tani Richter, Eric Schuemann

"A Biogeological Analysis of Carbonate Microbialite Nodules That Form in Fish Lake, Southwestern Michigan"

Nick Brown

"Developing ArcGIS Spatial Analysis Methods for Mapping the Distribution, Form, and Areal Coverage of Inland Dunes across West Michigan"

Taylor Weeden

"Using ArcGis to Analyze the Effects of Groundwater Pumping on Groundwater and Surface Water near Evart Michigan"

Robert Allor

"Using ArcGIS to Analyze Well Data and Regional Groundwater Flow to Map the Extent of Groundwater Contamination near Rockford, Michigan"

Gavin Balcom, Lauren Chwojnicky, Micaela Fischer

"What Did Columbus Leave Behind?: Using GIS to Locate Archaeological Sites on Haiti's Northern Coast"

Trevor Pickett, Nicholas Priehs

"Using LIDAR and DEMs to Investigate Groundwater Springs and Possible Sapping Valleys in Western Michigan"

Ross Helmer, Eleanore Larson

"Using ArcMap to Measure Coastal Dune Erosion and Heavy Mineral Introduction Rates near Lake Michigan"

Jared Eslick

"What Really Caused the Flint Water Crisis in the City of Flint, Michigan?"

Vincent Hrnyak

2018 GEOs at GSA – Indy

130th Annual Meeting of the Geological Society of America.

Presentations:

Taylor Weeden and *Patrick Colgan*

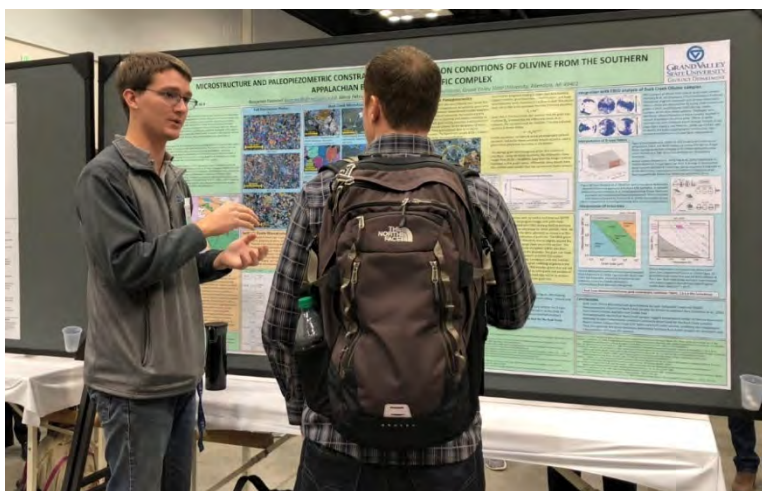
MORPHOLOGY, GRAIN SIZE, AND PALEOWIND DIRECTIONS OF INLAND DUNE FIELDS ON THE ABANDONED BED OF GLACIAL LAKE CHICAGO IN SOUTHWESTERN LOWER MICHIGAN, U.S.A., Paper 120-5

Ella Larson, *Peter Riemersma*, and *Patrick Colgan*

GROUNDWATER SPRINGS AND SAPPING VALLEYS IN OTTAWA COUNTY, MICHIGAN, Paper 34-11

Ben Pummell and *Ginny Peterson*

MICROSTRUCTURE AND PALEOPIEZOMETRIC CONSTRAINTS ON DEFORMATION CONDITIONS OF OLIVINE FROM THE SOUTHERN APPALACHIAN BUCK CREEK ULTRAMAFIC COMPLEX, Paper 96-9



Ben Pummell explains his work on paleo-piezometry of olivine-rich rocks at his GSA poster presentation in Indianapolis

Maximilian Fraleigh, *Eric Portenga*, *John Weber*

Fault-slip analysis on mesofaults of the Ste. Genevieve Fault System, Hickory Canyons State Recreation Area, eastern Missouri (poster)

Christina Hamilton, *R. Douglas Elmore*, *John Weber*, **Andrew Alder**, *Rich Miller*

Re-examination of the Kentland Impact Crater (Indiana, USA): diagenetic, paleomagnetic, and structural analysis (invited talk)

Konsoer, Kory, Geography and Anthropology, Coastal Studies Institute, Louisiana State University, Howe-Russell-Kniffen Geoscience Complex, Baton Rouge, LA and **Richards, Derek**, Geography and Anthropology, Louisiana State University, Howe-Russell-Kniffen Geoscience Complex, Baton Rouge, LA

A NEW CONCEPTUAL MODEL FOR NECK CUTOFFS REVEALED BY HIGH-RESOLUTION BATHYMETRIC DATASETS
155-1

Konsoer, Kory, Geography and Anthropology, Coastal Studies Institute, Louisiana State University, et al.

CURVES, CONFLUENCES, AND CUTOFFS: MORPHODYNAMIC INSIGHTS FROM THE WABASH RIVER 247-8

Renkes, Natalie, Buck, Brenda J. and Metcalf, Rodney V., Department of Geoscience, University of Nevada, Las Vegas
MORPHOLOGY OF RECRYSTALLIZED VS NEOCRYSTALLIZED FIBROUS AMPHIBOLE: IMPLICATIONS FOR POTENTIAL
HEALTH RISKS 24-6

Other activities:

John Weber - Leader Field Trip # 405- Kentland Impact Structure- Newton County Indiana

Ginny Peterson – Session co-chair - Geoscience Education II (Session 145)

Exhibitors:

- YBRA - Booth 634 in exhibition hall – John Weber
- CUR Booth 105 in exhibition hall – Ginny Peterson

GSA Alumni gathering

GVSU was one of several smaller Michigan schools to co-host an alumni reception at the Indianapolis GSA meeting. Faculty attending the meeting included Pat Colgan, Kelly Heid, Tara Kneeshaw, Steve Mattox, Ginny Peterson, and Peter Riemersma. John Weber led a pre-meeting field trip. Three current students presented research results at the meeting and 10 current students attended the meeting. We connected with several alums, including Ron Green, Tom Valachovics, Andrew Alder, Sara Thurkettle, Katy Reminga, Natalie Renkes, Sam DeYoung, Reece Elling, Valerie Voisin. Natalie Renkes won a best student poster award and a travel award for her presentation on asbestos fibers. Also spotted in Indy were alumni Jim Walters (1970) and Kory Konsoer (GEO, 2006).



Taylor Weeden, Danielle DeWeerd, Tom Valachovics, Ginny Peterson, Steve Mattox, Tara Kneeshaw, Andrew Alder, Katy Reminga, Sara Thurkettle, Natalie Renkes, Sam DeYoung, Ron Green, and Reece Elling.

Faculty Publications in 2018

Riggs, Eric M.; **Callahan, C. N.**; and Brey, Jim (2018). "Research on Access and Success of Under-Represented Groups in the Geosciences". In St. John, K (Ed.) (2018). Community Framework for Geoscience Education Research. National Association of Geoscience Teachers. https://commons.lib.jmu.edu/ger_framework/6/

Kneeshaw T. and **Lockmiller, K.**, 2018. Persistence of Polycyclic Aromatic Hydrocarbons (PAHs) in Sediments Following a Tar Sands Oil Spill. *SciFed Journal of Petroleum*.

Mekik, A. F., 2018. Do proxies agree? $\delta^{18}\text{O}$, $\delta^{13}\text{C}$ and Mg/Ca from tests of *Neogloboquadrina dutertrei* in the eastern equatorial Pacific, *Geochimica et Cosmochimica Acta*. doi: 10.1016/j.gca.2018.03.005

- Mekik, A. F.** and Anderson, R., 2018. Is the core top modern? Observations from the Eastern Equatorial Pacific, *Quaternary Science Reviews*. 10.1016/j.quascirev.2018.01.020
- *Barnhardt, W.A., Gonzalez, R., Kelley, J.T., **Neal, W. J.**, Pilkey, O.H., Jr., Monteiro, J.H., and Dias, J.A., 2002, Geologic evidence for the incorporation of flood tidal deltas at Tavira Island, southern Portugal: (ICS 2002 Proceedings), *Journal of Coastal Research*, SI 36, p. 28-36. [*published on line April 2018]
<http://www.jcronline.org/toc/coas/36> <http://www.bioone.org/toc/coas/36>
- Rangel-Buitrago, N., and **Neal, W.J.**, 2018, Coastal Erosion Management. In Finkl, C.W. and Makowski, C., editors, *Encyclopedia of Coastal Science*, 2nd Edition, Springer, Dordrecht, 15p. DOI:
https://doi.org/10.1007/978-3-319-48657-4_409-1
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<https://doi.org/10.1016/j.ocecoaman.2018.01.027>
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Guest Speakers in 2018

Kelly Warner Ph.D., U.S, Geological Survey, Illinois-Iowa Water Science Center, Urbana, IL

Nitrates in Surface Waters.

Richard Rediske, Ph.D., Robert B. Annis Water Resources Institute, Grand Valley State University

PFAS in West Michigan: What we know and should we be concerned?

Karl Campbell, (GEO, 2014) Geophysicist 1, Apache Corporation. An AAPG Student Chapter sponsored event.

An Early Career Overview of an Exploration and Production Geophysicist.

Graham Crockford, CPG (GEO, 1989), Sr. Client Services Manager, Remediation TRC Companies

What to Expect from a Career as a Consulting Environmental Geologist.

Richard Vallery, Ph.D., GVSU Physics Department Head

How to Pass Physics.

Todd Halihan, Ph.D., P.GP. Geology at Oklahoma State University and Chief Technical Officer for Aestus LLC. 2018 McElhiney Lecturer

Electrical Hydrogeology: A picture is worth 1000 wells.

David Boutt, Ph.D., Department of Geosciences, University of Massachusetts-Amherst, 2018 Birdsall-Dreiss Distinguished Lecturer

Water and Lithium: The nexus of hydrogeosciences and green energy in the transition from fossil fuels.

Earth Science Week Lecture Series: November 12-16

The Geology department continues our tradition of celebrating Earth Science Week with a series of guest speakers. As always, Peter Riemersma organizes a series of knowledgeable invited speakers, including local environmental specialists, academics and alumni. Our celebration of ESW is recognized during a week that doesn't include other major events like mid-terms or GSA. The great turnout of students attending the talks is confirmation of the quality of our speakers and topics.

Tom Valachovics (GEO, 2017), Department of Environmental Sciences, University of Toledo, Toledo, Ohio

Stimulating Sediments and How to Date Them: An introduction to OSL.

Mike Bair (GEO, 2016), Project Geologist and Zach Curry (GEO, 2017), Project Scientist, Pam Jackson, Marketing and Communications Manager, Envirologic Technologies, Kalamazoo, MI

Careers in Environmental Consulting: Case studies and real-world expectations.

Dr. Brian Bodenbender, Department of Geological and Environmental Science, Hope College, Holland, Michigan

An overview of plastic and microplastic pollution in the Great Lakes region: A probable problem, a paradox, and potential partial solutions.

Richard Lassin, P.G., CEO & President, North American Resources

Economic Geology 101: The discovery Michigan's newest gold/zinc deposit. Menominee County, Michigan.

Mike Bair 2016, Project Geologist, envirologic Technologies; A. J. Barrette 2015, Geologist at Wolverine Gas; Brian Beach 2006, Project Manager, ERM; Zach Curry 2015, Project Scientist, envirologic Technologies; Colin Plank 1997, Senior Geologist, Burns-McDonnell

What Does a Geologist Do?

A Panel of GVSU Geology Alumni Discuss Their Careers and Answer Questions .

Dr. James Martin-Hayden, Department of Environmental Sciences, University of Toledo, Toledo, Ohio

Visualizing geology at the surface and below from the land's surface and above.

This newsletter is published by the GVSU Geology department. The deadline for submissions, November 1, is not strictly adhered to, but we must draw the line somewhere. Retired and current geology faculty and staff participate in editing, while Janet Potgeter does the layout. Contributions are most welcome from everyone associated with the Geology department now and forever.

Future GEOs do good in the Badlands: Hudsonville students save hiker during South Dakota trip



Twenty-six Hudsonville high school seniors, led by their science teacher **Chris Bolhuis** (GEO, 1994) are being called heroes after helping a hiker who fell down a steep ravine in the South Dakota Badlands.

Chris Bolhuis, a wildlife first responder, did what was needed to be done when he spotted a hiker needing help during a June 2018 field trip. Multiple news outlets ran the story.

The group was about to leave the park when Chris spotted the woman who had fallen 50-60 feet down a ravine.

"It was a steep slope, so we got all our kids back, and we made like a human chain, carrying her up the ravine," Bolhuis said.

His students helped carry the hiker, who couldn't put any weight on her left side, nearly half a mile up a steep ravine.

"It was hot out, it was tough work. Some of the guys didn't tap out once, they were soaked. This was hard work out in the badlands. But it was totally worth it in the end," Hudsonville senior Devin Elenbaas said.

Cellphone reception in the area is spotty, and it takes park rangers and EMS personnel longer to find someone needing help.

"I think that without the amount of kids we have here, I'm not sure that the paramedics could have gotten her out safe. I think it was a blessing that we had this many people out here at this time," Elenbaas said.

The students were there to study geology, but they say this was an important lesson they normally wouldn't have gotten.

"We weren't expecting this. We were expecting to be gone, and go to our next destination. This hour long detour we took...we had to fit the need for the

situation, and do the best that we could do," Elenbaas said.

The Pennington County Sheriff's Office said the students were primarily responsible for saving the woman's life as the local authorities could not have carried her out without their help.

Bolhuis says that in his 17 years doing this trip, he's never had a rescue quite like this one. The kids spent the next day hiking Mount Rushmore.

in Memoriam

Remembering Fred Bevis

Frederick Bevis, emeritus professor of biology, died February 20; he was 83. On June 1st a Memorial was held in Padnos Hall where family, faculty, former students and friends celebrated Fred's life. Fred began his teaching career at Grand Valley in 1964, and was a founding member of the biology department in 1967, then called the Department of Biological and Environmental Sciences. He served a term as Biology Department chair, and University Club President from 1978-80. Beyond his service to GVSU, Fred had broad interests in the Earth Sciences, and he was always a friend to the Geology Department, and participated in geology events. Even after he retired from Grand Valley in 1995, Fred still went on Kevin Cole's extended field trips, and he loved interacting with students. His interests helped guide his son **Ken Bevis** (GEO, 1987) to become one of our majors, who went on to an academic career at Hanover College.

Alumni News

Arthur Brintnall (GEO, 1970) (From an article in the Grand Valley Advance, May 2017) Arthur Brintnall received the Member of the Year award from the Michigan Society of Professional Surveyors (MSPS). Arthur spent more than 43 years surveying. In the early days, the tools of his trade included a 100-foot measuring tape, a level, and a "dip-needle" -- a compass set up to work vertically and find iron stakes. In later years he used GPS devices and electronic scanners, and when he retired from Prein & Newhof in 2014, surveying drones were just coming into use. Most of his company's clients were engineering companies and local municipalities. Brintnall and his

wife, Caryl, raised three children, Ryan, Robin and Tracy. The couple occasionally takes part in re-enactment events that celebrate the life of a surveyor in pioneer days.

Dan Verwoert (GEO, 1970) I have accepted a position at Wagor international School in Taichung, Taiwan teaching Earth Science. I have traveled and worked in SE Asia for the past 20 years mostly in Thailand but a couple of years in Myanmar teaching science and math. Starting my new job today. Life is a great adventure.

Sally Covyreau (GEO-GSCI, 1973) Practice Manager, Psychology Associates of the Fox Cities, Menasha, WI, and totally enjoying that challenging job while loving life, including six grandchildren and adventures, wilderness canoeing in the Boundary Waters, MN, hiking Utah's national parks, and kayaking on Lake Winnebago and Door County, WI. I fondly recall the classes and professors at GVSU as well as the adventures with the Geology Club and sailing Lake Michigan with the limnology class.

#Historical: *Patty Videtich found the complete hard-copy edition of the 1973 "The Swamp" while cleaning her office recently. All two pages are now archived at our [Newsletter website](#). The earlier version was a donation by Roger Haskins, and Patty set out to find who the authors were. Roger has some memories of 1973.*

Roger Haskins (GEO, 1973) The "Swamp" copy I sent was found by accident in an old file as I was sorting out past accumulations of detritus. I doubt if I will find any more but if I do, I will send it to you. The "Swamp" began I believe in my junior year at GVSU and I was the "editor" for two years until I graduated and left for Manitoba. A number of us contributed to it, both for Biology Club and Geology Club. Fellow conspirators were Larry Austin, Eric Christrup, Roger Antonides, Al Fayen, John Pedden, Doug Bowden, John Dombroski, and a couple of others. Larry is still in GR and Doug is still active in senior management or exploration company in Nevada. He is part of my LinkedIn crowd. I believe "The Swamp" was published several times a year by the Geology Club.

On a personal note: We are starting to dry out from the rain down pours courtesy of Florence. The ground here is over saturated and soggy enough to swallow a front end loader. Genny has received her GIS certificate (she went back to school for it, as her degree in wildlife conservation wasn't getting permanent employment). She also enjoys doing interpretive programs and learns on the run.

Richard "Dick" Williams (GEO, 1973) "While I was an Undergraduate, I had an Art class, where I painted a representation of Lake Huron Hall, which bought me an "A". It hung in Office of the Dean of TJC (Thomas Jefferson College) for three years. I almost had to steal it, to get it back."

The Williams family has generously donated the picture to the university.



Lake Huron Hall, Allendale Campus, ca 1970

Mark Arnold Ph.D. (GEO, 1975) I think I'm safe in saying I could never have foreseen what my life would be like following my time at Grand Valley. After graduating in 75 (or somewhere around there) I moved to the coast of the Gulf of Mexico to work on sediment identification. My only significant contribution to Geology was one report for the state of Alabama using tidal gauge data to document the eustatic rate of rise in sea level for the northern gulf coast and the first practical application of a sediment transport via littoral processes model to project future coastline location in the wake of Hurricane Frederick in 1979.

I left Geology to return to school to pursue a passion for writing. While attending the University of Missouri for my master's in journalism, I was named as one of the top ten student science writers in the nation. A trusted advisor said I would be a good teacher.

Following a stint as an assistant professor at a small school in Minnesota, I again returned to school to finish my education with a Ph.D. which led to a faculty appointment to the California Polytechnic State University in San Luis Obispo, California. Years later, a lifetime of undiagnosed type 1 diabetes led to my early retirement which turned out to be the best thing that could have happened to me. I discovered what I should have been doing all along.

Since my retirement, I published a book that has been called "Serious, knowledgeable and literary," by the

Historical Novel Society of Devon England. It is called *Monster: The Story of Young Mary Shelley*. It uses my background in science, journalism and research to tell the story of the origin of Science Fiction. I am very happy these days living on the central California coast with my wife, Linda (Linda Foss, MTH, 1974), whom some of you will remember as we got married when I was a senior, my three boys, college graduates, married with jobs in their majors and living near us, and my eight grandchildren who are a handful. I shall always be grateful to GVSC Geology, my friends there, and to Larry Austin in particular. Special hello to Larry and Roger and Patty V., may the detritus in your office conform to the law of horizontality. I hope you are all well.

Bob Schulz C.P.G. (GEO, 1975) I have been working part time at Westshore Consulting for the previous three years, and am presently spending about ten hours per week working at Westshore. I have been a geologist at Westshore for 31 years! I still specialize in environmental geology, sand mining and oil and gas consulting. I really enjoy my work and the clients that I spend time with (especially Tim Baker, class of 1977, who manages West Bay Exploration Company). I continue to be involved in hiring and mentoring geology graduates from GVSU, which I really enjoy. Our newest geologist, Adam Mulling (GEO, 2012), is working out great, we were very fortunate to have him join our firm! On a personal note, my wife Barb and I have raised four boys and now have nine grandchildren. We own a home in Gatlinburg Tennessee that was lost from forest fires two years ago, and are rebuilding now. Looking forward to spending time there once it's finished. Life is good, God has blessed us with all we need. I always appreciate my time and continued interaction with the geology gang from GVSU!

Jeff Spruit (GEO, 1975) Hello fellow alumni, GVSU Geology Department staff, faculty and professors emeriti! After 5 years in the oil patch and 29 years in the environmental cleanup business I've decided to hang up the steel-toed work boots and get back into my geology boots, for fun this time! Yup, I'm retiring from the DEQ. My last day is 28 September. It's time for the young bucks to take over and manage state-funded cleanups and direct private-funded cleanups. Diane and I look forward doing many of the things we've put off for years and finding new, more enjoyable things to do together. We've become first time grandparents in February! We look forward to spending more time with our grandson Roczen Dean, a healthy and very happy

little lad. Now I should find more spare time to bother, er visit, that's it, visit Bill Neal and crew.

Greg Kimball (GEO, 1978) I have been working as a geologist, hydrogeologist and environmental consultant for 41 years. Thanks to GVSC professors (Norm Ten-Brink, Bill Neal, Jack Henderson, Dick Lefebvre) I am well trained and have been successful. I am currently with WSP, a global, 45,000 person firm, working on RCRA, and CERCLA investigations and cleanups, and some really interesting due diligence reviews of site remediation strategies and costs for clients or their attorneys. I am also cutting my work hours back to a part-time basis so I can spend more time with my lovely bride of 42 years, and our two (so far) grandchildren. It also allows me more freedom to play my trumpet with my rock and roll band, concert band, brass quintet, and a newly formed semi-professional group, the Twin Cities Trumpet Ensemble. And the story continues; my daughter is finishing her last semester at the Univ. of Minnesota to earn a B.S. in Geology (renamed Earth Science here in MN). It has been such fun talking with her about her classes, and this summer's field camps: geology field in Montana, and hydro-camp in northern MN. I was thrilled to accept an invitation to speak to the hydro-camp class about the real-world work a hydrogeologist/environmental consultant is engaged in. Last year I presented at the International Petroleum Environmental Conference in San Antonio, TX on the Acceptance of LNAPL Transmissivity by the Regulatory Community. Looking forward to whatever's in store, life is good, I thank God.

Steven Benton (GEO, 1988) Work and life have gone on as usual, and I'm one year closer to retirement, at least from my current job. More broadly, the Prairie Research Institute (PRI), which includes the ISGS, managed to survive, pretty much intact, the state's budget crisis, though there was a point in the summer of 2016 when it looked like everyone could have been laid off. What the future will bring for the PRI no one can say, but the upcoming gubernatorial election may have a role in determining that future.

Adam Wygant (GEO, 1993) PTSS Manager Oil, Gas, and Minerals Division DEQ. President of Michigan Basin Geological Society this year and was appointed Chairman of the Environment and Safety Committee for the Interstate Oil and Gas Compact Commission for the next two years.

Chris Bolhuis (GEO, 1994) See *GEOs do Good in the Badlands* (p 19).

Andrew McCarthy (GEO, 2000) Geoscience Manager at Concho Resources.

Rachel Czechowskyj (GEO, 2005) Business Development Consultant

Curran Kemp (GEO, 2005) Working [in Nevada] at an underground gold mine. Seeing plenty of realgar but no gold but that's how it goes for a Carlin type deposit. I am going to miss one thing and that is the mineralogy trip up to Bancroft.

James Rinke (GEO, 2006) Lead Brewer/Social Media Director, Angry James Brewery, Silverthorne, CO.

Kathryn Barnard (GEO, 2007) Project Manager at Jay-Jan.

Joel Kenyon P.G., P.E. (GEO, 2007) I'm married to Kelly (GVSU NRM '06), and we have two rock-loving, dinosaur-obsessed daughters. I work in the oil and gas industry in Denver doing air quality work.



Joel and Kelly



The rock-loving, dinosaur-obsessed daughters. CUTE!

Kevin Weiss (ESCI, 2007) After 10 years I have made the switch from teaching in Benton Harbor to my new home teaching at Covenant House Academy here in Grand Rapids. This school will afford me the opportunity to continue to service "at-risk" youth that need me as much as I need them. Covenant house Academy is located just off South Division between Franklin and Hall. We are chartered by GVSU. I feel like I have found a home.



Kevin Weiss Family

My 3 Kids (Katie, Jay and Jacob) are all now attending Grandville schools with the twins (Katie and Jay) in 6th grade and involved in many school activities (both academic and sports) in the district. Jacob is now in the second grade and beginning to become more involved in the activities that Grandville offers.

I mentioned the 2 major points for a reason...I am now close enough to home that I can assist more with the family as I am currently an assistant coach for Jay's Rocket Football Team.

Jason Heivilin (GEO, 2008) Engineering Technician at Texas Department of Transportation.

Naoma Leonard (GEO, 2008) Wellsite Geologist at Columbine Logging, Inc.

Sara Bostleman (GEO, 2009) I've moved out West and I am teaching Honors Earth Science and Dual Enrollment Physical Geology and Dual Enrollment Environmental Geology at Mohave High School in Bullhead City, Arizona. I've also been the Science Department Chair for three years now, and other exciting news, I am recently engaged and will be married in the Fall of 2019.

Anthony Rodriguez (GEO, 2009) President and CEO of R Resources, Austin, TX.

Nicholas Spicer (GEO, 2009) Mechanical Constructions Engineer at Pinnacle Specialty Group, Inc.

Catherine Carlisle (GEO, 2010) I am currently working for Washtenaw County Parks & Recreation Commission. As Stewardship Coordinator, I help manage land, coordinate volunteers, and conduct controlled burns.

Ester Posner, Ph.D. (GEO, 2010) Esther Posner received her Ph.D. in experimental geosciences at the Bayerisches Geoinstitut (BGI) at the Universität Bayreuth (Germany) in May 2017, and was named the recipient of the 2018 American Geophysical Union (AGU) Mineral and Rock Physics Graduate Research Award. Esther presently lives in Nürnberg with her husband, Andreas, and manages the high-pressure experimental multianvil laboratory at BGI.

Elizabeth Koeman-Shields, Ph.D (GEO, 2011) Assistant Professor of Geology, Angelo State University, Honolulu, Hawaii.

Adam Mulling (GEO, 2012) Project Geologist at Westshore Consulting.

Scott “Louie” Simonson (GEO, 2012) Finished degree at Sun Yat-sen University in China. Now working for EducationUSA in Serbia.

Benjamin Steavenson (GEO, 2012) Physics Teacher at Harlandale Independent School District.

Jonathan Vrugink (GEO, 2012) Environmental Quality Analyst at Michigan DEQ

Ashley Brady (GEO, 2013) STEM Resident at the Gwinnett School of Mathematics, Science and Technology (GSMST)

Eli DenBesten (GEO, 2013) GEOsteerer at FourPoint Energy, LLC.

Joe Klumpstra (GEO, 2013) Project Coordinator at Mateco Drilling Co.

Karl Campbell (GEO, 2014) I'm currently working with Apache Corp in Midland, TX. Staying busy drilling wells and exploring for new opportunities. The work is great but the area is the complete opposite of Michigan. One day I'll be back in greener pastures!

Joshua Ehlich (GEO, 2014) Ph.D. candidate at Northern Illinois University.

Barrett Walquist (GEO, 2014) Staff Geologist, Fleis & VandenBrink, Grand Rapids, MI.

Eric Armstrong (GEO, 2015) Eric started in a graduate program at University of Toledo and is involved in investigating a potential impact crater in rural Seneca County, Ohio. His research is funded in part by a grant from the Ohio DNR.

Chris Vanderlip (GEO, 2015) Chris completed his MS in December and is now a GIS Technician at Center for Applied Earth Sciences and Engineering Research (CAESER), University of Memphis.

Kayla Lockmiller (GEO, 2016) 2018 has been a busy and exciting year for me! I earned my Master's in Environmental Geoscience from Saint Louis University in May! My thesis project focused on urban stream geochemistry; I successfully quantified municipal drinking water and wastewater inputs to total streamflow using chemical tracers. This work will (hopefully) be published in Environmental Science & Technology by the time this newsletter is released! I've also published a paper with Professor Tara Kneeshaw (congrats on your tenure!) on our tar sands oil project in the SciFed Journal of Petroleum. After graduation, I moved to Hot Springs, Arkansas, where I've been working as a thermal water quality intern at Hot Springs National Park.



Kayla Lockmiller

This position is through GSA's Geoscientists-in-the-Parks program, and it has been a great first experience

outside of academia. Arkansas is much hotter than Michigan, but it is beautiful! Alums Cole Vickers and Brittany Ward can attest to that! They visited me here at the start of summer. Next, I'm planning to visit Brittany in the UK, and from there we will be spending some time in France; we're working up to being world travelers like Patty Videtich! Following that, the rest of my future is uncertain... how exciting!

Karen Musser (GEO, 2016) I have been doing well in Hillsboro, OR. I am a Electron Microscopist at Hitachi. I love my job! I get to work with Scanning Electron Microscopes every day which is pretty darn awesome!

Natalie Renkes (GEO, 2016) Won the travel award and best poster for the Geology and Health Division at GSA in November. Natalie is now studying at UNLV, Department of Geoscience.

Chelsey Roth (GEO, 2018) Quality Control Technician, Reith-Riley Construction Co.

Kenton Shaw (GEO, 2016) After graduating in 2014 from GVSU, I attended Baylor graduating in 2016 with my MS in Geology (with a geophysical emphasis). I interned and was offered a full time position with Devon Energy Corporation based in Oklahoma City. I started full time there in 2016 and have recently celebrated my second full year in the energy industry. I currently work as a geophysicist in the shallow producing formations in the Delaware Basin. On the personal side, I got married in 2017 to a fellow GVSU alum (she graduated with a bachelors in mathematics). We have just recently celebrated our first anniversary.

Christina (Sobolak) Giovanni (ESCX, 2016) I am currently working as a middle school science teacher and science curriculum coordinator at St. Fabian Catholic School. This past summer I piloted a program called the Student Spaceflight Experiment Program at my school in collaboration with the National Center for Earth and Space Science Education. My students learned about experimental design while a part of a competition to send an experiment to the International Space Station. On June 29th, one of student team's experiments launched to the International Space Station! They are studying whether Planaria worms have the same regenerative properties in microgravity as they do on Earth. It was an incredible experience for my students and myself to be a part of. We recently received the experiment back from the ISS, and the students will analyze the data this week.

On another note, I got married this summer! I am now officially Christina Giovanni. I married my high school sweetheart after being together for over 10 years. We travelled to Maui for our honeymoon. I loved hiking on Haleakala and teaching my husband about the geology there.



Christina's 8th graders teaching preschool about space.

Brittany Ward (GEO, 2016) I officially earned the MS in August, and am about to send in a manuscript of that research for review. I'll be sure to let you know when it gets accepted. My project was focused on reconstructing moisture patterns at the local level in several different parts of South America in the monsoon region. I used speleothems as my archive and was focused on the Holocene. I got to travel to Brazil a few times for field works, it was really cool! For the PhD I was choosing between UC Davis, UC Irvine, and the University of Waikato. I chose Waikato because the project was interesting, I wanted a chance to live abroad, and I'm getting the opportunity to do a lot of my lab work at the University of Cambridge. I'm here in the UK now at Cambridge before I actually move to NZ. It's been an exciting and inspiring place to work. I'm officially moving to NZ in October, and Cole (Vickers) will be joining me there. He's actually just gotten a lead on Science Tech position at the University! My research here is again using speleothems. I'm doing some method development to use fluid inclusions in speleothems as paleo-temperature proxies. The bigger climate question I'm hoping I'll be able to explore is understanding how the Westerlies over NZ have migrated since the LGM. I'm hoping my speleothem data can corroborate some of the existing NZ glacier studies.

I just started updating my website today. I'm going to be adding more field and lab photos

soon: <https://brimward.wixsite.com/brittanymarieward>

Andrew Alder (GEO, 2017) Surveyor at Prime AE Group, Inc.

Waverly Ferguson (GEO, 2017) PLM Microscopist at EMSL Analytical, Inc.

Gabrielle Lafayette (GEO, 2017) Graduate Research Assistant at University of Oregon.

John Ouellette (GEO, 2017) Mine Geologist at Doe Run Co., MO.

Jonathan Parker (GEO, 2017) Technician with Materials Testing Consultants.

Timothy Suess (GEO, 2017) Environmental Scientist at Applied Environmental.

Sara Thurkettle (GEO, 2017) Graduate Student at Ohio State University.

Nick Vlietstra (ESCI, 2017) Teaching Earth Science at Grand Haven High School.

Fourteenth Annual Geology CHILI CONTEST

2018 Summary

Thanks to all who attended and especially to those that contributed a chili, side dish or dessert. We all benefitted from the record setting 7 desserts and 4 side dishes. Connor Cain dominated again this year and with a different recipe. I also appreciate all the judges who helped make the event a success. As always, thanks to Kevin Cole for the fantastic trophies!

Start planning to submit a chili, dessert or side dish for next year's 15th Contest, February 11, 2019. Next year we will again have two awards for desserts, most geological and best dessert. If you really want a trophy, consider that the vegetarian chili contest was not as competitive this year as in previous years.

Not that we needed reminding but we proved once again that Geology Rules! Here are two great recipes plus a winning side dish so we can relive and reminisce at home! Until Next Year!

Peter Riemersma, Chili Coordinator

The Numbers

14 Chilis submitted (6 student chilis)
6 desserts
4 side dishes
~ 70 Participants
~10 Judges

2018 Award Winners * Recipes below

Best Overall Chili*: Connor Cain

Best Student Chili*: Connor Cain

Silver Certificate Student Chili: Ben Pummell

Most Popular Chili: John VanRegenmorter

Best Vegetarian Chili: Greg Wilson

Hottest Chili: Kevin Cole

Most Geological Chili: Peter Riemersma

Most Geological Dessert: Lindsey Wiley

Best Dessert: Rebecca Sol

Best Side Dish*: Ross Reynolds

Connor Cain's Pork Chili

7lbs Pork Shoulder

5-7lbs Tomatillo

16oz can crushed tomato

4 cans northern beans

2 Red peppers

1 Green pepper

10 Anaheim peppers

3 Celery stalks

2 Banana peppers

2 Jalapenos

Chopped hot peppers (add for spice)

1.5 large onions

0.5 cup fresh chopped cilantro

1.5tbs Hatch Chili Spice

2tbs Garlic

2 Limes (juiced)

3tbs Salt

1tbs Pepper

3tbs Chili powder

1.5tbs Parsley

1.5tbs Oregano

1tbs Paprika

1tbs Cumin

6 Chicken bouillon cubes

Take tomatillos out of husk and roast under broiler till some char. Flip tomatillos place back in oven. They should turn an olive green color. In bowl fold tomatillos inside out to remove flesh. Discard remaining skins.

Cut Anaheim peppers in half length-wise Roast under broiler skin side up until skin is mostly char.

Place cooked peppers in bowl and cover with lid to let steam loosen the pepper skin. Remove charred skins and discard. Dice up the remaining portion of the pepper. Dice up red peppers, green pepper, onion celery banana peppers, jalapenos, and hot peppers.

Combine all ingredients in a crockpot.

Cook on low for 8.5 hours. Remove meat and shred with forks. Return meat to chili and heat for another 30 minutes.

Kevin Cole's Smokey and the Bandit Chili Recipe

In order of addition. Start crock pot on low heat and add ingredient in the following order.

2 - 3" diameter braised onions-caramelized-one red and one yellow-low heat with butter.

8 oz. cooked beans-the ones that I used were shelled pole beans, black, red and white.

4 orange carrots 6"x 1", diced- and braised on low heat-caramelized with butter.

1 large bell pepper, diced and caramelized over to low flame with butter

3 cups sliced and caramelized brown button mushrooms with butter

2 cups dried boletes mushrooms from the Deer Park to Obstruction Point trail on the Olympic Peninsula-Washington State-July 2015

6 cloves of garlic-minced

8 oz. dried tomatoes

8 oz. can of diced tomatoes

8 oz. can of tomato sauce

2 oz. tomato paste

10 oz. of sweet corn left over from the 2017 Bancroft GEO 214 trip

1 chipotle pepper from my garden-smoked jalapeno-diced-wear gloves while handling!!

¼ cup Black Death cooked down in olive oil jalapeno and habanero-dregs from the making of my jalapeno-habanero wine-peppers from my garden

1 tbs. chipotle flakes

¼ cup lemon juice

4 lbs. slow smoked eye of round using 50% black cherry and 50% mesquite chips at 270F for 90' then 150F for 3 hours.

All the dripping - 2 cups of dripping that came from the pan on the shelf below where meat was being smoked.

The drippings includes all the seasonings that I let the meat marinate in and that included 1 tbs. salt, 1 tbs. paprika, 1 tbs. black pepper and 1 tbs thyme.

Total time was 10 hours-a lot of that was smoking [the meat] time and the rest was preparation of ingredients.

Fresh Corn and Pepper Humita (Argentine Corn Bread), Ross Reynolds, Side Dish

6 - 8 ears of corn cut off or about 4 cups of corn

1/2 stick butter

1 yellow onion chopped fine

1 red bell pepper chopped fine

2 Roma tomatoes diced

3/4 cup masa cornmeal

1/2 tsp salt

1 tsp sugar

1/4 tsp nutmeg

1/2 tsp pepper

8 fresh basil leaves chopped

4 oz mozzarella cheese

3 eggs

1/4 cup parmesan Cheese grated

Place corn in blender until finely ground. In a large skillet, melt the butter add onions peppers and tomato. Cook forming a sauce (about 10 minutes). Stir in the ground corn, masa, salt, sugar, nutmeg, pepper and basil until thick and forms a dough. Remove from heat and cool. Stir in beaten eggs and mozzarella cheese. Place in a 9 X 11 inch greased pan. Sprinkle top with parmesan cheese and bake at 350 degrees for 40 minutes or until

Please Support Geology & Earth Science Funding

Thanks to the continued generosity of alums, friends, and faculty of the Geology Department we have several endowed funds that help to support our students and further the mission of the department. Once an endowed fund exceeds the \$30,000 level the department can spend up to 5% of the fund each year. All of the funds listed below have exceeded the \$30,000 mark and are being used to support out students and department!

Information about each fund and guidelines for contributing are provided below. Information on how to donate can be found at:

https://secure.gvsu.edu/giving/index.cfm?sb_path=givonline1.

If you have questions about the process of giving, please contact University Development at 616-331-6000 or universitydevelopment@gvsu.edu.

Funds that directly support students:

Edward Tremba Geology Scholarship - This scholarship is awarded on the basis of merit to upper level students who have demonstrated excellence in academic performance, intellectual ability, and potential for significantly contributing to the geosciences profession. Students must have a GPA of 3.0 or better.

Norman and Helen Gibson Geology Field Study Scholarship - This scholarship honors long-time Tulip City Gem and Mineral Club member, Norman Gibson and his wife Helen. It supports students pursuing geosciences or geoscience education research.

Geology Student Field Camp Fund - This fund provides support to all of our students who are attending field camp.

Richard H. Lefebvre Geology Field Education Fund -

Geology Development Endowment - This fund helps with special needs in the department such as matching funds for equipment or outside speakers.

Thank You 2018 Donors!

Thomas and Lisa Baldwin
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Edward Tremba and Rosemary Ney-Tremba
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John Vrona
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Greg Wilson



Reflections

By John B. Lucke

I had met Jim (Dr. James H.) Zumberge at GSA meetings and exchanged notes on geomorphology with him by correspondence through the 1950's. We liked and respected each other. At the 1963 GSA meeting in New York City (when Grand Valley was only a few months old), he invited me to apply for the post of professor of geology in order to "begin to build the best small geology department in the country". I flew out for a visitation in December, meeting especially George Potter, Arthur Hills, Harry Jellema, and the Zumberges, both on and off campus. I recall our luncheon at Schulers in Grand Haven (when they served full course lunches not snacks); there were over 30 inches of snow at the lake shore but only 5-6 at Grand Rapids, there were several other candidates considered that winter, one of which was the Pennsylvania State Geologist. I was strongly backed by John Frye and George Maxey of Urbana. On April 24th I received notification that the Board of Control had approved my appointment (\$12,000 for nine months). I was immediately asked to submit a list of bare minimal lab equipment for Geology I (Physical and Historical) so as to be "ready" next September, 1964. The "geology baby" was housed in the middle of Lake Superior Hall, as part of the Science division, whose secretary and sparkplug was Mrs. Marie Klotz. I've never had a better one anywhere, full or part time.

Partly to keep me “busy” and partly (so it was said) to “sell” Grand Valley to southwestern Michigan, I was asked to present a TV series as part of an established

local feature "TEN O'CLOCK SCHOLAR." The logistics and moral support were supplied by Nancy (Seidman) Dempsey, then in charge of what is now called College Relations. This series ran for thirty minutes per week, for twelve weeks. I believe I got Jim Zumberge to take one, but I had all the others, including all the props. I called my series (borrowing from Cloos) – Conversations With The Earth. I have no way of knowing how it went over, but the few personal comments I received were favorable. It was a chore, especially culling the props, maps, slides, and the specimens to be used (mostly from my personal collections). I hope it did the college some good.

April 20, 1966 – Appointed Professor of Geology with tenure.

In May of 1966, an all college holiday was declared to dedicate the Loutit Hall of Science. I was privileged to introduce the guest speaker (fellow shipmate on the RV Atlantis in 1948), Dr. Frank Press, Chairman, Department of Earth and Planetary sciences, Massachusetts Institute of Technology in the largest lecture room then available on campus, 132 Lake Huron.

September 28, 1966 – appointed chairman of the Geology Department

In the next academic year, Grand Valley College was formally granted a club charter in the society of Sigma Pi, at ceremonies in the Peninsular Club. An instigator and ramrod of the application, I was elected president in the charter year of the club.

On a visit to Michigan State early in 1966, Dr. Zumberge met Norbert O'Hara, a graduate student in geophysics, who was just beginning his dissertation on the geology of the bottom of Lake Superior. He was quite impressed with O'Hara an Air Force reserve pilot, and hired him to go to the Antarctic to assist in one of his ongoing research projects, and thereafter, to assume duties as instructor of Geology for the 1966-67 academic year. Norbert O'Hara was with Grand Valley only one year.

I pursued the search for a new number 2 personally at the 1966 GSA meeting in Atlantic City, as well as by mail to trusted opposite numbers. One of the latter was Richard Lefebvre, then assistant professor at the University of Georgia. He accepted the post of Assistant Professor after the usual visitation and paperwork. The modern Grand Valley State College Geology Department began with his arrival Sept 1967.

Almost immediately, we began a search for a number 3, preferably a paleontologist-stratigrapher, to complete a minimum solid nucleus for a geology major. In September of 1968 John McTavish arrived from Case Western Reserve University as Assistant Professor, with paleontology and stratigraphy as specialties. In 1971; John moved to the then new WJC.

From January 1 to 15 June, 1969, I requested and was granted a leave of absence to take a South Pacific cruise on the 200th anniversary of Captain Cook's first voyage in the Pacific on the ENDEAVOR. The college granted me \$500 carte blanche to cover the costs of collecting suites or rocks, corals, shells, etc.

Many thanks to Johnny from all of us for recounting those hectic beginnings of our department. We now have an accurate, enlightened, personal account of those early rumblings to be preserved in the departmental archives.

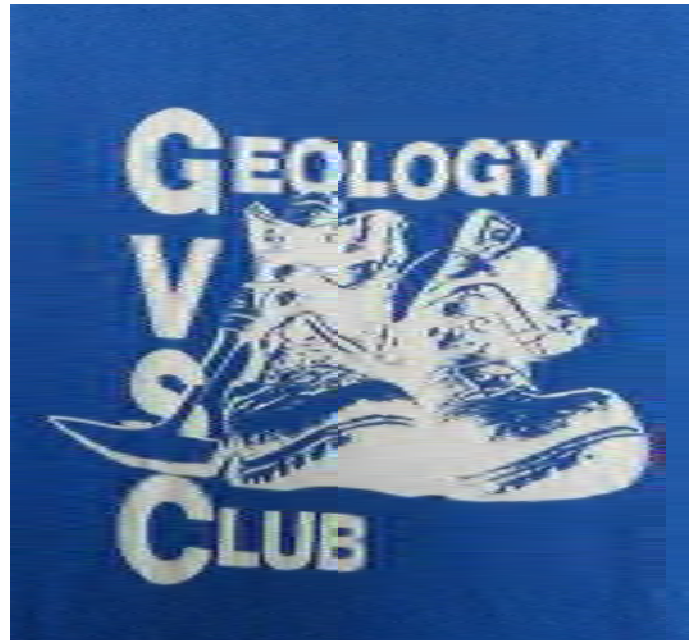


The "new number 2" John Lucke selected was none other than Richard Lefebvre. These telegrams were donated to University archives by the Lefebvre family recently.

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This is a fast message unless its deferred character is indicated by the proper symbol.	W. P. MARSHALL, CHAIRMAN OF THE BOARD	DL=Day Letter NL=Night Letter LT=International Letter Telegram
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AA39 DEC472		
DE GPB309 NL PD=ALLENDALE MICH 24:		
=PROF RICHARD LEFEBRE DEPT OF GEOLOGY U OF GEORGIA=		
ATHENS GA		
=MARCH 14-15 DATES PREFERRED TRY PLAN ARRIVAL GRAND		
RAPIDS NEAR NOON TUESDAY DEPARTING AFTER LUNCH WEDNESDAY		
LETTER FROM DEAN GEORGE POTTER FOLLOWS=		
JOHN B LUCKE GRAND VALLEY COLLEGE.		
WU3881 (20-48) THE COMPANY WILL APPRECIATE SUGGESTIONS FROM ITS PATRONS CONCERNING ITS SERVICE		

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AA09 DEB482		
DE GPA376 NL PD=ALLENDALE MICH 20=		
DR RICHARD H LEFEBVRE=		
103 WILDWOOD CT ATHENS GA:		
=BOARD OF CONTROL TODAY CONFIRMED YOUR APPOINTMENT AS		
ASSISTANT PROFESSOR OF GEOLOGY AT GRAND VALLEY STATE		
COLLEGE FOR TWO YEARS COMMENING IN SEPTEMBER 1967 ATU		
SALARY OF \$10,000.00 FOR 1967-1968 CONGRATULATIONS=		
JAMES H ZUMBERG PRESIDENT.		

GV GEO Mystery Memorabilia: The truth is out there.



Pick and Boots – The Saga Continues

By Patricia Videtich

In last year's newsletter we printed the front and back of a Geology Club t-shirt and asked if anyone knew who designed it and when. I got three responses including one from Bill Neal. It turns out he came up with the "Pick of the Midwest" slogan. Oops, sorry, Bill! **Dawn Vander Zouwen** (1981) wrote: "I still have my 'pick of the Midwest' T-shirt. I know we wore it on the Baraboo trip. Did some digging and figured out the trip was part of the Structural Geology class Spring of 1979 lead by Tom Hendrix. My recollection is that Bill Neal had something to do with it too. I can definitely pin it to winter-spring 1979." And Dawn said she knew she did not have her shirt before the fall of 1978. **Rick Stolarz** (1980) wrote, "I was on that Baraboo Wisconsin structural geology field trip with Tom Hendrix, Dawn and many others. I also wore this shirt during my summer of 1979 geology field camp course with Indiana University and remember instructor Dr. Tom Straw with Western Michigan University looking at it and smirking while he said 'Pick of the Midwest'. Dawn was also on this field camp and we carpooled from west Michigan to Rapid City, South Dakota at the South Dakota School of Mines."

But the story does not end there! I couldn't believe it when this summer as I sorted through old departmental papers I came across a relevant newspaper clipping! The first half of the article is reproduced next:



LaBelle at Large, by Tom LaBelle

Licks and Promises

Printed in The Grand Rapids Press, Wednesday, September 19, 1979

"Four bumper stickers in quick succession downtown:

If You Can Read This Thank A Teacher

Don't Talk About Farmers With Your Mouth Full

Have You Hugged Your Garbage Man Today?

Plumbers Make Better

It's nice to know that pride of occupation has not gone entirely out of the American work ethic.

There is also a T-shirt running around which calls for some explanation. It shows a map of Michigan with a geological pick stuck in it. Beneath are the words, "The Pick of the Midwest."

According to Dr. Richard Lefebvre, professor of geology at Grand Valley State Colleges, the T-shirt reflects Grand Valley's growing esteem in the field of geological science.

The school has been turning out students in droves who go into graduate school and then into research, carrying the Alma Mater's name to the corners of the earth or at least the corners that have interesting geological phenomena.

The information was serendipitous. I called Lefebvre on the off-chance he might have some first-hand slant on the eruption of Mt. Etna in Sicily last week which killed six tourists.

Volcanoes are Lefebvre's specialty.

However, Lefebvre has not been on Mt. Etna, though he is waiting with some impatience for colleagues who have been there to fill him in. "Scientific information is very slow", he said.

Talk about slow. Lefebvre spent the summer at the Craters of the Moon in Idaho scouting a volcanic ridge which last erupted 2,000 years ago. Even this, he said, was "kind of the last burp" of volcanic activity extending back 14,000 years.

Oh, well."

Then the article goes on about two totally unrelated topics. But talk about "serendipitous"! What are the chances of finding that article many months after sending out a request to alums on the origins/timing of the "Pick of the Midwest" logo?! I guess Dawn and Rick's sleuthing and the newspaper clipping settle it! The year of origin for the logo on a t-shirt was probably 1979, or possibly 1978.

Bill also suggested the design for the related "Pick of the Midwest" patch (see photo above), which both he and Greg Wilson (1983) believe came out before the t-shirt. Note that the patch says "College" (singular). Grand Valley became "Colleges" (plural) in 1973 and Bill arrived at Grand Valley in 1971, so the patch probably dates from ~1972. Even though Grand Valley became "College" again from 1983 until 1987 when it became "University", the badge probably was not made between 1983 and 1987 based on both Bill and Greg's recollections that the patch preceded the t-shirt.

But what about the boots? I fear Tom LaBelle didn't write about the boots! Dawn wrote that she "graduated in spring of 81 and at that time no boots". So post spring 1981 the students in the Geology Club reused the "Pick of the Midwest" logo/silkscreen and put the boots on the back of the shirt. I agree with Dawn that the shirt with the boots is probably late or post 1981 because I have this vague recollection that Dick Lefebvre sent me the shirt while I was at Conoco, and I arrived there June, 1981. Greg remembers that the boots were from a stock sketch and that the t-shirt was made before he graduated in 1983. Does anyone out there have any further insights as to the origin/timing of the boots?

And what about the badge? Any further insights there? If we receive additional information from anyone, in geo newsletter 2019 we will continue the tale of "Pick and Boots". Also, if anyone else has "mystery" geo paraphernalia, please send us a photo and we will include it in the next newsletter and see what other sleuths are amongst us.

Thanks to Dawn, Rick, Bill, Greg, and . . . Tom LaBelle for helping us solve the mystery of "Pick and Boots"!

Notes from the field:

> Snowy field trip for the Solid Earth Materials and Systems (GEO 214) class in April.



< Earth Surface Materials and Systems (GEO 220) students visiting the beach on Lake Michigan at Kirk Park, Ottawa County. On this trip students examined water chemistry, soils, and geologic history in three different parks in Ottawa County.

> Students from the Geosphere for Pre-service Teachers (GEO 201) describing overturned Mesnard Quartzite near Marquette.





< Earth History (GEO 112) students found a nice *Stigmaria* fossil during field trip to Grand Ledge, MI. *Stigmaria* is the horizontal root of the *Lepidodendron* tree trunk.

> Peter Riemersma explaining longshore drift to new Geology majors at P.J. Hoffmaster State Park in September.





GEO 214 field trip to the UP visiting the Eagle Mine in September.

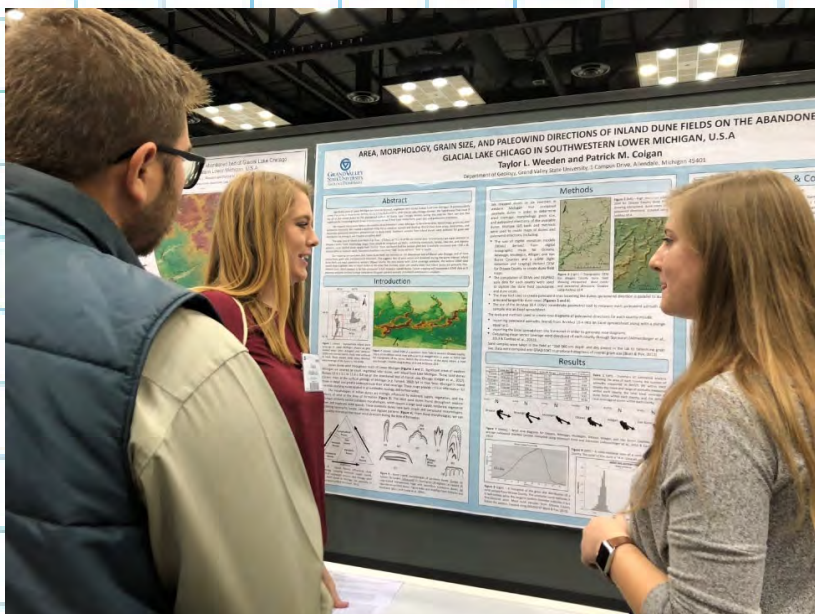
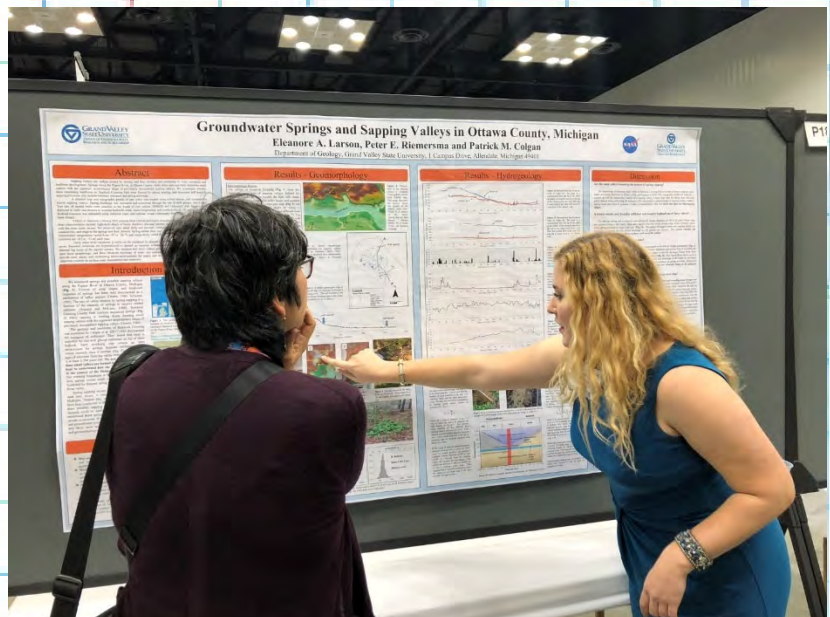


Environmental Geology Students at Kirk Park on Lake Michigan (for extra credit). It warmed up to 43 degrees today! Hard to get down to the beach with all the erosion! Higher lake levels and storms have eroded the foredune and minimized the width of the beach.



< Kirk Perschbacher (GEO, 2007) stopped by the Geology booth at the Majors Fair on November 7.

> Ella Larson explains sapping valleys to Tari Mattox at her GSA poster in Indianapolis



< Alums Sara Therkettle and Andrew Alder visit the GSA poster presentation of Taylor Weeden in Indianapolis.