December 2016 Newsletter

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Greetings from the Chair's office in Geology!

Some call me Dr. Mekik, others Ms. Frizzle. I've been called the Ocean Goddess; Oh Captain, My Captain; and most recently Boss Lady. And I think behind my back I am called the candy pusher! I try to live up to all my nicknames… Jokes aside, it's great to be leading such a venerable department with all its highly esteemed faculty and staff, and bright and successful students and alums. We certainly make a great team!

So what's new in Geology? Well, **Professor Peterson** has been promoted to full Professor, and **Professor Wampler** is currently in the process of doing just that. Congratulations to both! 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. Perhaps our most exciting news for the upcoming years is that we have completely revamped our Geology curriculum. Starting Fall 2017, our Geology majors can either get a BS in Geology or a BS in Geology with an environmental emphasis. We made these changes to provide the best and most versatile education to our students. And we made them in such a way as to ensure that no student will lose time to graduation no matter where they are in their Geology program as we make the shift to the new curriculum. **Professor Peterson** led this effort and she led it well!

Our department looks better too. We settled ever more into our new computer lab, we have a brand new advanced student projects lab, and a bigger rock prep room.

Photo left: Kevin Thaisen and student **Olivia Jamrose** prepare thin sections in the new rock prep room.

We also took over the former greenhouse with our rocks! We have a new dinosaur display created by **Pat Colgan** and **Greg Wilson**. **Janet Potgeter** is the ever smiley, ever organized, and ever dedicated face of our department.

Our students are also doing well! **Hayley Schramm** won the best student poster award in Hydrogeology at the annual meeting of the Geological Society of America! Other students that presented at GSA were **Andy Sparks, Sam DeYoung, Dan Tjapkas, Tom Valachovics,** and **Katy Reminga**. **Cody Garnsey** was awarded an AIPG Scholarship through the help of **John Weber**. Earth Science student **Emily Siriano** and **Steve Mattox** presented "Rates of Earth Processes: Comet Speed to Crawling Plates" at the GVSU RMSC's Fall Science Update. This is just to name a few student accomplishments.

Among our alums, **Jody Wycech's** paper published in *Geology* was acknowledged in an *EARTH Magazine* article titled "Frosted Forams Foil Radiocarbon Dating" with lengthy quotes from **me!** Jody was a Chemistry major and a Geology minor, but she went on to become a foram-loving paleoceanographer and climate scientist with her PhD from University of Wisconsin! It's a joy for me to see Jody at the meetings of the American Geophysical Union. Last year she and I presented posters side by side (See photo above).

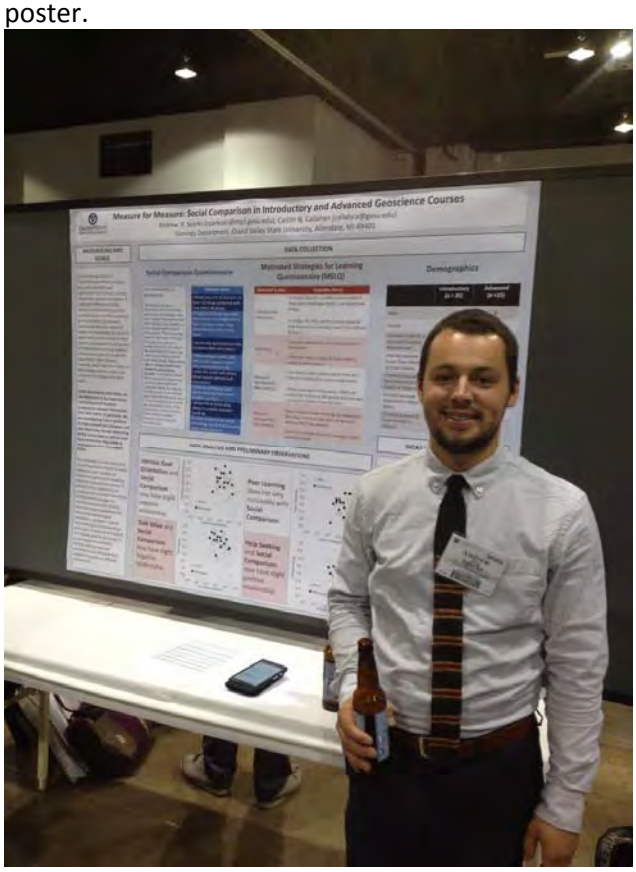
Now alums, **Brittany Ward, Cole Vickers** and **John Howlett** also presented posters at AGU last December. I am particularly highlighting these folks because they were former members of the Mekik Lab. Current members are **Matthew Collins, Danielle Wilcox, Cody Garnsey, Valerie Voisin**, and **Micaela Fischer**.

Our faculty have been busy as well. This year we welcome **Jeremy Gouldey** as our new Visiting Professor and **Ryan Vannier** in his new position as Affiliate Professor. Unfortunately for us, **Pablo Llerandi-Román** left GVSU for better prospects in Puerto Rico. He is missed. Our veteran Visiting Professor **Kevin Thaisen** will be teaching Petrology this winter and Planetary Geology next fall. And our veteran Affiliate Professor **Kelly Heid** snagged a prestigious Innovation grant from the Faculty Teaching and Learning Center so she can chase and film storms! Both **John Weber** and **Pat Colgan** got manuscripts accepted for publication. **Ginny Peterson** co-led a 2-day department workshop for Virginia Wesleyan College in her role as workshop facilitator for the NAGT/Building Strong Geosciences Department Travelling Workshops Program. **Ginny Peterson** also became Chair-elect of the Geosciences Division of the Council on Undergraduate Research. As always **Peter Riemersma** is organizing Earth Science Week (October 10-14, 2016). **Tara Kneeshaw** was identified by the Student Senate as an "incredibly impactful faculty member" and the Admissions Advisory Board Committee (new University Committee) will be bringing recruits and their families to sit in on her lectures. **Caitlin Callahan** and co-authors were awarded the distinction of Outstanding Paper in the Journal of Geoscience Education for their paper titled "*Using the Lens of Social Capital to Understand Diversity in the Earth System Sciences Workforce.*" Caitlin was recognized at the NAGT luncheon at GSA, received a plaque and a $200 cash award. **Peter Wampler** led the first GVSU study abroad (with students) to Haiti (May 14 – June 15, 2016). A very successful trip! **Kevin Cole** and **Susan Jansen** led another adventure filled field trip to Bancroft with the help of Jon Burr. And I will begin my term as President of Paleoceanography / Paleoclimatology at the American Geophysical Union in January of 2017. All this happened just in my first semester as Chair! 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! Your Geology professors miss you and wish you the very best! - Figen Mekik

Left: The new Geochemistry Teaching Lab has been a great new space and will be fully functioning next Fall semester.

Geology Faculty and Staff Updates

Caitlin Callahan (callahca@gvsu.edu) I am very pleased to have completed my first full year at Grand Valley and be well into my second. It has been an eventful 15 months since I arrived in Grand Rapids. In addition to teaching, I have been working on several different research and service-related projects. In the realm of research, **Andy Sparks** (GVSU 2016 Earth Science Major) continued to work on his project from GEO 485. This fall we collected and analyzed data and presented our results at the national GSA meeting in Denver; below is a picture of Andy at his research poster.



His project relates to students' tendency to compare themselves with others. Preliminary results suggest that students who make fewer comparisons with peers may tend to have more interest in the subject material and are more likely to seek help to get clarification on areas of confusion; these conclusions need to be explored further with additional data collection. A different project emerged from a workshop I attended last April that was designed for faculty and students interested in Earth Science teacher preparation. A chance conversation with the lone student attendee (an undergraduate Earth Science major from Beloit College) at the end of the meeting turned into a summer research project. He and I worked together to analyze online descriptions of courses for future Earth science teachers; we found that most courses focus on the science content with relatively few incorporating topics such as instructional techniques or theories of learning and teaching. My student collaborator presented results from this project in a talk at GSA in Denver as well as at the Mid-States Consortium for Math and Science. Apart from collaborations with students, I have been working on projects with other colleagues in geoscience education. I am currently a co-Principal Investigator on an NSF-funded project related to recruitment and retention of minorities in the Geosciences. In terms of service, since January of 2015 I have been an Associate Editor for the Journal of Geoscience Education. This year my duties have included guiding multiple manuscripts through the peer review process for an upcoming special issue on *Interdisciplinary Teaching and Sustainability*.

This year marked a significant personal milestone for me as well: I bought a house. It was an unexpected project initiated by my rental home being put on the market. I did not move very far though. I was fortunate that one of my favorite houses on my street happened to be for sale; I was even more fortunate that my purchase offer was accepted. My family was highly amused that I moved just an eighth of a mile. In many respects, I feel happily settled.

Kevin Cole (colek@gvsu.edu) This year Susan and I met with GVSU Geology students in Big Bend National Park for spring break. It has become an old standby, where to go during spring break to escape the snow. We visited a few new places in Texas, The Davis Mountains and Dune State park.

Our son Sean graduated from Washington University-St Louis in May. We took him on our annual trek west stopping in Ouray, Colorado to visit recent graduates **Cole Vickers** and **Brittany Ward** who had just finished field camp. We did some reconnoitering in Utah for possible future field trips before heading off to the Sierras. The snow pack was close to normal this year and we noticed the reservoirs were not as low as last year. California can use a few more good snow years. It was uncomfortably hot though, even at 10,000 feet.

After the semi-annual Geology picnic in September we had another successful trip to Bancroft. Jon Burr accompanied the class once again along with alum **Curran Kemp** (GEO, 2005). Both were very helpful with information and logistics. No wrong turns, no

police, no lost keys and great weather. We noticed craft breweries have made it to Bancroft but unfortunately were closed when we were in town. News for Bancroft alums: Bear Lake and the MacDonald Mine have been sold and we no longer can visit them!
In Geology Club we had a few events. The club voted on a new logo drawn by student Adam Canute. The club sponsored movie nights, rock and mineral sales, with a new addition of jewelry. This year they had a successful cider pressing aided by the abnormally warm weather.

Patrick Colgan (colganp@gvsu.edu) This past year was a good one with interesting work with students and a little bit of travel. Early in the year I presented new research at the Michigan Academy of Science meeting on the age of inland dunes in Ottawa County, Michigan. Geology senior **Sara Thurkettle** and I sampled inland dunes in summer of 2015 and we had a colleague at Middlebury College (Prof. Will Amidon) determine the age of the dunes using the optically stimulated luminescence method. Our results show that these dunes are much older than Michigan's coastal dunes, which are less than 6,000 years old. The inland dunes in Ottawa County formed during the Younger Dryas event between ~12,900 and ~11,700 years ago during the transition from the Pleistocene to Holocene Epochs. The dunes probably formed after Glacial Lake Chicago drained and sandy lake sediments were exposed and deflated by northwesterly and westerly winds. This research adds to a growing number of inland dune sites in the Great Lakes region that formed during the Pleistocene-Holocene transition. In the spring and summer, I worked with geology major **Tom Valachovics** coring a peat bog and examining Glacial Lake Chicago sediments in Muskegon County. Tom presented our research at the 2016 GSA meeting in Denver. He found that lake sediments demonstrate higher levels of Glacial Lake Chicago in Muskegon County than had been mapped previously. We are hoping to look at the pollen and carbon isotopes in the peat core this coming winter. We have obtained several radiocarbon ages of the core that dates back to the middle Holocene (~6,000 years ago). In July, Kelly and I travelled to Scotland. We stayed in Edinburgh for a few days and traced the haunts of James Hutton to famous sites like Arthur's Seat (an eroded volcano), and Siccar Point (an angular unconformity). We even found where James Hutton and his friend Joseph Black are buried (Greyfriar's Kirk Cemetery). We saw some spectacular glacial erosional features in the Cairngorms, and in Glen Coe in the Scottish Highlands for the rest of the trip. Cenozoic basalt flows on the Isle of Skye reminded me of Iceland. Besides the whiskey, a final highlight for me was seeing the "Parallel Roads of Glen Roy". These are abandoned shorelines from freeze and thaw along the shore of a glacial lake that formed at the end of the last glaciation during the Younger Dryas. The "roads" were first correctly interpreted as glacial lake shorelines by Louis Agassiz in the 1840s, after Charles Darwin and Charles Lyell had incorrectly interpreted them as raised marine terraces. The end of summer once again found Kelly and I at the cabin at Seul Choix Point in Upper Michigan. Lake Michigan is now at its highest level in many years and the shoreline was much closer to the cabin, which made it much easier to get our kayaks in the water! Hope everyone is well and has a great year. Best wishes in the New Year!

Jeremy Gouldey (gouldjer@gvsu.edu) Hello! I am incredibly excited to be a new part of the GVSU geology family this year, and have found the department so incredible welcoming and enjoyable to be a part of! Since I am new, let me introduce a bit about myself to you. I am originally from the Detroit area (but lived in the Chicago area before that), and completed my undergraduate degree at Albion College in Albion, MI, where I studied Eocene crocodiles and turtles, and also some GIS applications for use in paleontological studies. After graduating, I worked as a hydrologist for the USGS for about a half a year, then started my M.S. degree program at Ohio State University, where I switched focus and began studying paleoclimates using carbonate geochemistry. While at Ohio State, I had the opportunity to do field work in Nevada, Utah, and even spent 2 months looking at the Permo-Triassic boundary in Antarctica. Getting to travel there had always been a life-long dream of mine! From there I went on to complete my Ph.D. at Northwestern University, where I looked at carbonates in Namibia to study carbon and sulfur cycling processes during Snowball Earth. While in Chicago, I taught classes for the University of Illinois – Chicago, Loyola University Chicago, and I also developed workshops with the Education department at Northwestern, which I then presented to both Masters students and Chicago area teachers on how to better implement teaching the earth sciences in middle school and high school curriculum. I am very excited to be teaching here at

GVSU, coming back to Michigan has been wonderful, and I am really enjoying interacting with the students here. Feel free to stop by my office anytime to say hi!

Kelly Heid (heidke@gvsu.edu) I Still enjoying teaching and being with the students in the GEO111 labs and the GEO203 Weather course. The students are a lot of fun and keep me hopping. This past summer Pat and I spent some time in Scotland. We did the touristy stops like seeing Edinburgh Castle and stayed a few days in an old Abby on the shores of Loch Ness. Pat gave our wanderings a James Hutton themed twist. How many folks can say they got a private tour of Hutton's grave site or climbed down to the waterline of the North Sea to see the classic Siccar Point unconformity? This next year I will be working on a FTLC Innovation grant funded by GVSU to create some instructional materials for the GEO203 course. A student and I will be going on a Great Plains Storm Chase. We plan to film the scientists using equipment, weather analysis briefings and we hope to capture some severe weather footage.

Tara Kneeshaw (kneeshta@gvsu.edu) Hi Everyone! I can't believe it's this time of year again. I've continued to keep myself very busy with projects at school and on the home front. The spring of 2015 was an exciting one with lots of student research projects and presentations. It culminated with presentations by recent alums, **Kayla Lockmiller** and **Logan Knoper**, at the 2016 GSA North-Central Section Meeting in Champaign, Illinois. Kayla presented results from research on the Kalamazoo River oil spill (receiving an honorable mention in the poster competition for her work) and Logan presented on an assessment of steam daylighting on Little Black Creek in Muskegon. I spent the summer finishing up some ongoing projects and writing. I also once again taught the Groundwater Sampling and Monitoring portion of WMU's Hydrogeology Field Camp in July. Our GVSU students have performed quite well at the camp. In August Josh and I went off on our annual adventure, this time we headed to Utah! We spent a little over a week in and around Moab with stops in Colorado at the beginning and end of the trip. Highlights included the big parks (of course!): Arches, Canyonlands, and Dead Horse. But we also went off the beaten track and did some exploring all around the La Sal Mountains. We stayed in a cabin at high elevation so we were able to cool off in the evenings and enjoy amazing views of the Milky Way. On the home front we planted 500 Fraser fir Christmas trees and welcomed 14 more chickens to the flock…things are getting busy around the homestead! This fall has been all about Geo 105, planning cruises and starting new research projects. I have a feeling 2017 is going to be an equally exciting year! Cheers!

Steve Mattox (mattoxs@gvsu.edu) The greatest reward this year was seeing the Earth science majors graduate and compete for (and earn!) the exact jobs they most wanted. It helps that they also earned an Integrated Science endorsement, which allows them to teach all sciences, and seems to be a requirement in most buildings. Three of the students, **Sarah Van Goor, Christina Sobolak**, and **Claire Sobolak**, gave a swansong presentations at the Michigan Science Teachers Association meeting.

I tested 141 high schools students in the spring for college physical geology credit. About half passed and several will start as geology majors at GVSU, Michigan Tech, or CMU. GVSU Earth science alum **Joe Spadafore** (2014) is teaching at Forest Hills Central and is joining the program along with **Jeremy Cusick** (2007) at Kenowa Hills. Nice to have more schools near GVSU participating. In all I think I will test over 350 students at 12 schools in the spring.

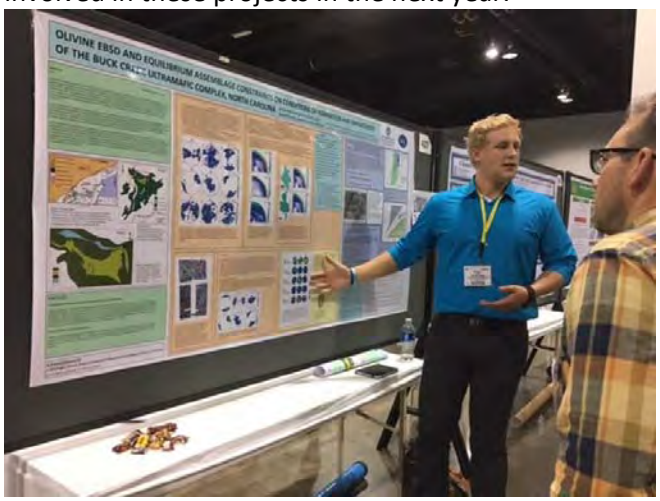
The NSF InTeGrate grant is nearing completion and has allowed us to build a demanding Integrated Science secondary major to prepare science teachers. It includes a new course co-taught with biology and geology faculty. The grant also supported better communication with our peers at MCC and GRCC. It is now common for me to run fieldtrips with Amber Kumpf and Tari Mattox and their students. The fall trip is Marquette and the spring is a transect of the Illinois basin. It's great to meet these students before they start as geo majors at GVSU. 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. It's

a large project with many moving parts and many dozens of people but great, challenging fun. I enjoy working with my MTU peers and building connections to GRPS teachers. We are pilot testing materials and receiving national attention for providing one model to address NGSS.
In the spring I travelled with about 15 students to the National Science Teachers Association meeting in Nashville. In the fall, I joined the GSA Policy Committee, a great group of people with some interesting challenges.

Bill Neal (nealw@gvsu.edu) "Anthropocene" – 'relating to or denoting the current geological age, viewed as the period during which human activity has been the dominant influence on climate and the environment.'
As we age, time accelerates, so I support adding this Epoch, but maybe tweaking the Name to "Arthritocene" or something reflecting humanity's aches and pains, and Michigan's warmer summers (algiopyrocene)! Our family activities are slowly returning to normal as Mary's ankle continues to heal. In April we did a trip to Death Valley, in spite of her still being hobbled, and the geology brought back memories of field trips led by Angela Hessler. If you visit there, make sure you have a 4-wheel drive vehicle and do the Titus Canyon drive! After living in Michigan for 45 years, we finally made it to Beaver Island In August – a Great spot in our Great Lake. We continue to celebrate our grandchildren and great grandchildren! In September we opted to attend the AAPG Eastern Section meeting in Lexington, KY, rather than the Denver GSA meeting, although I was co-author on a poster presentation at the latter and missed seeing some alums. In Lexington, I enjoyed visiting with **Tim Baker** (1977) and Alan Hinks, a former GVSU adjunct.
Although I did a considerable amount writing over the past year, there's little to show for the effort as much of it was chapters for a book manuscript that has yet to find a publisher, and on smaller projects for future publication. I did a beach-of-the-month article with **Peter Wampler** for coastalcare.org, and continue to try to recruit authors for that on-line publication, as well as doing a few peer-reviews of journal articles. See:
http://coastalcare.org/2016/06/changing-beaches-changing-uses-mystery-structures-rosy-mound-park-lake-michigan-u-s-a/
And of course, I'm still enjoying departmental events such as Science Olympiad, Student Scholars Day posters, and visiting speakers. We've been fortunate this past year to have some senior alumni [that's my new category for anyone 20 years out from GVSU; some of you being more senior than others] such as **Adam Wygant** (1993) and **Joe Tondu** (1973) as guest speakers. Thanks to you and others for sharing your experience with the current crop of students [and a good bunch they are too]. And we greatly enjoy seeing alumni at the Geology Picnics; again I note some senior alums, **Bob Sinke** (1973) and **Lee Meadows** (1989). And my apology to **Loyal Suntken** (1975) for not recognizing him for a few moments – sans the General Custer blond locks. Plus, it's always good to hear from you via e-mails as well (e.g., **Mike Gallagher**, **Julie Hewlett**, **Loyal Suntken**, **Anthony Rodriguez**, **Andy McCarthy**, et al.). The most recent senior event was an informal lunch here in Padnos with **Bob** and **Jim Schulz**, **Tim Baker**, **Jeff Spruit**, **Adam Wygant**, **Greg Wilson**, and **Patty Videtich** [see photo elsewhere in Newsletter]. Some of the latter were classmates of **David Guy Waggoner** (1976) who passed away this past August in Texas. Finally I want to thank colleague John Weber for his work in establishing a student chapter of the AAPG. We had an excellent AAPG distinguished lecturer here in November, and it was good to see **John Vrona** there. I know that some of you alums are AAPG members, and I thank all of you who are active in this organization as well as other professional organizations.

Virginia Peterson (petersvi@gvsu.edu) A big change for me is that after 6 years in the role, I decided not to continue as department head and Figen took over starting July 1, 2016. I moved to a smaller office upstairs on the second floor of Padnos, which led to a major purge of a lot of paper and other things I have collected over the years. Last year I was also promoted to Full Professor and approved to take a sabbatical next semester (Winter 2017). To support my proposed sabbatical research, I was funded by a Michigan Space Grant Consortium Seed Grant. The focus of my sabbatical research will build on my new research direction using Electron Backscatter Diffraction (EBSD) analysis to study olivine deformation. I am starting to look at olivine within the Buck Creek dunite body (adjacent to the Chunky Gal Mountain Fault). I began the research this past summer by taking two students, **Sam DeYoung and Dan Tjapkes**, into the field in May to collect samples and then we visited Washington and Lee University where we collected some preliminary EBSD data.

Sam and I presented some of the preliminary results of this work at GSA in Denver and during my sabbatical I plan to do additional field work and sampling and will collect more EBSD data and dive more into approaches to fully use and interpret the data. I am also continuing my thermodynamic modeling work to better understand the metamorphic conditions of the Buck Creek complex and fault and hope to get Dan and future students involved in these projects in the next year.



Sam DeYoung explains the interpretation of olivine EBSD patterns at the GSA meeting in Denver.

Another interesting direction was a collaborative effort with faculty in Chemistry, Physics, and Biomedical Sciences to submit an NSF proposal for a shared analytical instrument. We are seeking to acquire an SEM with a TEM stage as well as EDS and EBSD detectors. Our initial submission was not funded but we will resubmit the proposal this year. It would be exciting to bring this great analytical tool to GVSU.

I continue to be involved as a Councilor for the Council on Undergraduate Research and to serve as a Workshop facilitator for the NAGT-INTEGRATE Travelling workshop program and I have been involved in leading workshops at 3 different universities in the last year and a half.

Last summer our family took an amazing vacation to Iceland, in part to celebrate the end of my tenure as department head and the graduation of my daughter, Casie from DePaul University. We rented a small apartment in Reykjavik and a very small car and did several great day trips in the southwestern part of the country featuring many waterfalls, hot springs, and lots of volcanic rocks. A few highlights: a visit to the island of Heimaey where we walked on Eldfell - the volcano that appeared on the scene in 1973 and almost closed the harbor; an excellent guided walk on Sollhiemajokull Glacier; and a trip to the Snaefellsnes Peninsula, featuring a beautiful rugged coastline and a stratovolcano that was the entry to the center of the earth in Jules Verne's book.

Janet Potgeter (potgetej@gvsu.edu) I was just talking to a colleague who is soon-to-be-retired and we both agree that GVSU is a great place to have to retire from. I am a few years from crossing that bridge, but I'm glad to have the opportunity to contribute to the Geology program until then. We have another great group of promising geology students, some excellent new research spaces, and the faculty and department are thriving as you will read in their statements. Hearing from alumni throughout the year is just the icing on the cake! Please stay in touch and I hope you enjoy this newsletter.

After two relaxing weeks on the gulf in Sarasota in March, I had a couple of wonderful travel adventures to places I had never seen. The first was a mission to move my son, Troy, to Glendale, AZ, to attend Motorcycle Mechanics Institute. Since the only way to get there was driving, the trip turned into a 10-day marathon to see as many national parks as possible on the way. This trip wouldn't have been possible without all the great advice from my Geology family! With my mom as co-navigator in one vehicle, and Troy in his '81 Chevy pickup (no air conditioning) and motorcycle in the truck bed following, we experienced the Badlands in South Dakota; Gardiner, MT, and Yellowstone; Jackson, WY; and Zion, UT. Troy and I took a refreshing dip about a half mile up river from the Glen Canyon Dam near Page, AZ. It was the last week of July and temperatures were sticky 90s in the middle of the night. Glendale welcomed us with two days in the 110s. Of all the bad things that could have happened, nothing disabled us for a moment, except maybe for the swarm of honey bees that Troy drove through on the interstate in MT. Lacking AC, he drove with his windows down for the entire trip. He was fine, only a few bees were lost, and we have volumes of new stories to tell.

Molly continues her education at GV – I love the regular updates on her frog embryos. In addition to planning a May 2017 wedding, she will start preparing whole-heartedly for the MCAT soon. Other travels include the best color tour weekend ever with my mom. There was a lot of deliberate meandering between Traverse City and Petoskey. Honestly, we were never lost looking for wineries, we

just decided to ignore the car's navigation system. Finally, Merle and I took a weekend trip to St. Ignace and Sault Ste. Marie. We took a short cruise from St. Ignace and spent time under the big Mackinac Bridge! What a beautiful country we have!

Peter Riemersma (riemersp@gvsu.edu) **Tiffany Gentner** (2016) presented a poster of our research at the north-central GSA conference at the University of Illinois (see publications) after a mild winter characterized by numerous melt off events and frequent sampling. Field trips to Kentucky with Geo 312, a four day field trip to Missouri for Geo 112, and installing shallow wells in Geo 440 were highlights of the year. This summer I toured the Krukowski quarry in Wisconsin, the source of stone for the spectacular GVSU library, and in support of my seminar student **Isaac Entz's** project on campus building stones. **Kyle Gregory** is working on the fascinating Mackinaw Breccia for his seminar project and **Tim Suess** is continuing and expanding road salt impact hydrological research at the Allendale Middle School. I was event supervisor for "Hydrogeology", coached "Fossils" for the Allendale Middle School Science Olympiad team and helped to sign up **Brittany Ward** (2016)**, Cole Vickers** (2016), **Shelby Baylis and Emily Siriano** as Science Olympiad coaches.
This summer I helped develop and organize the Fifth Annual Allendale Community Field Day, "Things That Cycle". This community "citizen science" event involved over 125 community members working to build kitchen composters, learn about rotting logs and identify exotic scat (from Binder Park Zoo) to highlight just 3 of the 12 activities. I took the family to Hawaii for vacation and have never seen so many extrusive igneous rocks in one place! My son Dakota and I travelled to Wyoming this summer to collect fossil fish and petrified wood plus we travelled to the Wind Rivers for Dakota's first mountain hike.
I was especially inspired by two special lectures at GVSU this year, Darcy Lecturer Ty Ferre' who spoke on "Seeing Things Differently: Rethinking the Relationship Between Data and Models" and Larry Lemke from CMU who spoke on "1,4-Dioxane beneath Ann Arbor, Michigan: How conceptual models shape our response to groundwater contamination in glacial aquifer systems". Both lectures and following discussions made me feel like a hydrogeologist again!

Kevin Thaisen (thaisenk@gvsu.edu) This is my second year here at GVSU as a visiting assistant professor and I'm looking forward to teaching Petrology next semester. Over the summer I spent quite a bit of time in the field. I was looking for ejecta (breccia) in northern Michigan, Wisconsin, and Minnesota associated with the Sudbury impact event, and I also spent some time in West Virginia and North Carolina scouting out stops for the Petrology Field Trip that we will be taking at the end of March. Both trips were extremely successful and I hope the Petrology students are looking forward to the trip as much as I am.
This semester, I am teaching Geology 100 and 111 and working with students on three different projects as part of Seminar; Sudbury impact ejecta, a Michigan kimberlite, and mass extinction caused by impact events. These are all great projects that I expect will provide a sound research foundation for these students and myself moving forward. If you are interested, you can also look for me at "Roger That – A Celebration of Space Exploration in Honor of Roger B. Chafee" this February where I will be presenting on Lunar Geology. Other than that, I've enjoyed myself here, and I am looking forward to the rest of my time at Grand Valley.

Ryan Vannier (vannierr@gvsu.edu) Hello everyone! This has been a great and busy year so far. This is my first year as an Affiliate faculty member for the department and I am really enjoying my introductory geology and oceans classes this fall. My new job role has allowed me to focus on the educational aspects of geology and develop a set of skills related to how my students learn and retain the scientific information they receive in both classroom and online settings.
On the online education front, I completed the faculty development training over the summer for administering online and hybrid courses. As the summer progresses and into the fall I have continued meeting with faculty members from several departments as a part of the GVSU online and hybrid learning community. Also, to further my work in educational technologies, I have finally completed the required courses to achieve the graduate certificate in online and hybrid education, which I should be receiving this semester.
In my efforts to bolster my own skillset in more traditional education, I have completed several courses in educational policy and adult learning. The goal is to obtain an additional graduate degree in higher education in the long run and, thankfully, many of the required courses in these departments

are taught in the evenings or online to accommodate students with an already busy schedule. Now, formally a graduate student again with the College of Education, I have had many positive interactions with faculty here in Allendale as well as the Pew campus. In many ways it is a benefit to be both teaching and learning about higher education simultaneously as it provides a truly immersive experience for me with which becomes a benefit to my students
I am hoping to attend Peter Wampler's trip to Haiti this spring both as an enriching cultural experience but also to give me insight into the study abroad program here at GV. I hope to develop a yearly trip of my own as time progresses to one or more Central American countries through the Padnos International Center.

Patricia Videtich (videticp@gvsu.edu) Hello everyone! Contrary to numerous rumors, I have not retired! I am only halfway there. Like last year, I am not teaching fall semester, but I will be teaching fulltime winter 2017.
I took advantage of my time off from teaching and visited Ireland and Spain. In Ireland I finally saw "Giant's Causeway"! It was way more impressive in person than it is in photographs, so if you haven't seen the "Causeway", make sure it's on your geo bucket list! Also in Ireland, I saw The Cliffs of Moher, which are spectacular cliffs of Carboniferous clastic rocks along the Atlantic Ocean. Also, at the Cliffs are beautiful trace fossils – too bad the ones I saw were all in flagstone. Of course, Ireland is a beautiful country and I particularly enjoyed the spectacular Ring of Kerry and Dingle Peninsula. Oh, and I kissed the Blarney Stone! I had no idea you had to climb up a tower, lie on your back, crane your neck, stick your head out into space, and kiss the rock above your face! Crazy! And, after all that, I haven't noticed feeling any more eloquent as this rambling tome attests. In Spain I had no geo-bucket-list place to see, but it was wonderful learning about its long, complex history and seeing amazing palaces, castles, and cathedrals galore. We also did the "running of the bulls" in Pamplona, but without the bulls! We just traced the route, which was exciting enough for me. In Pamplona we also had one of those fantastic, surprise events that occasionally occur during travel when we found ourselves ringside for a parade, part of one of the many festivals celebrated in Spain. The highlight of the parade for me was that it included about 14 people wearing elaborate costumes and huge, paper mache heads that made them about 8-12 feet tall. It was all unexpected and very exciting.
In September I enjoyed seeing a number of alums at GSA in Denver. As usual, the great work y'all are doing makes your ol' profs proud! I also enjoyed a lunch in Padnos Hall organized by Bill Neal and Bob Schulz (GEO 1975) and attended by some alums who "go back a few years", including me! We traded great memories from years gone by and pledged to meet again next year.
Again this year, I enjoyed chatting with alums who came to a geo picnic at Kevin and Susan's or who stopped by Padnos Hall. I am always sorry when I hear I missed a visit by an alum! If you can, please send me an email ahead of time and I will try to be here if I possibly can. I truly love to visit with y'all, whether you are still in school, working in or out of the field of geology, taking care of kids, retired, whatever! We love to see you, no matter what you are up to, so please stop by. All the best in 2017!

Peter Wampler (wamplerp@gvsu.edu) My year was dominated by two large changes, development and implementation of a new faculty-led study abroad program to Haiti and appointment to a Faculty in Residence position in the Frederick Meijer Honors College.
In May and June 2016, I led the first ever study abroad from GVSU to Haiti. Seven undergraduates, a graduate student, an assistant director, and myself travelled and engaged in "adventure-based" learning for one month in Haiti.

Peter Wampler and Study Abroad Students in Haiti

Students came with a variety of majors and skills to engage in hands-on, experiential, learning about healthcare, environmental degradation, water resources, deforestation, agriculture, and safe-water interventions.

The first week was spent in Haiti “boot camp”, where we spent the week learning, hiking, observing, and acclimatizing to the mountains of Haiti. Students were exposed to the urban setting of Port au Prince and very remote villages high in the mountains above Port au Prince.
During the last three weeks, students experienced the diverse geography and culture of Haiti, traveling from the large capital city of Port-au-Prince to remote towns along the Artibonite River and in the Central Plateau of Haiti. Students engaged in service learning projects related to health, water resources, and education. They utilized their unique skills and experience to teach dance at a Haitian school, observe dental and health practices at a local hospital, teach nursing students about mental health, update data for a local hospital, and collect water samples for bacterial and DNA analysis.
In the fall I accepted the position of Faculty in Residence in the honors college. This 3-year position will allow me to teach honors courses, be more involved in senior projects, and curriculum development. I am hoping to develop a new freshman sequence focused on developing nations and the multifaceted, “wicked” problems, they often face. This would be an interdisciplinary applied science sequence for freshman honors students and would be co-taught with colleagues from other departments and colleges.

John Weber (weberj@gvsu.edu) Greetings all! I hope that this note finds you happy, healthy, and leading productive and fulfilling professional and personal lives! 2016 was another busy year for our family and for me professionally. Teya Li is now a 5th grader at Coopersville Middle School; she is playing the clarinet; writing, drawing a lot & participating in some dramatic productions (outside as well as inside the house). Sarah is very focused on practicing and teaching Iyengar yoga; she is my dedication and self-discipline muse - she wakes nearly every morning at 5:30 am to practice and for some quiet personal time. I am still playing my guitar and enjoying learning and mastering blues standards tunes. Our big male ginger cat Scout, definitely a key part of the family, is now 16 years old. Professionally, I enjoyed attending several international workshops and gave talks/posters at: COCONET (Punta Cana, D.R.), LACSC (San Jose, Costa Rica). Together with research colleagues, we published two papers: "Thermochronology Constraints on Miocene Exhumation in the Central Range Mountains, Trinidad" in the GSA Bulletin and a Springer book chapter entitled "Geomorphology and Quaternary Landscape Evolution of Trinidad and Tobago". We are making nice headway on our 10Be tectonic geomorphology project in the Ste. Francois Mountains core of the Ozarks: **Katy Reminga** presented results at the Denver GSA and Dong-Eun Kim (Ph.D. Candidate, Korea University) visited to see the Ozarks and to help collect more field samples. I taught in Kuala Lumpur (Malaysia) in the spring, and in both Montana and Azerbaijan again in the summer. I continue to serve on the YBRA board as VP - check out our website: www.ybra.org and do international service as a board member for SII: http://www.sii-inc.org/ - you can check out some of this very interesting work at: http://www.sii-inc.org/guppy-trailer-3/. In the department, I advise our relatively new AAPG Student Chapter, arrange and host external speakers, and will help our chapter host an AAPG VG (visiting geologist) and travel to Petrolia, Ontario next spring.

Greg Wilson (wilsong@gvsu.edu) The second phase of the Padnos remodeling continued through the summer and into this Fall. We are gradually moving into our new or remodeled spaces here in Padnos. The spaces completed over the summer include a new Rock Prep room adjacent to the Geology Storage space (formerly the greenhouse), and a new Field Equipment Room located off of the loading dock. The support rooms between 122 and 128 have been converted into a Geology Student Projects room. This room now contains sinks, two hoods, and bench space to support student research in a variety of areas, particularly Geochemistry. This space will support student work in both courses as well as individual research projects. I am looking forward to teaching the Honors Geology course this winter. My son, Cooper, is in a Master’s in Education program at NYU, where he is learning to teach Spanish while in Madrid. Next year he will complete the program by spending a year in New York City learning to teach English as a second language.
Luke is working as an aviation mechanic at the Greenville Airport. He is also working on completing his private pilot’s license. Luke’s son Bode is celebrating his second birthday, and is expected to start skiing soon.

2016 Geology Department Faculty and Staff

Figen Mekik – Professor & Head
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
Bill Neal - Emeritus Professor
Ginny Peterson - Professor
Janet Potgeter - Department Coordinator
Peter Riemersma - Associate Professor
Norm TenBrink - Emeritus Professor
Kevin Thaisen - Visiting Instructor
Ryan Vannier - Affiliate Instructor
Patricia Videtich - Professor
Peter Wampler - Associate Professor
John Weber - Professor
Greg Wilson - Instructor & Lab Coordinator

Currently there are 103 Geology, 12 Geochemistry, and 12 Earth Science majors, and 13 Geology minors. There are 122 students in the Integrated Science program (pre-service teachers served by our faculty).

Geology Club Officers For 2016-17:

Join us on Facebook!
President: Sam DeYoung, deyousam@mail.gvsu.edu
Vice President: Adam Canute
Secretary: Katy Reminga
Treasurer: Matt Collins
Events Coordinator: Nick Brown
Risk Management Officer: Matt Della Mora
Social Media Coordinator: Brooke Yaffa
Sales Representative: Cody Garnsey

GVSU AAPG Student Chapter 2016-2017 Officers:

Katy Reminga - President
Cody Garnsey – Vice President
Andrew Alder - Treasurer
Sam DeYoung - Secretary
Current Membership: ~20
John Weber/Bill Neal - Faculty Advisors

Noteworthy Activities:
Winter, 2016: Business meeting attended by Adam Wygant (1993), GVSU alum, regulator - Michigan DNR Oil & Gas Division
May: Drake Well and Petrolia, PA, trip led by Prof. Robb Gillespe (WMU), ~10 attendees
November: Hosted AAPG DL (distinguished lecturer) Per Pederson's talk on new thinking on mudrocks, ~40 attendees
Upcoming - Spring, 2017: Host AAPG VG (visiting geologist) James Coleman and will travel to Petrolia, Ontario

Degrees were awarded to the following students December 2015 through August 2016.

B.S. in Geology

Nicholas Colaianne
Reece Elling
Tiffany Gentner
Yolanda Hamilton
John Howlett
Alexander Kiewit
Logan Knoper
Evan Lavery
Kayla Lockmiller
Karen Musser
Natalie Renkes
Brian Schrotenboer
Mitchell Slachter
Anthony Cole Vickers
Brittany Ward

B.S. in Earth Science

Michael Hoch
Josipa Ivos
Allison Porter
Christina Sobolak
Claire Sobolak

"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."

2016 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.
Reece Elling
Tiffany Gentner
Kayla Lockmiller
Natalie Renkes
Brian Schrotenboer
Cole Vickers
Brittany Ward

The Norman and Helen Gibson Geology Field Study Scholarship is awarded to support undergraduate geology students in conducting scientific research.
Andrew Alder
Katy Reminga
Tom Valachovics

Geology Student Field Camp Fund provides support to students who will attend field camp.
Mike Bair
John DeYoung
Reece Elling
Tiffany Gentner
John Howlett
Alex Kiewit
Logan Knoper
Evan Lavery
Kayla Lockmiller
Karen Musser
Chelsey Roth
Lydia Spears
Alex VanderVere
Cole Vickers
Brittany Ward

Outstanding Geology Major
Kayla Lockmiller

Outstanding Geology-Chemistry Major
Daniel Tjapkas

Geology Department Scholarships
Ian Beek
Marissa Buehler
Thomas Byars
Adam Canute
Matthew Collins
Samuel DeYoung
Claire Kinne
Eric Schuemann
Julia Smith
Daniel Tjapkas
Jory VanEss

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

Michigan Space Grant Fellowship:
Tom Valachovics (Mentor: Colgan)

Indian Mounds Rock and Mineral Club Scholarship gives support to a research active rising senior.
Tom Valachovics

Michigan Section AIPG Student Scholarship
Cody Garnsey (Mentor: John Weber)

Best Student Poster award at GSA Hydrology
Hayley Schram (Mentor: Peter Wampler)

Student Presentations and Publications

Peterson, V. L., **DeYoung, S.G., Tjapkes, D. J.**, and Rahl, Jeffrey M., 2016, Olivine EBSD and equilibrium assemblage constraints on conditions of formation and emplacement of the Buck Creek Ultramafic complex, North Carolina. Geological Society of America *Abstracts with Programs.* Vol. 48, No. 7 doi: 10.1130/abs/2016AM-281746

Gentner, T., Riemersma, P., 2016, "Monitoring of Chemical De-Icer Impact on Surface and Groundwater During Snow Melt Off Events at Allendale Middle School, Michigan" North Central Geological Society of America Conference, Champaign, Illinois, abstract.

Knoper, L., Kneeshaw, T. and Koches, J., 2016, A Preliminary Assessment of Implementing Stream Daylighting Strategies on Little Black Creek in Muskegon County, MI. North-Central Section Geological Society of America Annual Meeting, Champaign, Illinois, abstract.

Lockmiller, K.A., Kneeshaw, T.A., **Woldyk, N.**, and Qi, M., 2016, Presence and Distribution of Polycyclic Aromatic Hydrocarbons in Sediment Contaminated with Tar Sands Crude Oil. North-Central Section Geological Society of America Annual Meeting, Champaign, Illinois, abstract.

Ramsey, B., and Mattox, S., 2016, Small Eruptions with Big Impacts: An Eyjafjallajokull-like eruption in U.S.?, Michigan Science Teachers Association 63d Annual Conference Program, p.7, abstract.

Reminga, K.N., Weber, J.C., Seong, Y.B., 2016. A Preliminary *In-situ* and Basin-wide ^{10}Be TCN Study of the Ste. Francois and Ozark Mountains Landscape. Geological Society of America *Abstracts with Programs.* Vol. 48, No. 7 doi: 10.1130/abs/2016AM-287264

Schram, H., Wampler, P., 2016. Evaluation of Hand-Dug Wells in Rural Haiti., Geological Society of America Abstracts with Programs. Vol. 48, No. 7 doi: 10.1130/abs/2016AM-279615

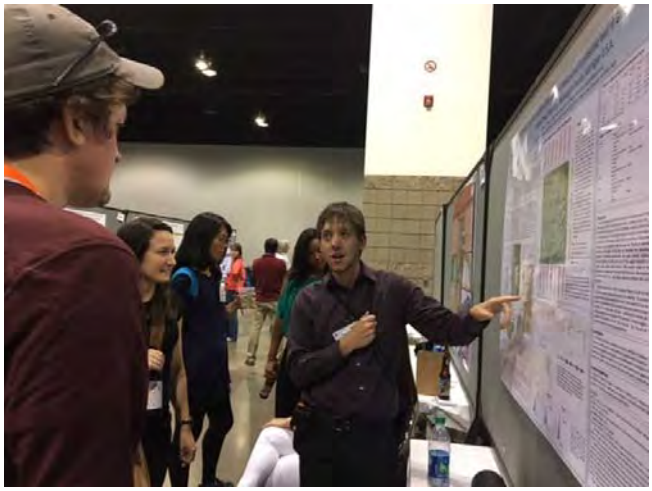
Mattox, S.R., **Siriano, E.**, 2016. Rates of Earth Processes: Comet Speed to Crawling Plates. GVSU Regional Math and Science Fall Science Update, Allendale, Michigan.

Sobolak, Christina, and Mattox, S., 2016, Update on Credit-by-Exam at Michigan High Schools for University Physical Geology, Michigan Science Teachers Association 63d Annual Conference Program, p. 33, abstract.

Sobolak, Claire, 2016, An Integrated to Teaching the Geology of the Cascade Volcanoes, Michigan Science Teachers Association 63d Annual Conference Program, p. 19, abstract.

Sparks, A.R., Callahan, C.N., 2016. Measure for Measure: Social Comparison in Introductory and Advance Geoscience Courses. Geological Society of America *Abstracts with Programs.* Vol. 48, No. 7 doi: 10.1130/abs/2016AM-287577

Colgan, P.M., Amidon, W.H., **Thurkettle, S.A.** (accepted pending final revisions). Inland dunes on the abandoned bed of Glacial Lake Chicago in western Lower Michigan, U.S.A.: Implications for Aeolian activity in the western Great Lakes region of North America during the Pleistocene-Holocene transition, *Quaternary Research*.

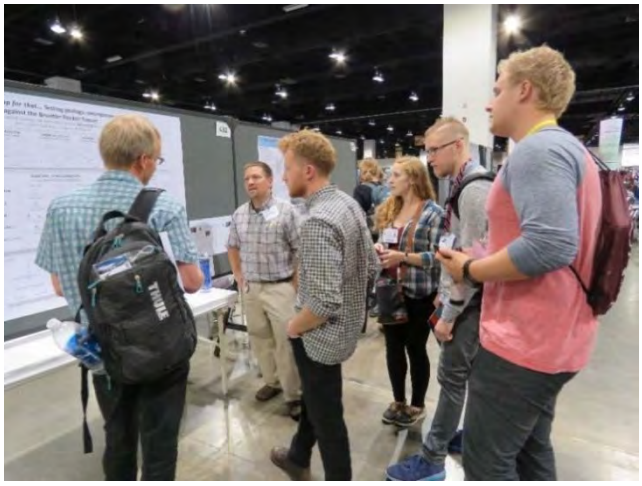


Tom Valachovics explains his research on glacial lake sediments to Caitlin Leslie (GEO, 2013) at the GSA meeting in Denver

Valachovics, T.R., Colgan, P.M., 2016. Sediments of a Pitted Lacustrine Plain and their Implications for a Paleolake Level of Glacial Lake Chicago, Cedar Creek Township, Muskegon County, Michigan. Geological Society of America *Abstracts with Programs.* Vol. 48, No. 7 doi: 10.1130/abs/2016AM-281148

VanGoor, S., 2016, An Integrated Approach to Teaching Metamorphic Rocks of Michigan, Michigan Science Teachers Association 63d Annual Conference Program, p. 13.

Alumni at GSA Denver 2016



Chris Vanderlip (GEO, 2015) Now at University of Memphis, Chris explains his research to onlookers, including GV alumni **Evan Lavery** (GEO, 2016), **Ashley Brady** (GEO, 2015), now studying at Georgia Tech, and current student **Sam DeYoung**.

Alumni and Guests Speak for Earth Science Week, October 10 – 14, 2016

With great effort, Peter Riemersma continues our tradition to bring excellent guest lecturers to GVSU in celebration of Earth Science Week. This year's invited speakers again included our own alumni and outside speakers:

Alexander Villhauer (GEO, 2010), Arcadis, Inc.
Next Generation Site Characterization for Environmental Investigations.

Larry Lemke, Ph.D. Chair, Department of Earth and Atmospheric Sciences, Central Michigan University
What's All the Fracas about Fracking?: Probing the controversy over hydraulic fracturing.
And
1,4-Dioxane beneath Ann Arbor, Michigan: How conceptual models shape our response to groundwater contamination in glacial aquifer systems.

R. Joe Tondu (GEO, 1973), President, Tondu Corporation, Houston, TX
My 43 year Career with a GVSU Earth Science Degree.

David Krantz,Ph.D., Department of Environmental Sciences, Univ. Toledo
The Evolution of Sand Point, Pictured Rocks National Seashore, Michigan.

Amber Kumpf, Department of Math and Physical Science, Muskegon Community College
Exploring an Undersea Supervolcano.

Other Guest Lecturers in 2016

William B. Harrison, III, Professor Emeritus and Director Michigan Geological Repository for Research and Education Department of Geosciences and the Michigan Geological Survey Western Michigan University
Subsurface Geology of Michigan's Lower Peninsula: What is below the glacial drift?

Rebecca Flowers, Ph.D., MSA Distinguished Lecturer
Dating an Iconic Landscape: How old is the Grand Canyon?

Ty Ferré, Ph.D., National Groundwater Association Darcy Lecturer
Seeing Things Differently: Rethinking the relationship between data and models.

Ronald T. Green, Ph.D. (GEO, 1978)
Salt Water Disposal (SWD) Wells: Advances in Evaluating their Environmental Impact.

Ingrid Hendy, Ph.D., University of Michigan
A Megaflood Catastrophe: A glacial history of Missoula floods, tidewater glaciers, and the Pacific Ocean.

Amy VanDyke, Ph.D., J.D. Geochemistry and Law Commissioner at the Michigan Supreme Court
The Geometry of Geology, Law and Politics.

George K. Heartwell, former Mayor of Grand Rapids, MI, GVSU Community Sustainability Coordinator
Local to Global: The All-In Effort to Save the Planet.

Per Kent Pedersen, AAPG Distinguished Lecturer
Petroleum Geology: Sedimentary Facies, Mudstone Petroleum Source Rocks, and Tight Reservoirs.

Alumni Updates

Bob Sinke (1973) is President of the West Michigan Hosta Society. Bob attends the Geology Picnics and usually brings some fossils to stump the paleontologists.

R. Joe Tondu (GEO, 1973) I am still active in business and have no plans to retire. I spend a lot of time in Michigan since I have considerable investments in the state and I am more active in state politics than I wish I was, but I am afraid that politics drives much of my world today.
My core business is still energy, although I am actively involved in all kinds of ventures. You would be amazed at what my geology education at GVSC prepared me for over the last 43 years - medtech, real estate, industrial development, oil and gas,

independent electricity generating power plants, renewable energy, and venture capital. My latest activities involve converting our coal fueled power plant to a natural gas fueled facility, building a small scale steel mill, and studying macro-economics to support my investment activities. I still think of it as GVSC not GVSU. That tells you how old I am.

John Tweddale (GEO, 1985) I began a new job with TRC Environmental in Madison, WI, on September 30 (2015 - after 20 years!), saying farewell to my kind colleagues at BT Squared/SCS Engineers was difficult. TRC is a nationwide consulting firm that is highly-regarded in site remediation and regulatory compliance. My goals are to increase TRC's name recognition in the Upper Midwest and help clients implement environmental projects. I am honored to work with yet another intelligent and creative group of scientists and engineers. The hours are flexible and I sometimes work from home, leaving more time for family, friends, and fun.

Jenina, Luke and John Tweddale

My main passion is still fly fishing. In addition to "standard" trout-focused trips to the Driftless Area (SW WI), Bois Brule River (NW WI), and Au Sable River (MI Lower Peninsula), I explored NE Utah and SW Wyoming during late June 2015. In September, my equally-fanatic friend Dave and I discovered the fun of smallmouth bass fishing on the Menominee River (NE WI). The Pacific NW, Yellowstone, and New Zealand are still on my bucket list – creaky knees notwithstanding.

Jenina's days are never quite the same, but often include yoga and long chats with friends. She works part time at trade shows for CraftOptics, makers of specialized eyewear with flip-up, high-resolution lighted telescopes used by serious hobbyists, crafters, and fly tiers. She's traveled to California, Florida, and Illinois so far, with Colorado coming up. For those of you familiar with "Ted Talks" on YouTube or Netflix, Jenina served on the organizing committee for our local TedX Madison event at Edgewood College, helping speakers present some unique and inspiring ideas. Jenina remains active in our local homeschooling group, and will be speaking at the statewide conference again this year. For 2016, she and a friend are planning a women's creative retreat focused on indigo dying.

Luke's primary goal at age 22 is to qualify for the 2018 U.S. Winter Olympic Team in long-track speed skating. He received tremendous support this past year from Coaches Steve Penland and Sue Ellis, trainer Chad Yonkus, friends, family, fellow athletes, and club members. Luke won overall gold in the 1000m distance for the 2015-2016 American Cup competitions, and placed well in the 500m and 1500m events. Following the Am Cup Finals in Salt Lake City (SLC), he is now in the Top 10 for U.S. men (by time) in the 500m and 1000m distances. After several years of skating primarily at the Pettit Center in Milwaukee, Luke will be moving to SLC in May to train full time at the Utah Olympic Oval.

His coaches are confident that Luke is young and strong enough to continue making improvements to his technique and times. Like many empty-nesters before us, Jenina and I have mixed emotions about Luke's move, however long it may be! Luke works part-time for 1-800-GOT-JUNK in Madison, and hopes to continue working for their SLC franchise. He's planning to complete the last three credits for an Associate's Degree online via Madison College, which should allow him to transfer to a University of Wisconsin campus in the future.

Luke is dating a very nice girl from Edgerton who attends UW LaCrosse and is trying to transfer to UW Madison. During 2015, Luke was fortunate to visit Puerto Rico with Grandma and Grandpa Mella, and snowboard in Colorado with friend Justin.

TIm Surine (GEO, 1995) and Stephanie (Tassier) Surine (GEO, 1996) It's fun to hear about how things are going and what the department is doing. I'm always amazed at the rate at which Grand Valley continues to grow. Education has always been important to both of us at all levels, and we are happy to give back. I received several scholarships that made huge difference, and we hope we can make some impact on the current students, even if

our contribution is relatively small. Hopefully, someday we'll be able to give more.
The boys turned 4 this year and are loving preschool. They are very active and challenging (I can hardly believe some of the questions they ask- thank goodness for google), but I wouldn't have it any other way.
Everything else is going well. Tim is still teaching and is creating a new class for freshman focused on Earth and space science. Iowa is changing the core curriculum to include geology and Tim has the endorsement so his school moved on it early. I'm still at the Iowa Geological Survey. We've undergone some major changes in the last two years, most notably becoming part of the University of Iowa, and the long-term outlook is much better than it has been in a long time. Due to staff changes, I'm now in charge of the STATEMAP program, but my basic job duties (mainly surficial mapping) have stayed the same.

Eric Hanis (ES, 2002) Eric Hanis has launched his own business, Hanis Consulting, Inc., providing environmental services to the greater Chicago area.

Eric Hojnacki (GEO, 2008) My title at Consumers Energy is Electrical Systems Owner. The highest level description for the job is owner/responsible for distribution system reliability. So I work on distribution design, system planning and system performance solutions and am responsible for customer advocacy. So it means I do what I can to make the system the best I can for the customer and their needs. I also work on damage assessment during storms. So I look at a lot of maps or the electrical distribution circuits and maintain the integrity of those maps…(which are not that good currently, unbelievably).
My skills as a geologist come into play when we are locating things in the field and observing hazards and potential problems. I look at maps all day, but they are not geology maps. Definitely not as exciting, but a good steady job right now. I'm excited to be living only minutes from Lake Michigan and able to get out at 3:30 if I want to enjoy any wind or waves☺

Anthony Rodriguez (GEO, 2009) Now with American Resource Development, Austin, TX

Heather (Brusnahan) Skidmore (GEO, 2009) I'm living in Maquoketa, Iowa, which is home of the Maquoketa Limestone, that borders the Mississippi River, includes the southern boundary of the Driftless zone and I'm pretty sure the railroad is lined with Baraboo Quartzite. In other words, it's beautiful here. When I'm not exploring caves and hiking trails, I am employed by Jackson County as a GIS Coordinator. Along with maintaining the county's various mapping needs, I've been involved in a number of education outreach programs. I'm currently working with local educators to integrate GIS into the classroom and am developing a summer mapping program through the local community college. I've recently been in touch with a geologist at the state survey, Stephanie Tassier-Surine a fellow Grand Valley Geology Department graduate (GEO 1996), about geologic mapping within Jackson County. Those of you that remember Jasmyn, she's now a sophomore in High School, in all advanced courses, 2 years ahead in math and enjoys art and playing rugby. Her high school rugby team is setting state records and she's one of the starters. We've also added a couple more to our tribe: Sage (5) loves gymnastics and art, and Winston (2) loves all things big and loud, and his sisters. I hope everyone is well and living a life they love. Namaste.

Adam Davis (GEO, 2012) Adam is working on his Ph.D. at Baylor University and recently had his first paper for his dissertation published in Palaeogoegraphy, Palaeoclimatology, Palaeoecology. He also gave a presentation at GSA in Denver: Sedimentologic and Stratigraphic Reconstruction of Lower Paleocene Environments in the San Juan Basin, New Mexico.

Scott "Louie" Simonson (GEO, 2012) Louie attended the European Geosciences Union conference in Vienna, and spied a face with a familiar hairdo, belonging to Esther Posner (GEO, 2010)! [See "The Global Laker Effect" later in this newsletter].
I am still in China. I am finishing up my Master's thesis right now and if all goes well I will graduate this summer. I intend to stay here for at least another year and teach, and just take a break. But you know how inspirational conferences can be. There was a Ph.D. sized hole that I wasn't expecting to fill, but at this moment I am really considering it. Much to think about. First, a year to be a working stiff.

Jody Wycech (CHM, GEO Minor, 2012) Jody received the Schlanger Fellowship from the International Ocean Discovery Program. Congratulations Jody! See the story: http://www.geoscience.wisc.edu/enewsletter/2016Q1/enews2016.html

Caitlin Leslie (GEO, 2013) Caitlin is working on her Ph.D. at Baylor. Caitlin presented at GSA in September: Timing, Drivers, and Marine Terrestrial Ecosystem Responses to the Cretaceous-Paleogene Extinction Event.

Kristina Haataja (2014) Kristina married Dennis Rice in the summer of 2016. Congratulations you two!

Kenton Shaw (GEO, 2014) Kenton completed his M.S. at Baylor and is currently working Devon Energy in Oklahoma City, OK.

Ashley Brady (GEO, 2015) Ashley is studying at Georgia Tech. Ashley gave a talk at GSA this year: Chromium Incorporation into Calcium Carbonate Minerals and Associated Isotopic Fractionation: Implications for the CR Isotope Paleoproxy. "I'm learning to slowly love chromium, but the opportunities here are endless."

Kayla Deciechi (GEO, 2015) Kayla is working on her Masters at Michigan State University Geoscience Department.

Chris Vanderlip (GEO, 2015) Chris is going to graduate school at the University of Memphis. He was the coauthor on three presentations at GSA in Denver including one entitled, THERE'S AN APP FOR THAT... TESTING GEOLOGIC SMARTPHONE APPS AGAINST THE BRUNTON POCKET TRANSIT, which received a lot of interest. The other two presentations were on structural geology in Tipton County, Tennessee.

Logan Knoper (GEO, 2016) Logan is working for SampleServe.com, based in Traverse City, MI.

Kayla Lockmiller (GEO, 2016) Kayla is going to grad school at St. Louis University. "My project will be using boron, strontium, and sulfate isotopes . . . as tracers of municipal/ waste waters. I'll be trying to figure out how much of different water sources (waste water, municipal water, natural waters) are making it into streams and rivers due to leaky pipes, CSOs, or run off. I think this project is really cool because it's actually applicable to an issue that St. Louis is having to deal with! Understanding where the wastewater is coming from and how much of it is affecting natural waters will hopefully help the city fix their infrastructure."

What are you up to these days? New job? New school? New city and state? We love to hear from you! Please stay in touch.

You can send information about yourself in one of the following three ways:

1. Email to Janet Potgeter at: **geodept@gvsu.edu**

2. Mail it to us @ Geology Department, Grand Valley State University, 118 Padnos Hall, Allendale, MI 49401

3. We have an online form for direct electronic submission at: **http://www.gvsu.edu/geology/**
Name: (If your name has changed since you were a student here, let us know your previous name also)
Graduation year: _____
Employment/Life status or changes:
Contact information* (address, email, phone)
Note that we will not post contact information on the web site apart from your city of residence – please let us know if you do not want us to share your contact information with alumni or friends who request it.

Twelfth Annual Geology

Chili Contest 2016 Summary

Thanks to all who attended and especially to those who contributed a chili, side dish or dessert. I also appreciate all the judges who helped make the event a success. As always, thanks to Kevin Cole for the fantastic trophies!
I was very pleased by the enthusiastic student participation with eight chilies (out of 16)! We also had President Haas stop by! See ***three*** of the award

winning recipes below. Start planning to submit a chili, dessert or side dish for next year's 13th Contest. Not that we needed reminding but we proved once again that Geology Rules!
Until Next Year!
Peter Riemersma
Chili Coordinator

The Numbers

16 Chilies submitted (8 student chilies)
5 desserts
4 side dishes
A record **90** Participants (name tag count)
~10 Judges

2016 Award Winners * Recipes below

Best Overall Chili*: Janet Potgeter
Best Student Chili*: Andrew Alder
Silver Certificate Student Chili: Waverly Ferguson
Most Popular Chili: Connor Cain
Best Vegetarian Chili: Brittany Ward and Cole Vickers
Hottest Chili: Kevin Cole
Most Geological Chili: Kevin Thaisen
Most Geological Dessert*: Kathy Agee
Best Side Dish: Ginny Peterson

Andrew Alder's Best Student Chili:
Sweet and Spicy Pineapple Chili
Ingredients
Pineapple ½
Ground Beef 2 lbs
Green Bell Peppers 2
Jalapenos 3
Onion (Large) 2
Garlic Clove 4
Diced Tomato 14 oz
Tomato Paste 12 oz
Brown Sugar ¼ cup
Canola Oil 2 oz
Strong Coffee 1 cup
Dark Beer (Dirty Bastard) 12 oz
Beef Broth 3 cups
Coco Powder 1 tbsp
Cinnamon Dash
Cayenne Pepper to taste
Kosher Salt to Taste
Black Cracked Pepper to taste
Cumin to taste
Red Pepper Flake to taste

Mince garlic. Cut onion, jalapenos, pineapple, and bell peppers into a small dice. Mix beef broth, tomato paste, coffee, beer, coco powder, brown sugar, and spices in large bowl to make a slurry. Warm oil in large soup pot on medium high heat. Then sauté onion and garlic in oil. Once onions become somewhat transparent, add the ground beef and cook until completely brown. Strain off all the oil from the pan. Reduce to medium heat. Add diced tomatoes, jalapenos, bell peppers, and pineapple to the pot. Let cook for 10 min. Wisk slurry, to disturb the sediment at the bottom of the bowl, and add to pot. Let chili cook for 1 ½ hours stirring occasionally.

Janet Potgeter's Best Overall Chili
Best critique: "It tastes like my mom's chili."
3 pounds of ground beef
1 lb ground turkey
1 lb chorizo sausage, casings removed
When meat is half done, add 1 – 2 cups chopped onion and bell peppers
Add chopped jalapeno, if you like.
Season with salt and pepper.
Brown meat and drain fat.
Add:
1 - 28oz can stewed tomatoes, crushed
1 or 2 - 15oz cans of diced tomatoes with green chilies and lime
1 - 28oz can tomato sauce
2 – 3 bay leaves (remove before serving)
Lots of beans:
1 large can seasoned chili beans (do not rinse)
Several cans of kidney, black and/or pinto beans rinsed, or whatever you like.
I know I'm done adding tomatoes and beans when the consistency is good. Taste it and add seasonings as you like. ¼ C molasses will add a little sweetness to this big batch.

Kathy Agee's Most Geological Dessert
Cookies 'n Cream Fudge Rocks
Recipe adapted from Eagle Brand Creamy White Fudge
Ingredients:
1 1/2 pounds (24 ounces) white confectioner's coating or premium white chocolate
1 can (14 ounces) sweetened condensed milk
pinch of salt
1/4-2/3 cup finely crushed Oreo Cookie crumbs
1/2 teaspoon cocoa powder, optional

Heat white confectionery coating, sweetened condensed milk, and salt in a medium saucepan over **low** heat. Use a heatproof spatula or a wooden spoon to stir frequently until melted and smooth. Remove from heat. Stir in 1/4 cup cookie crumbs. Stir just to combine.

If you want your stones to have different colors, then divide the mixture among three bowls. Leave one bowl alone. Add another 1/4 cups Oreo cookie crumbs to one of the bowls. Add the cocoa powder to another bowl.

Press a piece of plastic wrap down onto the fudge in each bowl and allow it to sit at room temperature for about 30-45 minutes, until it is thick and no longer sticky (and can hold a ball shape).

Pinch off pieces of fudge and shape into different sized rocks. Cool in refrigerator. This will keep at room temperature for several days. Keep stored in an airtight container if you'd like to keep it longer.

Field Tripping

How about a trip down Memory Lane? Real field study is an important component in geoscience education. You probably remember one of your first geology field trips to Michigan Natural Storage, the gypsum mine under southwest Grand Rapids. Do you still have the coprolite you picked up there? The mine trip was a standard for students in all of our 100 level courses. Sadly, the mine was recently closed to all visitors due to heavy traffic and liability issues. Our students are still having great field experiences however. Local field trip destinations include the Kent County Recycling and Education Center, the Covanta Energy from Waste Facility, the National Weather Service Office and West Michigan parks and beaches.

Here are a few of the Fall 2016 field trip destinations for Geology majors:

Course	Destination
GEO 103 Oceans, and **GEO 105** Living with the Great Lakes	D. J. Angus research vessel cruise out of Grand Haven, MI
GEO 112 Earth History	Grand Ledge, MI and Missouri
GEO 211 Mineralogy	Bancroft, Ontario
GEO 201 The Geosphere for Teachers	Marquette, MI
GEO 311 Structural Geology	Grand Ledge, MI and Baraboo, WI
GEO 315 Geological Field Methods	Grand Ledge, MI and Missouri

We'd love to hear your field trip stories and recollections. Typically, what happened on the field trip, stays on the field trip, but the statute of limitations is probably expired anyway.

Our students pay an additional field trip fee with tuition to offset the cost of these trips. You can also support field education by making a contribution to the Richard H. Lefebvre Field Education Fund.

With support from an NSF InTeGrate grant students from Muskegon and Grand Rapids Community Colleges now share two field trips with GVSU students. In the fall we go to the Marquette geosyncline (see photo above). In the spring we traverse Paleozoic rocks of the Illinois Basin.

Views from the Mineralogy trip to Bancroft, ON, September 2016

A well-equipped student tests for radio-activity.

Taking notes at York River Skarn.

Nick Brown identifies a fold in metamorphic rock in Bancroft.

Mineralogy Class of 2016

GEO Faculty Putting GVSU on the Global Map!

Truth be told, if we published all of our faculty publications, accomplishments, recognitions and awards, this newsletter would have a "B" section. In addition to what is already mentioned, here is just a smattering of the special recognition they received in 2016:

Caitlin Callahan and co-authors have been awarded the distinction of **Outstanding Paper in the Journal of Geoscience Education** for their paper titled "*Using the Lens of Social Capital to Understand Diversity in the Earth System Sciences Workforce*".

Pat Colgan and student co-author, **Sara Thurkettle**, wrote a paper that was recently accepted:
Colgan, P.M., Amidon, W.H., Thurkettle, S.A. Inland dunes on the abandoned bed of Glacial Lake Chicago in western Lower Michigan, U.S.A.: Implications for aeolian activity in the western Great Lakes region of North America during the Pleistocene-Holocene transition, *Quaternary Research*.

Tara Kneeshaw was identified by the Student Senate as an "incredibly impactful faculty member" and the Admissions Advisory Board Committee (new University Committee) will be bringing recruits and their families to sit in on her lectures.

Ginny Peterson is Chair-elect of the Geosciences Division of the Council on Undergraduate Research. Her term officially begins in July.

Patty Videtich received the University Outstanding Academic Advising Award.

John Weber published new article in a new book (accepted – in press) – October 26, 2016:
Arkle, J.C., Owen, L.A., and **Weber, J.C.,** Geomorphology and Quaternary Landscape Evolution of Trinidad and Tobago, *in* Allen, C.D., *eds.,* Landscapes and Landforms of the Lesser Antilles, volume, Geomorphological Landscapes of the World, Springer Publications.

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

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 our 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=giveonline1.

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.

Funds that support the department mission:

Richard H. Lefebvre Geology Field Education Fund - This new scholarship will help to support department field trips. The cost of field trips has gone up significantly without an increase in our budget and we have had to resort to passing along those expenses to students. This fund will help us maintain a strong field-based focus to education in the department.

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

Paul & Florence Miller Mineral Collection - This fund was started by Paul Miller, who made a significant donation of minerals to the department. The fund supports additions to the collection as well as displays.

Thank You 2015 Donors! *Correction*

December 2014 – November 2015

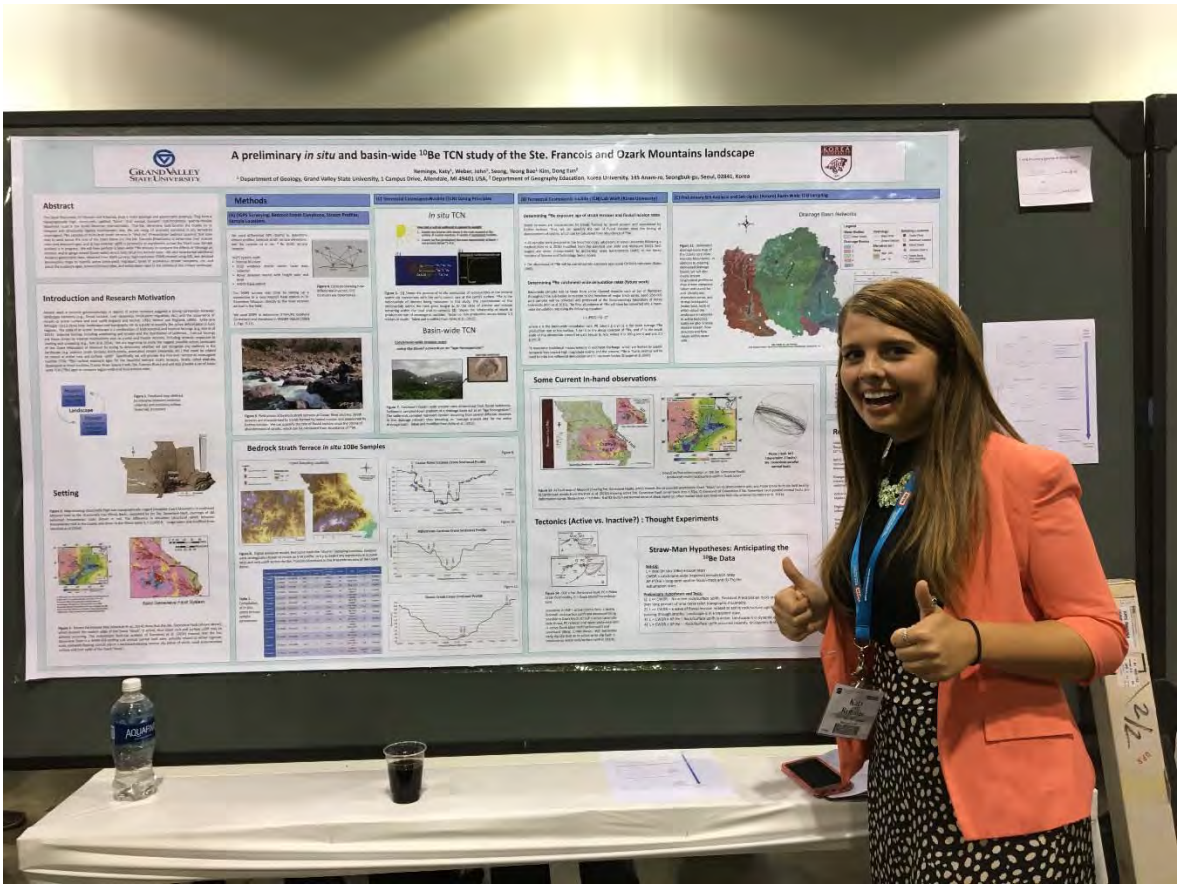
With deepest apologies, here are the folks who were left off last year's recognition of donors. It seems the information was cut off in the "Ts" during editing.

Tulip City Gem and Mineral Club
Dr. Patricia Videtich
Dr. James C. Walters
Mrs. Ann Marie M. Willette

Thank You 2016 Donors!

December 2015 – October 2016

Larry M. and Mary E. Austin
Robert M. Bodziak, with a matching gift from Pioneer Natural Resources
Caryl L. Brintnall
Caitlin N. Callahan
Julie A. Carbine
Kevin C. Cole and Susan Jansen
Beverly J. Gibson
Thomas M. Haessly
Patricia Hossink
Monica Lack
Stephen R. and Tari Mattox
William J. and Mary E. Neal
Carolyn G. Shapiro-Shapin
Chester A. Smith, with a matching gift from the GE Foundation
Richard J. Stolarz
Timothy and Stephanie A. (Tassier) Surine
Edward L. and Rose Tremba
Tulip City Gem and Mineral Club
John P. Vrona
James C. Walters
Gregory C. Wilson



Katy Reminga promotes her poster at GSA in Denver: A Preliminary *In-situ* and Basin-wide ^{10}Be TCN Study of the Ste. Francois and Ozark Mountains Landscape.

Apple Cider Time!

On November 13, Kevin Cole and Sue Jansen hosted the cider press for GEO majors.
A ton of apples produced 100 or more gallons of cider.
Cider pressing is turning into another great GV Geology tradition!

The Global Laker Effect: When Geo-Paths Cross

Almost everyone has a "small world" story, and a recent chance meeting of two GVSU alums in widely-separated international graduate programs is a classic example. Scott "Louie" Simonson was a double major at GVSU and graduated in 2012 with a B.S. in Geology, and a B.A. in History. He entered the Master's program in Geography and Planning at Sun Yat-sen University, Guangzhou, Guangdong, China, the same year. This past April, Louie was attending the European Geosciences Union in Vienna, Austria as the lead author of a paper, presenting some of his thesis results.* While attending a poster session days later, he came across a poster presentation by Esther Posner (GEO, 2010). Louie reported "We never knew each other but I recognized her hair and we bonded over our shared history :)"

Esther received her Master's degree in Geology at the University of Arizona in 2012, and entered the Ph.D. program at the Bayerisches Geoinstitut, University of Bayreuth, Bayreuth, Germany, in 2013. Although she has coauthored several journal articles on experimental geochemistry, her presentation at the EGU meeting was on teaching science through performance art.** She has engaged in the latter since her days at Grand Valley, and faculty recall her geo-seminar poetry! Esther and Louie traded some stories on their foreign education experiences, and their geo-paths, and then once again diverged.

*"Use of Structure-From-Motion Photogrammetry Techniques to model Danxia red bed landform slope stability by discrete element modeling – case study at Mt. Langshan, Hunan Province, China"

**"Science on Stage: Engaging and teaching scientific content through performance art"

Bookends

October 26th gathering of a few senior alumni in Padnos Hall for lunch, and time to reminisce and catch-up. From left to right: Jim Schulz (1977), Adam Wygant (1993), Tim Baker (1977), Greg Wilson (1983), Patty Videtich (1976), William 'Strata' Neal (Pleistocene), Jeff Spruit (1975), and Bob Schulz (1975).

Bill N: Schulz brothers were the bookends.

Bob Schulz responded: Bookends are made to hold up loosely organized items that would fall over without strong support!