

Evolution of the Earth class and other geology majors on spring break in Arches and Canyonlands National Parks 2018. Led by professor Rory McFadden.



GUSTAVUS ADOLPHUS COLLEGE

GEOLOGY DEPARTMENT

Newsletter | Fall 2018

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We'll happily include alumni news in our blog. Send updates to Laura Triplett at ltriplett@gustavus.edu

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GEOLOGY

GUSTAVUS ADOLPHUS COLLEGE

Greetings!

JOE CARLSON, Gustavus Geology Professor

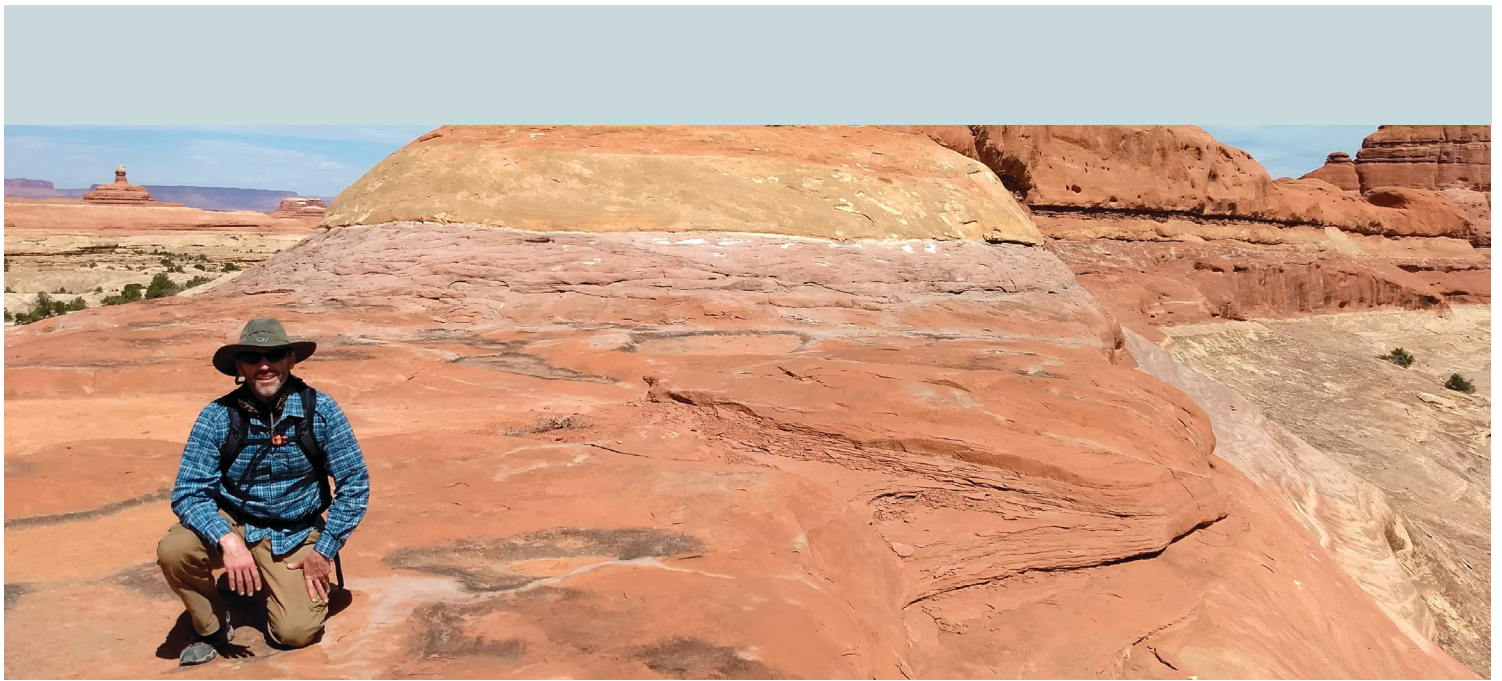
2017 marked the end of an era—the Welshian Era, to be specific—as Jim Welsh retired to take up a life of hiking, biking, skiing, and documenting our ever-growing rock and mineral collections.

Many friends, alumni, and current students helped us celebrate his career during 2017; see the Jim Welsh highlight box inside this newsletter for more on Jim's career and incomparable contributions to Gustavus geology.

We've begun a gradual transition into a new era, marked by the hiring of a new tenure-track geologist, Rory McFadden. Rory's work spans metamorphic petrology and tectonics, but his heart is centered in structural geology. Rory comes to us from the Science Education Resource Center at Carleton College, and before that he spent five years as a tenure-track professor at Salem State University in Massachusetts. We're fortunate to have such an experienced teacher joining our ranks; you can hear more from Rory inside.

The new era will also be defined by a new Nobel Hall of Science! Yes, construction has begun, and we are thrilled beyond words to announce that we will be moving into our new and cutting-edge laboratories, classrooms, expanded and relocated museum, and interdisciplinary workspaces in just under two years. Our geology faculty have spent many hundreds of hours designing the new department to meet our goals for integrated education and research, and to maximize opportunities for interdisciplinary learning... you'll have to come see what we dreamt up!

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Please welcome Rory McFadden to the department!

WE DIDN'T FORGET!

You may have noticed that we've sort of "lapped" ourselves on this newsletter. We got so behind that we're now caught up again. Now that we're at "full strength", we'll try to get into a regular cycle of beginning the "newsletter nag" in January; sending out a desperate final plea in May; and compiling the newsletter over the summer to greet your (e-) mailbox before the leaves fall off the trees.

SUPPORT GUSTAVUS GEOLOGY

If you'd like to make a gift, visit gustavus.edu/give. Fill out the form with your desired gift amount. If you'd like to designate all or part of your gift to the geology department, write "Geology Fund" in the comments section, with details as needed. These gifts support our Geology students.

The department has felt additionally upended in the past two years because Julie has been serving as a Dean in the Provost's Office. While she has also heroically maintained some teaching duties and has always been generous with her time and energy for departmental decisions and events, we have missed her full-time presence. Thankfully, we've had an additionally heroic and generous visiting faculty member, Andrew Haveles, to hold us together! Andrew has been teaching most of Julie's classes, in addition to the "Interpreting the Landscape" courses for the Environmental Studies Program, and helping shepherd and mentor student research projects. Andrew's incredible scientific and teaching range—from historical and paleo, to ecology and geochemistry—and his endlessly positive attitude have eased what would otherwise have been a difficult couple of years.

In 2016 and 2017 we graduated record numbers of majors, with many going on to prestigious graduate schools across the country and in Europe. We hope to hear from them and all the rest of our friends on a regular basis! Look for Joe's email shout-outs for updates, and also feel free to email our professors anytime you have some news, insights, or life changes to share.



Julie in Death Valley, January 2017



Darby Island Research Station, June 2017.

Faculty News

Julie Bartley

Greetings once again! I've just completed my second (and final) year as the Associate Provost and Dean of Sciences & Education. The good news is that I was able to teach a class last fall—it was nice to be back in the classroom this semester. The past year has been full, as I worked in the Provost's Office full-time, but carved out some space to continue with research projects. I have now returned to the faculty and am back to my usual courses.

In the fall of 2016, students (now alumni) Lindsey Reiners '17 and Tanner Eischen '17 presented work on ancient microbialites at the GSA annual meeting. Ruby Schaufler '17 also presented at GSA her work on identification of biosignatures on Mars. This work was the follow-on to the fieldwork she did in spring 2017 with the Geo-Heuristic Operations Strategy Team (GHOST), a project that aims to refine strategies for deploying a rover to detect evidence of past life on Mars. This past year has seen a continuation of both these projects, with Sarah Bruihler '18 continuing work on both ancient and modern microbialites, and Madison Adams '19 working on the GHOST project.

In January 2017, I did fieldwork with three students to examine the stromatolites of the Death Valley Region. We visited Proterozoic and Cenozoic microbialite localities. Student Sarah Bruihler '18 organized, sectioned, and

analyzed most of the specimens we collected and presented preliminary results over the summer. As she dug into this project, she realized that having some modern forms for comparison would be exceptionally helpful. A phone call to Pamela Reid (University of Miami) resulted in an invitation to view stromatolites in the wilds of the Bahamas, so Sarah and I spent a week at the Darby Island Research Station during the summer of 2017, swimming with the stromatolites (and the barracudas!).

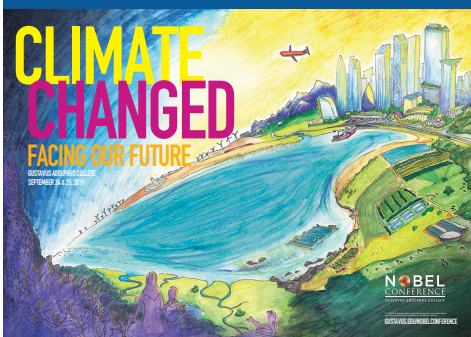
As Dean, one of my most exciting projects has been participating in the planning for the renovation and expansion of Nobel Hall. In the new building, geology will continue to be housed on the first floor, but we look forward to having teaching spaces that are well-suited to the hybrid science we frequently do—switching from rocks to bench chemistry from one lab to the next, for example. The first floor remodel will include a process sedimentology lab (see if you can find the image in the newsletter!), with both large and small stream tables, as well as an Integrated Geosciences lab with flexible space for a variety of course and research work. Also, the museum will relocate to more visible space, just off the new North Lobby. At present, we had a small groundbreaking ceremony in spring 2018 and we expect full project completion in time for fall semester 2020.

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TWO YEARS OF EARTH ORIENTED NOBEL CONFERENCES

We hope you were able to see this year's Nobel Conference, "Living Soil: A Universe Underfoot." If not, we encourage you to visit the archives. This was truly an amazing experience.

Plan ahead for next year!
Climate Changed: Facing Our Future.



2019 SPEAKERS

Richard Alley | Glaciologist,
Pennsylvania State University

Amitav Ghosh | Novelist, historian,
essayist

Gabriele Hegerl | Statistical
climatologist, University of
Edinburgh

Mike Hulme | Climatologist/
geographer, University of
Cambridge

David Keith | Climate
geoengineering physicist, Harvard
University

Diana Liverman | Geographer,
University of Arizona

Sheila Watt-Cloutier | Canadian
Inuit advocate and political
representative

Laura Triplett

Over the last year plus, I've become a co-chair of the 2018 Nobel Conference, "Living Soil: A Universe Underfoot." Yes, a Nobel on dirt! We had a tremendous lineup of speakers and had the geology department on full display. Learn more at gustavus.edu/events/nobelconference/2018.

Since the last newsletter, I've been busy with a couple of new research initiatives centered along the Minnesota River valley. First, students and I successfully launched a long-term environmental monitoring program in the Seven Mile Creek watershed just south of town, for which we now have several years of funding. I'm partnering with local nonprofits, government agencies at all levels, other universities, and local landowners to try to determine how we can maintain agricultural productivity and profitability while also improving water quality. It's a challenging project both scientifically and because there are so many interested parties, but I'm learning a lot and enjoying meeting many people who live and work on the land. Also, this summer Julie, Jeff La Frenierre (Geography), and I have joined a multi-institution effort to better understand landslides across the state, both from environmental quality and hazard perspectives. I'm loving working with geologists at other colleges and universities in the region, in part because coincidentally I went to graduate school with many of them!

In the classroom, I continue to enjoy our amazingly collegial, creative, and talented students. Last year I taught a new first-term seminar I called "The Science of Dirt," and a new major course "Climate Change: Geo-Solutions." I'm having lots of fun, and as always welcome guest lectures if you're passing through.

Rory McFadden

Hi Everyone! I was a visiting assistant professor at Gustavus last year and have started a tenure-track position here in the fall! I am very excited to join the Gustavus geology department! I have enjoyed acclimating to the Gustavus community and becoming part of the vibrant department. It has been great working with Laura, Julie, and Andrew. Before coming to Gustavus, I worked at the Science Education Resource Center at Carleton College and before that I was an assistant professor at Salem State University in Massachusetts. I am a structural geologist that works on deformed igneous and metamorphic rocks from ancient mountain belts. Most of my work focuses on how crustal-scale fault zones help bring once deep crustal rocks toward the surface of the Earth. I have worked in West Antarctica, Panama, Idaho, Northern California, and New England. My first projects at Gustavus will be working on the deformational history of the Pioneer Mountains metamorphic core complex in south-central Idaho. I conducted field work last summer with Gustavus geology student Alex Senjem '18.



Jim Welsh, king of all he surveys!



2017 Spring Break field trip with Jim.

Former Faculty

Jim Welsh

Greetings! Well—I'm now retired! Thirty-eight years at Gustavus! I know this is cliché—but it seems like only yesterday when I started. I still remember many of you who were in my first classes: Dave Malmquist, Nate Dahlmann, Craig Paver, Kelly Bevans, Tammy Hadley, etc. I do look back at fondness for all of the students whom I was fortunate to get to know over the years. One of the great things about teaching geology are, of course, the field trips. I would say that most of my best teaching memories (and probably best “teaching moments”) came from those trips. So—thank you all for being there! Without you I wouldn't have had this enjoyable career. It was a good ride.

I still haven't necessarily figured out what I want to do in retirement. (That probably won't surprise many of you.) I've never been much of a planner. I have always preferred to live life day to day. Certainly we (i.e. my wife Toby and I) plan to travel. We want to do things that keep us physically active. We bike a lot—and cross-country ski when there is snow. We are planning to spend some of February and March in Albuquerque. We have always liked the southwest.

While I don't have any specific plans as of yet—I do hope to keep somewhat professionally viable; perhaps teach a course on occasion, or maybe lead a field trip; and maybe to dabble

a bit of research, or maybe a consulting gig if something should materialize. I do hope to attend professional meetings (especially GSA) when I can.

Speaking of GSA, I did attend the Seattle GSA last fall. Spent a very nice evening with Greg Helland and his wife Carol. Nice also to see (though unfortunately briefly) Randy Hunt and Sue Swanson.

I would also like to thank those of you who were able to attend my retirement party last June, and those of you who were kind enough to send a note of appreciation for my retirement “book.” Thanks especially to Anna Lindquist and Jessica Hill for helping to organize the party. Because this was such a nice time I think we should do it again! I have been thinking that we might consider arranging an alumni gathering (i.e. “grab” a couple of tables at a local Twin Cities brewpub—or someplace similar) on perhaps an annual or biennial basis. If there is potential interest in such an event—let me know. Likewise, if anyone would be willing to work with me to plan such an event—let me know.

Nothing else to report for the moment. Feel free to drop me a line (email). I would love to look any of you up as we travel—should we be in your vicinity.

Mark Johnson

Life continues to be good in Sweden! I have just a few months (three) left of my chair position here at the University of Gothenburg, and I am looking forward to going back to teaching and research. As a “reward” for my time served, I will receive a four-month sabbatical that I will spend partly in Saint Peter, but also in Wisconsin and Canada. I look forward to seeing new and old Gusties in April or May 2019—a beer down at the Nic, or the Flame, or the River would be great (something tells those places might not exist anymore). It will be great to be back in the Midwest with good till and good Minnesotans!

I turn 64 this year and will celebrate in Liverpool (anybody not get that?). Daughter Ellen starts high-school and our two cairns continue to be lovable and untrainable. We just traded in our 2004 Prius with 210,000 miles for a 2016 Prius—trying to use two planets instead of four.

I am still loving the new LiDAR elevation models over Sweden. We are remapping known features and even finding new landforms. We just published with some Finns on a new landform (subglacially formed by meltwater, we think) that we are calling the “murtoo” after a place name in Finland. Cool name, huh? The textbooks will have to be rewritten!

It is hard to believe, but I have now passed the point where I have spent more time in this position in Sweden than at Gustavus. My time at Gustavus I still feel is “where I mostly worked,” and this time in Sweden, only a later chapter. But life takes on paths unforeseen. And it has been great.

Joe Carlson

Once again I have enjoyed reading all the news that you folks have sent. It always jogs fond memories of the 36 years spent in the Gustavus geology department. I am about to become an octogenarian, which is an 80-year old, not something like the Rotary Club. If you observe 80-year olds, you will see that we are a somewhat sedentary bunch. I am still gardening, fishing, and attending Gustie Geezers and events at the College. But it is just harder to pry me out of the easy chair after supper. Some habits die hard—I still can’t drive by a road cut with an outcrop exposure without staring, weaving, and eliciting a “watch out!” shout from Marge. I have been counseling Jim Welsh about the joys of retirement, and he seems to be taking to it exceedingly well.

Alumni News

It is my sad duty to write to you about the passing of two dear Geology alumni, Lee Peterson and Walter Youngquist, faithful and generous supporters of the department and the College. —Joe Carlson.

Lee Petersen '67 was one of the first students I met when I arrived at Gustavus. Lee had already taken paleontology from Chet Johnson, but I found the remnants of a research project he had done on microfossils from the Decorah shale. I used his meticulously identified slides for years in classes. Lee and Russ Sharp went with me that first spring break to collect vertebrate fossils in the Permian of Oklahoma. To the right is a photo of these young geologists on the outcrop. Lee married his classmate Ginny and went off to grad school at Arizona State, fighting his way through academic politics to earn a PhD studying ostracodes, of all things. Lee and Russ hosted us on an infamous January field trip Chet and I and a vanful of students made across the country a couple of years later. Lee collected minerals during his off time in Arizona and dutifully sent them back to his old school, as always with perfect identification and provenance. Lee had a spectacular career as an exploration geologist with Anadarko, a field that demands plenty of persistence, luck, and especially keen judgement. Ginny and Lee have always maintained their affection for the College and geology and have been generous donors to this cause.

Walter Youngquist '43, was Chester Johnson’s first geology student, although there wasn’t a geology department at that time. He graduated in three years, and went to the University of Iowa where, disrupted by a stint in the Navy, he earned a PhD. Walt became a leading expert in conodonts, those curious and beautiful microfossils that were so useful as stratigraphic tools. Walt published more papers on them than anyone else, and was the first to establish that a few extended across the great extinction into the Triassic. Walt began teaching in Idaho, but then entered the oil industry working among other places, South America. He left that continent by an unusual route, going over the Andes and down the Amazon, or “Over the Hill and Down the Creek,” as he reported in his hilarious book about his life as a geologist. Walt returned to teaching at the University of Oregon where he is credited with many



Lee Petersen '67 and Russ Sharp '68 on the Perryella outcrop in Oklahoma.

successful alumni especially in the oil industry. Walt also wrote several serious books and innumerable papers, many concerned with the limitations of resources on this planet and his advocacy of zero population growth. My personal contact with Walt came when between my junior and senior years at Gustavus I got a chance to spend a summer at the University of Oregon. Walt sent me for a week at the Coast with the field camp, then the rest of the summer was spent in Eugene. He taught me some stratigraphy, had me making thin sections, took me along on field trips and a backpacking/trout fishing trip to the Cascades, led me to a day of cracking basalts to collect zeolite filled vugs, some of which still reside in the Gustavus mineral collection. On one trip up a young volcanic cone, he kicked a big bread crust bomb and said, "If it lands near the car, it's my alumni contribution." It did, and you can find it in the Geology Museum today. Mostly, I got the chance to meet a special personality, a startling bright mind, a devastating sense of humor, boundless energy and good will. Among other things, Walt invested very wisely, and was pleased to share the proceeds with Gustavus geology as well as other parts of the College.

Russ Sharp '68

Unfortunately my only other activity was observing Cret. chalk outcrops in stream beds while looking for my errant golf ball.

Allen Lipke '70

I have given up my job with the neutrino research in Minnesota. The Soudan Lab is closed but the U of M is still operating the NOVA detector in Ash River, Minn. I worked for the lab for about 11 years after I retired from teaching for Hibbing High School. I'm taking some time off to travel, we will be in Stockholm this fall for the Nobel awards, just as visitors.

ALUMNI INPUT FOR PROGRAM REVIEW

It's been 11 years since our last 10-year review—time is funny that way—and we'll be doing a program review this year. Some of you alumni will be hearing from us, and we'd genuinely like to hear from as many as possible, even those who did not pursue a traditional path post-graduation. A survey will arrive electronically, sent via the College. To make sure you're included, please take 30 seconds to update your contact information at gustavus.edu/alumni. Click the "update contact info" button and follow the prompt. Easy!

Jim Himanga '71

No changes, every day seems the same in retirement. Except maybe for when we are traveling. We just returned from a trip to New Zealand and Australia. We had done Australia before, but we needed to return to see Ayers Rock as it is an amazing chunk of arkose. In the spring we took a cruise from Florida to Washington through the Panama Canal with various stops including hot springs. Last fall we did Patagonia and noted intrusives and later marveled at all the volcanic features in Antarctica. We have seen all the current continents so they need to stop discovering/making more.

Dr. Karl Molenaar '76

I am still practicing medicine in Cannon Falls, Minn. Though I built and own the clinic and property Olmsted Medical Center out of Rochester owns the practice. I have a lease from them that runs another six plus years and at that time hopefully they will purchase the building/property from me and I will officially retire. I will be close to 70 when this happens though I will plan to take more time off in the next two years. Five years ago I had a heart attack caused not from any atherosclerosis but a blood clot that formed in my main artery, the LAD, after vigorous physical activity. Unfortunately the AMI, though fairly large, was not picked up at the hospital I went to and damage occurred to my heart which now has an EF (ejection fraction) of 45 percent instead of 60-65 percent. At the same time that I had the clot in my artery I also had a clot in the left chamber of my heart that took four months to dissolve with blood thinners (coumadin). I have no physical limitations as a result of this event but the past usually comes back to influence your future and this last July I had a minor stroke that affected my speech (an aphasia) but with "quick" action this time with getting TPA (a clot buster medication) all symptoms cleared within 30 minutes with no residual deficit. I will now be taking coumadin indefinitely. My son is teaching high school World History in Houston (survived the hurricane) and my daughter is in Seattle working as an Interior Architect for a small firm.

Craig Paver '81

After some time in climate-controlled hiding, I'm ceding to your appeal for new alumni contributions to the Geology Newsletter, but really only to point out why some of us turn up missing. Following my graduation, I never set the geologic world afire or even found work in the field. It's not that I evolved into believing the world was created in six days, but I'm never going to write in to share exciting tectonic research or disconcerting fossil evidence. I have none—and never will. Heck, I don't even remember if I ever could successfully balance a chemical equation. And yet, even carrying this baggage, you successfully chided me to respond. But I still got nothin'. I'm going to push away from full-time employment shortly and, along with my first spouse of 35 years (also no lurid or revealing personal dirt to share), will begin a slow-motion road trip later this year, beginning with six months in Manhattan (where geology gets noticed only if it's IPO-related). No surprise, but this is how some alum fall off the department's radar.

Kidding aside, I appreciate the instruction, counsel, and friendship you, Jim, and others freely provided within our corner of Nobel—and one of my 2018 goals is to spend a day or two in Saint Peter. But I simply have no updates worthy of the Newsletter's sensibilities. Or, maybe just an easy one—fledging geologists can maneuver adulthood's stratigraphic column without a rock hammer. Gustavus geology provided me much more than the frustration of predicting a hydrothermal solution's crystallization order (Thanks, Google!)—but it has none of the latter's sex-appeal. I hope all's well with you and congrats to Jim on his retirement! Thanks for all you did and continue to do, including managing the Geology Newsletter. Freshly unburdened, I'll now slide back into the shadows beyond the reach of Newsletter contributors.

Dave Malmquist '83

Nothing earth-shattering at my end (seismology pun intended). At work, I continue as the News & Media Director for William & Mary's Virginia Institute of Marine Science, and almost always really like my job, as it gives me the opportunity to read and write about marine science and coastal geology on a daily basis for pay. One big story around here is what Virginia state legislators call "recurrent



Interior Rendering of the planned North Lobby, Nobel Hall.

coastal flooding” and the rest of us call sea-level rise plus coastal subsidence due to groundwater withdrawal (two major wood-pulp plants) and isostatic re-adjustment of the fore-bulge generated during the Wisconsin Glaciation. On the personal level, we just sent our oldest son Sam off to college at Virginia Commonwealth University in Richmond near the fall-line of the James River. Our youngest son Ben is an outdoor-loving eighth-grader who enjoys first hand involvement with the Hjulström Curve while mucking around in the fine-grained alluvial and fluvial sediments of Virginia’s coastal plain. As for me, I enjoy biking our dissected lowlands (very few hills!), hunting for marine fossils (*Chesapecten jeffersonius*) in our local Pliocene deposits, and gardening in the oxidized, rock-hard clays of the Yorktown Formation (I sure do miss the rich, loamy soils of southern Minnesota!). I also visit our cabin in God’s Country (aka the Precambrian Shield of northeastern Minnesota) as often as possible, and continue to catch lunker walleyes and bass on a regular basis (I wish).

Sara (Matthias) Dobbs ’84 and Steve Dobbs ’84

Greetings from Hatteras, North Carolina. Steve and I are pedaling along the East Coast on a ride to raise funds for the American Foundation for Suicide Prevention. We started in Portland, Maine and will end in Ft. Lauderdale, Florida in a couple of weeks. This month marks two years

since Steve retired from Chevron, but I’m still working contract for Chevron in a non-geology role. The highlight of our year was becoming grandparents this spring to Peter Lawrence Dobbs. Another highlight for us was completing a NOLS Sea-Kayaking course in Patagonia. I had to dig deep to remember what I learned on the Gustavus Jaunary NOLS Sea-Kayaking course in Baja with Deb Dirlam back in 1983!

Kent “Monte” Johnson ’84

Not much new here... I am in my 25th year of teaching science in the Robbinsdale School District. My wife and three girls have been in St. Michael for the last 22 years. My oldest daughter is in her freshman year at UW Eau Claire. Always have smile when I think of the geo crew at Gustavus.

Cathy (Saunders) Schultz ’84

I married a Gustie, Dave Schultz ’82. Moved to Bemidji Minnesota from the cities in 1999 when Dave was hired as CFO of the local telephone company (when I found Bemidji on the map I laughed and laughed assuming we would never move there—but yes we stayed because we love the town, just not the distance from family and friends). Raised two kids—one a senior Tommie (boo) and one a Gustie sophomore. I have been working as a contract employee for Landmark Environmental since 2004. Work has picked up now since we are empty nesters! Best job I have worked on so far involved cleaning up the south shore of Lake Bemidji

with the use of aqua barriers (beware of failing barriers)! Worst job I have worked on so far involved construction oversight for MN DOT in Climax, Minnesota! And they tell me this summer I could work construction oversight in Nashwauk—can't believe how lucky I am (she said sarcastically) At least the scenery will be better in Nashwauk!

Will be on campus for Christmas in Christ Chapel again this year—our son is in choir!

Sabina Kitts Ylinen '87

I've worked for Medtronic for nearly 13 years. I'm enjoying my environmental, health and safety management role within Medtronic's global facilities and real estate group. Our kids are teenagers and starting to think about where they want to go to college...geology doesn't seem to be in their plans, however. The devastation of the US Virgin Islands makes me especially sad when I remember the wonderful 1986 January trip spent doing marine biology and geology research at VIERS.

Sharon Ringsven '88

I'm still at the Grand Canyon. Not much news other than the "big ditch" is still here. Some great papers have come out from our physical science folks. One area is the karst system on the Kaibab Plateau (North Rim of Grand Canyon), where dye tracing has been done to determine the source water of the aquifer. The results have been very interesting in that the dyes are exiting in springs that are a significant distance from where the dye was put in the snow pack of sinkholes. Some are obviously following fault systems, though others are unknown yet. Look for some upcoming articles in the *Hydrogeology Journal* and the *Journal of Environmental Monitoring and Assessment*. In August, I was featured in the National Park Service Intermountain Regional Employee Spotlight. It was fun to reminisce about how I ended up with a geology degree and doing business in the NPS. Onto another fun thing... I've had some of my classmates and Mark Johnson ask about coordinating a backpack trip here at Grand Canyon. So... the question for you all is... is anyone interested beyond the few of us? Options include a backpacking trip in Grand Canyon, a road-trip of national parks of the Southwest, a Grand Canyon river rafting trip or...? I'm willing to

work on organizing something if people are interested.

Backpacking ranges from 3-7 days for some cool trips here at Grand Canyon. River rafting takes a bit more planning, is definitely more costly, though the geology along the 227 miles is pretty fabulous to include nautiloid canyon (think big—>20cm), unconformities, fossils, faults, lava dams, etc. If there is some general interest, I'll put a Survey Monkey together and have Joe send it out to the alumni and we can go from there. And to wrap up Throw-Back Thursday.... this past January marked the 30-year anniversary of the January geology class (with Mark Johnson) where part of the trip was a backpacking trip into Grand Canyon. We started off the day after a blizzard following the snowplow up to Grand Canyon. We hiked down Grandview Trail with snow and ice on the trail and spent several days below the rim along the Tonto Trail, down to Phantom Ranch, a day hike to Ribbon Falls and up Bright Angel Trail. This was the trip that helped me decide I wanted an outdoor job versus an indoor job. I never thought that 30 years later I would be working at Grand Canyon.

Sue Swanson '89

Thank-you for your persistence in sending your polite requests for updates. Each year, I decide my news is probably unworthy of special attention. I then I feel guilty for not sending anything in—a double whammy of Swedish-Lutheran modesty/guilt. But this year is different! Laura invited me back to Gustavus in March, and I finally took her up on it. I visited Gustavus as part of the "Year of Jim" and gave two talks. It was such a pleasure to meet with current Gustie geology majors, hang out with Laura, Jim, and Julie, and wander around a place that has influenced my life in so many ways. My only regret is that I didn't get to see you! If I haven't said it clearly before, thank-you to you, Jim, and Mark for being such wonderful teachers and mentors! I continue to stay busy at Beloit College. We have our own active (and somewhat goofy) geology program that, after 16 years, definitely feels like home for me. I took a group to China last May as part of an interdisciplinary program exploring the natural and cultural history of the Yellow River basin. We'll go again in 2019. In the meantime, I continue to teach hydrogeology, geomorphology, and GIS courses. I'll also take geo-majors to Canyonlands in



The planned Sedimentology Lab, Nobel Hall.

May 2018. Research is also going well. Colleagues at the WGNHS and I just finished a three-year effort to inventory springs in Wisconsin. Beloit students were involved in the effort throughout, which was especially rewarding. My husband (Steve), dog (Nellie), and I are otherwise happy and healthy.

Cara Larsen Alferness '94

Had a great year. still employed at Sealaska Environmental Services in Washington State as a project manager mostly doing long-term groundwater monitoring for Navy projects. I am in my second year of diving—a highlight this year was night diving in Hawaii. My husband and I are also co-owners of a 1959 Cessna 172 based in Bremerton (KPWT) not far from our home, which is opening up a whole world of aviation with new places to visit and interesting people; there are many fly-in only campgrounds here. My husband and I recently adopted a sheltie we named Gyro, who we rescued off of San Juan Island; it was quite a day flying up to the islands, meeting him and knowing he would adapt well to flying out of there! His eyes grew really large when he realized the “strange car” he was in had left the ground! Thanks for keeping up this letter, Joe.

Kathy Bonnifield '94

I'm still working at the Piper Fund, which is an initiative of the Proteus Fund. My specific focus is on preventing special interest groups from influencing state courts as well as trying to prevent state courts from being politicized. It's incredibly inspiring work and one which, I think, has strong support of individuals regardless of their political leanings. In the past couple years, I've traveled and met with folks in about 20 states (some of those states multiple times). While I usually don't have time to explore the areas I go to, I would recommend the following: bike or walk over the Big Dam Bridge in Little Rock (it's the longest bridge built for the purpose of pedestrian travel in the US); check out the Dallas Opera (at the urging of a number of people, I saw the opera, Norma. It was great, the Dallas Opera was great, the people at the opera were incredibly friendly even though I was not as dressed up as they were); check out the jazz in Kansas City and the blues in St. Louis; go to the Central Library in Portland and find the special collections corner room (there's some super-interesting books there and the librarian was wonderful), and, because I just did this yesterday, go up the tower at Kettle Moraine State Forest in Wisconsin during the fall when the trees are changing color. While I just listed places, I can't really describe the people that I've met in this short note. It'd be great to know where other folks are so that when I'm in their part of the country I could either visit them or hear the places they recommend I visit.

Julia Fitzke Sperry '95

It is hard to believe how fast time flies!! For the last 22 years I have made Montana my home. 15-18 of those years I was fortunate enough to find work in the field of paleontology, geology, or museum exhibits. I ran a paleontological survey of fossil sites in Yellowstone National Park for four years under the direction of the National Park Service. This led to studies in Glacier National Park, local state parks, as well as local and national museum collections. I enjoyed running into a few of you at conferences such as GSA or SVP during those years. I toured for a time with a traveling dinosaur exhibit I helped develop, and directed crews to design and articulate a permanent exhibit in Atlanta. (<http://www.fernbankmuseum.org/explore/permanent-exhibitions/giants-of-the-mesozoic/>.) Since my marriage to a Bozeman native seven years ago, my paleontological endeavors have stagnated slightly. I have been managing an office of 20+ accountants and providing technical I.T. support for the last several years. I enjoy the work and it allows me to use my free time to get back out into the field. My husband's family owns several mining claims, one silver and a few gold. We enjoy panning and scrounging around for minerals and artifacts of the ghost towns that are nearby. We also enjoy hiking, backpacking, biking, and skiing. I teach the occasional class in paleontological techniques at the Museum of the Rockies (MSU) and at local gem and mineral clubs. One of the things I love most about Montana is that it has nearly every type of geologic environment within a few hours' drive. My husband and I also run a vacation rental in Bozeman. If you are ever in the neighborhood, you are more than welcome to stop by. I've been thinking of revisiting the ski adventures some of you may remember from the mid-90s. I'd love to host some geo folks again for skiing at Bridger/Big Sky. I am sorry I was not able to be there for Jim's retirement party. Thank you to Jim, Joe, Mark, Heyo and Carol for the fantastic years at Gustavus and of course; to all those I met there between '91-'95.

Andrew J. Tarara '95

I am still working for AECOM (formerly ENSR) as a Program Manager for the Chevron Marketing and Business Unit account. I have been here for 18 1/2 years now. I manage a number of projects big and small all over the eastern half of the US. I get to see much of the "flyover" part of the Country. I have one other project that I manage locally that has a Gustavus twist. It is an MPCA owned site that put me back in touch with Hans! Small world. Still married to another Gustie and a father of four quickly growing children (Jacob [13], Natalie [12], Samuel [12], and Laney [9]) who are involved in many activities from airsoft to Zelda. I assisted in coaching my son's baseball team this past summer where we won the State Tournament—it was a thrill for all involved, much like those Petrology and Structural Geology courses back in the day. We still reside in the east metro and have made it down to Saint Peter a couple of times in the past 15 or so years. I hardly recognize the place anymore, but I hear it's still churning out respectable members of society. Speaking of that, I ran into John Turner at a MN Loons game this summer. I have lost touch with many of the other geology grads from the Class of '95. I hope a few pass along their updates too.

Ryan Erickson '01

I am now a "Senior" Geologist at Barr Engineering in Duluth, based on duration and not merit, and primarily work on brownfield and pipeline environmental projects. Our girls are doing well and Lucy (7) is usually able to name the three different rock types and has an eye for agates. Hope all is well in the department and hopefully some of the big new donation makes it to the basement of Nobel.

Michelle Maley '04

I hope you've been doing well! I've been busy working in San Diego as the installation biologist for Naval Base Point Loma and Naval Base San Diego, covering endangered species and other natural resources management. I earned an MS in biology last December. Next month, I'm visiting Churchill to (hopefully) see polar bears, so I'm looking forward to that. Have a wonderful rest of your week, and thanks for putting the newsletter together again!



Birds-eye views of our construction progress, views from the west and southwest.

Rachel Oien '13

I am starting a PhD program at the University of Aberdeen, Scotland. I will be working with Dr. Matteo Spagnolo on the reconstruction of the palaeo climate during on the onset on the Antarctic ice sheet. I also received a Scottish Alliance for Geoscience, Environment and Society (SAGES) fellowship for the 3.5 year duration of the program. I am very excited to be a part of the British Glaciological Society and enjoy the Scottish geology.

Serenity B. Mahoney '15

I was recently accepted to attend the University of Minnesota Duluth's Earth and Environmental Science Department to pursue a MS in Geological Sciences. I will be studying under the advisement of Dr. Vicki Hansen, whose work with NASA and USGS geologically mapping the surface of Venus is nothing short of stellar. We have not yet met to decide on my specific project, but I will be employing geomorphology and structural geology to interpret the geologic formations and planetary evolution of Venus.

Russ Krueger '17

I hope you are having a good fall semester and getting settled into a routine after the Nobel Conference. The beginning of my semester has been pretty hectic with settling into my class schedule, work schedule, meeting many new people, settling into a new environment and trying to find a thesis project. Through it all, my mind keeps wandering back to Gustavus and wondering how everyone is doing. A lot of good things have happened in the last two weeks. I'm getting along really well with the other geological engineering grad students and enjoying all of the concepts in my classes. I still feel like there is so much more I want to learn and do, but when hasn't that been the case? The thing I am most excited about is that I found a thesis project that will be funded starting in the summer! The project will be using field instrumentation (including high resolution DEMs created from photos taken by a drone—hopefully flown by me) to monitor slope stability in bluffs along Lake Michigan. The field data (lots of fieldwork!) will be used in a model to estimate the contribution of the various formations making up the bluffs. I think this project will be a great way to incorporate many things that I really enjoy—problem solving, field work and instrumentation, geospatial analysis—into a project investigating a very practical problem. If you are interested, I'd be happy to keep you informed on the progress of the project. I hope everything is well and would like to know how Gustavus is getting along without me.



Exterior Rendering of Nobel Hall. Expected completion Fall 2020.



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