

# DEPARTMENT OF GEOLOGY AND ENVIRONMENTAL SCIENCE Annual Alumni and Friends Newsletter

The Power of AND

University of Wisconsin Eau Claire

# **INSIDE THIS ISSUE**

Editors: Lorilie Steinke and Kent M. Syverson Phone: 715.836.3732 | Fax: 715.836.5627

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Cover image: Geology students studying rocks at Field Camp II near Whitehall, MT, June 2022

### **LETTER FROM THE CHAIR 2022**



### Greetings, Friends of our Department!

The academic year 2021-2022 has been a busy year for our department, and we have several important changes to report. The most obvious change is our department name: we are now the Dept. of Geology and Environmental Science. This is truly a change in name only. We did this so our name better reflects all that we do in our department. Currently, half of our majors graduate with degrees in either the Environmental Science or the Hydrogeology and Water Chemistry emphases. Many of our majors are ultimately employed in the environmental consulting industry or in governmental agencies focused on environmental issues. After some political work, our proposal was approved unanimously by the University Senate. If you are concerned that this name change

will harken a change from our scientifically rigorous, evidence-based program, please rest easy: we are not changing any requirements for our curriculum, nor will we be diluting our strong field-focused program.

One notable, but sad, change to our program is that, after joining our staff in fall 1995, Lori Snyder has retired. Many of you were recruited into the program through her introductory lab courses or her Geology of our National Parks and Monuments course. Lori developed our Future of Global Energy course and also taught Earth Resources and Sustainability. Many of you also benefited from having Lori as your first faculty advisor, as she served as the primary contact for all incoming and newly declared majors for nearly twenty years. Lori's contributions to our department are irreplaceable and we will sorely miss her in the years to come. Best wishes to Lori as she embarks on this next exciting phase of her life.

The ongoing Covid pandemic has continued to impact our program. The 21-22 academic year was a bit easier for us than the previous two years, but serious challenges to teaching and learning affected both professors and students alike. We are particularly thankful that we didn't have to halve our lab meeting times to accommodate the mandatory 6-ft safe-distancing requirement! Despite challenges, the



Field camp II student at work in Montana, June 2022.

accomplishments of our majors in this time of uncertainty remain impressive. This academic year, 24 students will graduate with a major in our department. Six of these students will begin graduate programs this fall at the Univ. Texas-Austin; Univ. Illinois Urbana-Champaign; Univ. Minnesota-Twin Cities; New Mexico State Univ.; Univ. Manitoba; and Minnesota State Univ.-Mankato. In April, 24 of our majors were involved in 14 presentations at UWEC's week-long Celebration of **Excellence in Research and Creative** Activity event. And despite Covid limitations, ten of our students presented at national and regional scientific conferences. An additional 19 majors participated in paid internships this past year. The unusually large participation of our majors in these high-impact experiences continues to reflect well on our program.

The last big change--we will welcome a new department chair next year: Dr. Scott Clark will be taking over the reins. I will be taking a year-long sabbatical this upcoming academic year to publish student-collaborative research conducted over the last few years. It has been a great privilege to serve as the department chair during the past three years. I will help Chair Clark in every way possible to make this transition a smooth one for him and for you.

Phil Ihinger Professor and Chair

#### **GEOL 312 FIELD TRIPS**

#### By Robert Hooper

MinPet I students continued to take the longweekend field trips right through the pandemic, although the department had to make the field trips optional rather than required. Almost all the students have been participating, and they report that the field trips are still the highlight of their studies at UWEC. The field trip to the Mid-Continent Rift (Mellen WI) was the first weekend in October this past year (2021) and the weather and autumn color was amazing on the south shore of Lake Superior.

Two weeks later the MinPet I group was supposed to go to the Black Hills, but the forecast of up to 48 inches of snow with temperatures in the teens and strong NW winds meant that for only the second time in my history of teaching the course, we canceled South Dakota. Students were very disappointed, but I redirected the trip back to the UP of Michigan. We spent three nights in the Porcupine Mountains and then travelled to the northern tip of the Keweenaw Peninsula, staying one night at Copper Harbor. It was a long drive, but the students enjoyed great weather, went swimming in Lake Superior several times, and enjoyed a wonderful star-filled night camping at what must be one of the greatest dark-sky areas in the country--the tip of the Keweenaw. Their major takeaway from the long weekend in the Upper Peninsula is the impressive nature of the Copper Harbor Conglomerate. The sheer volume of conglomerate deposited in the Mid-Continent Rift reminds us that the MCR represents a world-class tectonic event in the center of the continent. We concluded the second field trip with Sunday stops to see the kyanite schist at Powell, WI, and a quick stop in Wausau to examine the syenite complex. While the 2nd UP trip was a good experience, the Black Hills of South Dakota still makes for a better trip to examine a wide variety of igneous and metamorphic rocks in the field. I hope the weather holds so that the 2022 MinPet I group can get to the Black Hills.

#### FIELD CAMP I UPDATE – NEW MEXICO

#### By Scott Clark

I'm very happy to report that this year's Field Camp I ran in January, which is the best time of the year to be in southern New Mexico to learn about mapping. Having run last year's Field Camp I in May, it was nice to get back to teaching mapping skills to our 21 students in New Mexico's January weather when the skies were as clear as could be and the daily highs were in the 60s. Our drive to New Mexico was a bit longer than usual as we worked to avoid a major snowstorm in the Midwest. Even with the longer drive, we still made it the Frontier Restaurant in Albuquerque in time for our traditional first breakfast in NM.



MinPet I students on a beautiful fall day, Bessemer Quartzite, UP Michigan, October 1, 2021.

Field camp ran as smoothly as we could hope for, and everyone stayed healthy at camp. In fact, we were all vaccinated and careful in the days leading up to our departure because the group took the threat of potentially bringing COVID to Kingston seriously. Bob's cooking was, as always, a hit: "I never eat this good at home!" was uttered by more than one student. With good food and near-perfect weather, the students carried positive attitudes throughout the entirety of field camp. A highlight, as least for some students, was that the Black Range Lodge installed not one but two full bathrooms on the third floor! As anyone who has ever bunked on the third floor knows, this made a huge difference for everyone staying in those rooms. Lastly, Bob and I thank Tara Lemke and Madeline Marchiafava for their great support as our TAs.



Field Geology I students taking good field notes, January 2022



Landowner Gene Thornton (2nd from the left) with his adopted "Geology grandkids," the Field Camp I students in New Mexico, January 2022.

#### FIELD CAMP II UPDATE-MONTANA

#### By Robert Lodge

Another beautiful and enlightening field camp in Montana is in the books! Instructors Robert Lodge and Phil Ihinger, TA Katherine Langfield, and 13 students drove from Eau Claire to the Iron Wheel Guest Ranch for yet another amazing mapping experience in those structurally complex rocks. One of the (very few) benefits the pandemic brought us is that we took a critical look at the way we travel to Montana. We decided it was much safer not to drive overnight when we could make it in a single day. That saved us a day on the schedule, and we filled with a Field Camp II first - a geologic excursion to Yellowstone National Park to describe modern volcanic and hydrothermal features. Students saw

igneous and ore-forming processes that are relevant for a better understanding of the ancient rocks they have seen in the Midwest. Back in Montana, students did an excellent job mapping and understanding the complex geology of our field areas despite rainy and cool days. The cooler weather probably helped their ability to hike around, and they pulled off some of the longest traverses I've even seen at this camp. We also had another amazing tour of the Continental Cu-Mo mine in Butte and the Lewis and Clark Caverns State Park. Scott and Jody and the Iron Wheel once again amazed us with their hospitality. I can't stress this enough: we are incredibly lucky to have the Iron Wheel Guest Ranch



as our base for Field Camp. Once again, they were busy renovating and re-modelling, and the lodge looks amazing. Students feel comfortable and are made to feel at home while they work on their assignments. Students unwound with some wiffle ball and cornhole. Resident therapy dogs, Belle and Jax, loved the attention from the students. Then came the grand finale; Jody prepared our final meal by smoking an impressive 30 lbs of ribeye roast that moved some students to tears. (I mean it! Someone actually cried it was so good.) It was an amazing field camp and we are looking forward to returning next year.

"Scott and Jody and the Iron Wheel once again amazed us with their hospitality. I can't stress this enough: we are incredibly lucky to have the Iron Wheel Guest Ranch as our base for Field Camp."

Field Camp II students, June 2022

#### 7TH ANNUAL GEOLOGY/RMI ADVISORY BOARD MEETING HELD

By Kent Syverson

The 7th Annual UWEC Geology/Responsible Mining Initiative Advisory Board meeting was held on May 17, 2022. We met face-to-face once again with one member Zooming into the 4.5-hr meeting. Eleven outside stakeholders (including seven alumni) joined us from Wisconsin, Minnesota, Illinois, Colorado, and Idaho. The major discussion revolved around long-range planning for staffing and future trends in geology and environmental science. As always, the Advisory Board provided extremely valuable input.

We thank the professionals who attended the Advisory Board meeting. Participating in the meeting required valuable time from our stakeholders, so we are grateful for their investment in our program. Participants included Todd Lindblad (US Silica, '13), Audrey Boerner (Eau Claire City-County Health Dept., '11), Ken Bradbury (State Geologist, WGNHS), Veronica Aranda (SEH, '18), Breck Johnson (Oxy, '04), Dale Kerner (Perpetua Resources, '96), Vince Matthews (Emeritus State Geologist, Colorado Geological Survey), Maureen Moore (Maptek), Tina Pint (Barr Engineering, '99), Bob Servais (Milestone Materials, '04), and Roberta Walls (WDNR).





### RESPONSIBLE MINING INITIATIVE UPDATE

#### By Kent Syverson

In November 2013, the UW System awarded UWEC Geology a \$451,000 Economic Development Incentive Grant for the Responsible Mining Initiative [RMI]. This grant was awarded to prepare highly qualified graduates for work in the mining industry, the environmental consulting industry, and in regulatory agencies such as the DNR.

The RMI continues to have a positive impact on students. In the spring, thirteen students completed 24-hr MSHA new miner training with instructional support from Hoffman Construction. In addition, eleven students participated in the Responsible Mining Seminar where outside experts from industry and the DNR spoke about aspects of responsible resource extraction, giving expert testimony, etc. Students seeking internships in summer 2022 had many high-quality options. We placed students in metallic mining (Alaska, Idaho, and Montana), the environmental industry (mainly in the Midwest), and in governmental agencies. Here are two other telling statistics: Geology scholarships and grants in 2013 (\$2500) vs. 2022 (\$32,255), and the number of paid internships in 2012-13 (4) vs. 2021-22 (20). More than half of the summer 2022 internships are in hydrogeology, environmental geology, and geotechnical engineering, and the rest are in metallic mining/ exploration.

These successes require much relationshipsbuilding with industry. In May, we held our 7th Geology/Responsible Mining Initiative Advisory Board meeting. Eleven external stakeholders attended the event and we obtained valuable feedback about our future staffing plan (see separate story). With COVID restrictions easing, we hope faculty can attend professional meetings to network with potential stakeholders. Lots of work, but it has been exciting to see students benefit from these new opportunities (see separate articles about internships, scholarships, and donations). Thanks to all partners with the Responsible Mining Initiative!

The Responsible Mining Initiative is providing amazing opportunities for our students. The scholarships reduce student debt. The internships provide a valuable window to the working world. When internships and scholarships/grants are added to field experiences and our strong collaborative research program, the Dept. of Geology is offering an undergraduate education unavailable at other universities. This is preparing our STEM graduates for the work force and graduate school. If your company might want to partner with the RMI through an internship, donation, or speaker, please contact Kent Syverson or Brian Mahoney.



Mineral exploration intern, Lindsey Henricks, Montana, Aug. 2021



Brown County environmental intern, Ashley Zuge, summer 2021.



South Dakota Dept. of Environment and Natural Resources intern, Evan Weber, summer 2021.

#### TWO STUDENTS ATTEND FRAC SAND CONFERENCE IN GRAPEVINE, TX

By Kent Syverson

Kent Syverson and two UWEC Responsible Mining Initiative (RMI) students attended the 10th Annual Frac Sand Supply & Logistics Conference in Grapevine, TX, Sept. 15-17, 2022. Students Michaela Schnell (WISA Scholarship recipient) and mining industry intern Bridget Russell helped the meeting organizer, Mr. Pete Cook, with meeting setup and logistics in return for free registration and lodging at the Gaylord Texan Resort and Convention Center (a fancy place). The students had the chance to discuss the future of global energy with the Rystad Energy team – a great opportunity! Student air transportation to the meeting was funded by generous donations to Geology's new Internship Advancement fund (#2780). Thanks to Pete Cook and the Petroleum Connection for sponsoring the RMI students!





Michaela Schnell (L) and Bridget Russell (R)

#### BORSKI RECEIVES UWEC ALUMNA AWARD

Modified from News Bureau story dated 12/3/21

Geology and Mathematics alumna Jennifer (Tobias) Borski '96 received the UWEC Alumni Association President's Award on December 17, 2021. The award recognizes outstanding professional and personal achievements and service to UW-Eau Claire. Borski, originally from Watertown, WI, entered UWEC as a preengineering major. However, she fell in love with the UWEC campus and interviewed all STEM chairs to find a new academic home. Bob Hooper convinced her Hydrogeology was a good fit; Jennifer agreed, switched majors, and never regretted that decision!

Jennifer is a hydrogeologist with the Wisconsin DNR whose specialty is cleaning up contaminated brownfields. For 20 years, she was a project manager who led efforts to clean up and redevelop complex contaminated properties. For her redevelopment work on one brownfield site along the Fox River near Appleton, she was recognized with the naming of the Borski Boardwalk. For the past two years, Borski has been a DNR hydrogeologist serving as the vapor intrusion team leader, specializing in developing policy and training regarding the contaminated air (vapors) emanating from the historical soil and groundwater contamination.

Jennifer remembers her time as a studentespecially her geology field classes, which she calls "by far the most valuable courses I took while at UWEC." Borski also appreciated the opportunities for internships, undergraduate research and independent thought that were encouraged by her professors.

"Getting an education at UWEC was so much more than a classroom setting," Borski says. "I fondly recall hours in Phillips Hall working on undergraduate research projects in the labs and routinely meeting with professors to continue discussions beyond the classroom. Phillips Hall was the hangout where everyone was treated as contributing adults and opinions mattered."

We congratulate Jennifer on her welldeserved alumni award and her service to the State of Wisconsin!



Jennifer Borski (in black) with mentors John Tinker, Brian Mahoney, Kent Syverson, and Lori Snyder.

#### LORI SNYDER RETIRES AFTER 26 YEARS

By Kent Syverson

In May 2022, Ms. Lori Snyder retired as a Senior Lecturer after 26 years of service. Lori has been a huge asset since she joined our Geology program in fall 1995. She was an instructor and recruiter in large (Geology of the National Parks) and small (Physical Geol., Environmental Geol., Future of Global Energy, and Earth Resources) classes. She taught ~10,000 students at UWEC--wow! She also advised geology majors through their completion of MinPet I as our Undergraduate Program Coordinator. Lori participated in many research projects with undergraduate students, starting in British Columbia "a few" years ago and continuing through her last semester.

Lori, who received her BS in Geology from Colorado State Univ. and her MSc in Geology from the Univ. of British Columbia, values the interactions she had with UWEC students. Her biggest career highlight was teaching students in Rocky Mountain Field Studies and several spring break geology field excursions. Lori's departure will leave a **major** hole in our department. However, we thank Lori for her service and wish her well in retirement! Future adventures for Lori **might** include geology naturalist work on cruise ships, serving as a Pilates instructor, and gardening.



### ALUMNI RECEIVE MEDAL OF MERIT FROM CANADIAN SOCIETY OF PETROLEUM GEOLOGISTS

Congratulations to Alex Hutter ('16) and Dr. Luke Beranek ('03)--they received the 2021 Canadian Society of Petroleum Geologists' Medal of Merit! The medal is awarded annually for the best peer-reviewed paper on a geological subject related to the petroleum geology or the geology of energy generation and extraction in Canada. The award-winning paper is "Provenance of Upper Jurassic to Lower Cretaceous synrift strata in the Terra Nova oil field, Jeanne d'Arc basin, offshore Newfoundland: A new detrital zircon U-Pb-Hf reference frame for the Atlantic Canadian margin": AAPG Bulletin, v. 104, no. 11 (November 2020), p. 2325-2349. This research was conducted at Memorial

#### **EXCELLENCE AWARDS**

The department awards excellence awards for academic achievement and service to the department. The "Excellence in Geology" Award recognizes the academic achievements of the outstanding graduating geology major, both in coursework and in faculty/student collaborative research. The winners of the Geology Excellence Award for 2021-2022 are Trevor Nelson and Maddie Palubicki. The Excellence in Service Award recognizes the exceptional service a geology major has done for the department. Trevor Nelson and Ashley Zuge are recipients of the 2021-22 Geology Excellence in Service Award.

Trevor is a native of Hammond, WI and in fall 2021 he graduated Summa Cum Laude with University Honors with a Geology degree (General Emphasis) and certificates in Water Resources and Responsible Mining. He participated in a research project with Dr. Phil Ihinger studying guartz crystal growth and with Dr. Robert Lodge studying granitoid geochronology in the Sturgeon Lake Greenstone Belt -- a collaboration with the Metal Earth program at Laurentian University. His work resulted in presentations at the Student Minerals Colloquium at the Prospectors and Developers Association of Canada meeting (Toronto), the GSA Annual Meeting (virtual), and the Institute of Lake Superior Geology Meeting (virtual). He received the prestigious Goldwater Scholarship--a national scholarship recognizing the very best undergraduate STEM scholars. He also completed the very first honors thesis in the Geology Department through the University Honors Program. He also won the David L. Risch Geology Research Scholarship and the Rossman scholarships AND he played varsity football for the Blugolds!

Trevor also received the service award because he has been a big help around the department. Lorilie recruited Trevor to fill vehicles with gas, clean vehicles, and shuttle vehicles to and from Enterprise. Trevor was extremely reliable and punctual. In addition, he served as a substitute University of Newfoundland where Alex was a master's degree student and Luke is an Associate Professor of Geology.

The Medal of Merit is the most prestigious and oldest technical award of the Canadian Society of Petroleum Geologists. The objectives of the Medal of Merit Award "are to promote the preparation and publication of geological papers of high quality, to give honorable recognition to works of merit, and by means of suitable publicity, to bring the attention of the members and of the public to the activities of the geological petroleum profession by awarding the Medal of Merit annually for the best paper."

driver for field trips and TA'ed numerous Geology classes. He is currently employed as an Exploration Geologist with Coeur Mining Inc. in Juneau, Alaska.

Maddie is a native of Mondovi, WI, and graduated Summa Cum Laude and with University Honors with her degree in Hydrogeology and Water Chemistry. She participated in several research projects starting her freshman year with Drs. Sarah Vitale and Brian Mahoney studying elevated levels of phosphorus in both surface water and groundwater, measuring stream baseflow in western Wisconsin in partnership with the WDNR, and using well construction logs to map Eau Claire County aquifer dimensions. She was awarded the prestigious 2021 Kell Container Corporation Scholarship through the UWEC Office of Research and Sponsored Programs for her student-faculty research collaboration. Maddie has presented her research at the 2020 and 2022 Research in the Rotunda events (Madison), the 2020 GSA Annual Meeting, and the 2022 Wisconsin Section of the American Water Resource Association meeting. She is currently working on a manuscript publication with Dr. Vitale.

Maddie had internships with Northern Industrial Sands (Chetek, WI), the South Dakota Geological Survey (Vermillion, SD), and Barr Engineering (Duluth, MN). She was the recipient of the Wisconsin Industrial Sand Association (WISA) Geology Scholarship, the Beckstrom Geology Major Scholarship, and the College of Arts and Sciences Rossman Scholarship (twice!). She has begun her career as a Project Engineer Technician at Tetra Tech in western Wisconsin.

Ashley is a native of Little Suamico, WI, and graduated Magna Cum Laude in fall 2021 with her degree in Geology-Environmental Science. Ashley served in ways unseen by most people. Ashley was a UWEC Telefund caller, and in this role, she spoke with many Geology alumni and raised much money for the Geology program. She also met with several donors to the department, gave them tours of our facilities,



Alex Hutter



Luke Beranek

and represented us well. She is now a Project Engineer Technician at Tetra Tech's Green Bay office.

Congratulations to our Excellence award winners!



Maddie Palubicki

Ashley Zuge



Trevor Nelson

# **SPANNING THE GLOBE!**











1. Yellowstone National Park on the way to Field Camp II, May 2022. Before the severe flooding...

2. Structural Geology students at Parfrey's Glen, WI, April 2022.

3. Evan Weber conducting Precambrian rock research in western Wisconsin, Oct. 2021.

4. Tara Lemke logging Precambrian rock core for her economic geology research project, Mt. Horeb, WI.

5. Bridget Russell, mining intern at Teck's Red Dog mine, Alaska, June 2022.







6. Field Camp I students "on the job" in New Mexico, Jan. 2022.

7. Trevor Nelson, Alaska mining geology intern, on a hike in southeastern Alaska, Aug. 2021.

8. Brian Mahoney and Lori Snyder helicopter mapping in the southern Brooks Range, AK, 2021.

- 9. Getting out that new hammer...! MinPet I field trip to the UP, Oct. 2021.
- 10. A meeting of the minds--Field Camp II students, Montana, June 2022.

11. Sustainability researchers tracking Davies Center waste disposal, Feb. 2022.







# SCHOLARSHIP CORNER

#### 2022 FRESHMAN GEOLOGY SCHOLARSHIPS ANNOUNCED

Thanks to alumni and friends for funding merit-based, annual scholarships for high-potential incoming freshman who are majoring in Geology. This year three recipients were selected, and each will receive \$1000. This year's winner of the new **Geology Opportunity Scholarship** (renewable for up to three years, donated by an anonymous friend of the department) is Ty Sagedal (Burlington). Lyndsie Vickers (Alva, OK) and Delaney Wormet (Sherwood) received the Freshman Geology Promise scholarship funded by Curt and Laura Peck. We look forward to their arrival on campus this fall!

#### **KLEVANN WINS BECKSTROM GEOLOGY MAJOR SCHOLARSHIP**

This year's recipient of the Beckstrom Geology Major Scholarship is Annabelle Klevann (Hanover, MN). This \$1000 scholarship, established in fall 2005 by alumnus Greg Beckstrom ('84), is awarded annually to a comprehensive geology major who has completed MinPet I. The awardee must have an excellent academic record and a demonstrated financial need. Thanks to Greg for his continued support of this scholarship.



Annabelle Klevann

#### **TWO JRC APPLIED GEOLOGY** SCHOLARSHIPS AWARDED

The recipients of \$1000 JRC Applied Geology Scholarships are Kaitlyn Field (Colfax, geotechnical intern with Intertek PSI) and Kalvin Watt (Holmen, drilling intern with the SD Dept. of Env. and Natural Resources). Recipients must demonstrate an interest in applied geology careers.

Josh Carlisle (UWEC Geol '02) established the JRC Applied Geology Scholarship. Josh and several other generous alumni donated this year to allow us to fund two scholarships. Thanks to all donors to this scholarship fund!



Kaitlvn Field

Kalvin Watt

#### WISA FUNDS SCHOLARSHIP IN **MEMORY OF RICHARD BUDINGER**

The Wisconsin Industrial Sand Association (WISA) donated money to the UWEC Responsible Mining Initiative in memory of Rich Budinger, former president and spokesperson for WISA and a wonderful friend of the UWEC Geology program. Rich passed away in June 2018. We thank WISA for honoring Rich in this way--Rich had a heart for preparing geology students to do evidence-based investigations.

The 2022-23 recipient of the \$2000 WISA Geology Scholarship is Jake Cipar (Medford). Jake will be in MinPet I this fall.



**THREE SOPHOMORE GEOLOGY PROMISE** SCHOLARSHIPS AWARDED

Curt (UWEC Geol '77) and Laura (UWEC '78) Peck donated money to establish the Sophomore Geology Promise Scholarship in spring 2021. Recipients must be geology majors enrolled in MinPet I in the fall and have an outstanding academic record. Recipients of the \$1000 Sophomore Geology Promise Scholarship are Natalie Engh (Woodbury, MN), Aidan Kwiatkowski (Forest Lake, MN), and Makenzie Sedlacek (Forest Lake, MN). We appreciate Curt and Laura's commitment to our Geology majors!



Natalie Enak

#### **BLUGOLD GEOLOGY ALUMNI** SCHOLARSHIP AWARDED

Thanks to the alumni who have funded a merit-based, annual scholarship for Geology majors in our program. This year a \$1000 Blugold Geology Alumni Scholarship was awarded to sophomore Lydia Kistner (Menomonie). This scholarship is funded by generous donations to the Geology Advancement Fund.



Lydia Kistner

Jake Cipar

#### TWO DAVID L. RISCH GEOLOGY RESEARCH SCHOLARSHIPS AWARDED



David Risch digging for dinosaur bones in Texas

David Risch (UWEC Geology '78) of Katy, Texas, donated another \$26,500 in 2022 to build the endowment in his fund. This allowed us to award TWO merit-based geology research scholarships for the first time! Recipients must be comprehensive geology majors with outstanding academic records, have an established Geology research track record, and plan to continue their engagement in research at UWEC the coming academic year. Recipients of the \$1100 Risch Scholarship are Lilly Glodowski (Colfax) and Evan Weber (Holmen).

David received a BS in Geology and Physics at UWEC and an MS in Oceanography at Texas A&M. He began his 31-year career in the energy industry as an exploration geophysicist initially with Phillips Petroleum Co., then Schlumberger, and retired from BHP Petroleum in 2013. Thanks to David for his generosity in endowing two scholarships!





Evan Weber

Lilly Glodowski

#### TWO H2O WELL DRILLING & PUMP SERVICE GEOLOGY SCHOLARSHIPS AWARDED

Nolan Rodriguez (UWEC Geol '18) donated money to establish the H2O Well Drilling & Pump Service Geology Scholarship. Recipients must be nonfreshman comprehensive geology majors with outstanding academic records. The recipients of \$500 H2O Scholarships are Lindsey Henricks (Oak Creek) and Bryanna Rayhorn (Loyal).

Nolan received a BS in Geology's Environmental Science emphasis. He participated in an entrepreneurial capstone experience where he developed a business plan for a well drilling business. He now operates H2O Well Drilling & Pump Service. We thank Nolan for his generosity!





Lindsey Henricks

#### Bryanna Rayhorn

#### MYERS/WILLIS FIELD CAMP SCHOLARSHIP WINNERS

Field camp experiences have become increasingly expensive for students. This scholarship, established by the department in 2006, is intended to lessen the financial burden of field camp for excellent students. The scholarship also honors the contributions of Dr. Paul Myers and Dr. Ronald Willis, geology professors at UWEC who worked hard to establish a strong field component in our young geology program.

Bryanna Rayhorn (Loyal) and Evan Weber (Holmen) are recipients of this year's Myers/Willis Geology Field Camp scholarships. Recipients were selected based on performance excellence at Field Camp I in New Mexico. Each student received \$500 to defray expenses for Field Camp II in Montana.

The Geology Dept. hopes to offer Myers/Willis scholarships to more students each year as the scholarship fund balance rises. We encourage all alumni who have benefited from our field experiences over the years to contribute to this fund. In addition, this is a great way to honor Paul and Ron for their dedication to our field program! See page 27 for information about contributing to this important scholarship fund.



Bryanna Rayhorn

#### Evan Weber

#### GEOLOGY MAJOR RECEIVES UNIVERSITY-WIDE SCHOLARSHIP

Once again, this year a Geology major was awarded a prestigious university-wide scholarship. Michaela Schnell (Shawano) received the \$2800 Michael F. Fredrich Scholarship. Our students have been highly competitive in these university scholarships, and this is evidence of the highquality students in our program!



Michaela Schnell

# **2022 GEOLOGY BANQUET**

The spring Geology banquet is a fun time to eat a fine meal, present awards, recognize graduating seniors, say goodbye to classmates after another year, and reminisce about field trips gone by! This year 70 students, family members, and faculty assembled on May 14, 2022.











Band of brothers with the same tailor!





#### STUDENT RESEARCH DAY – SPRING 2022

Mark Fiore, Henry Scamehorn, Ben Young, Cassidy Reitz, Tucker Holloway, Braedon Laundrie with Scott Clark, "Disposing of Myths Surrounding Lunchtime Waste."

Henry Scamehorn, Mark Fiore, Tucker Holloway, Braedon Laundrie, Cassidy Reitz, Ben Young with Scott Clark, "Analysis of Lunchtime Waste-Sorting Habits: The BluBox Sustainability Initiative at UW- Eau Claire."

#### Jacob Huffaker, Michaela Schnell, Kalie Ress with Phillip Ihinger,

"Revisiting the Magmatic Evolution of the Sept Iles Layered Mafic Intrusion, Quebec Canada."

Kalie Ress, Jacob Huffaker, Michaela Schnell with Phillip Ihinger,

"Liquid Immiscibility and Sequential Extraction in the Main and Upper Zones of the Bushveld Layered Mafic Intrusion, RSA."

#### Sara Hanel with Robert Hooper,

"Mineralogy and Petrology of Rareelement Pegmatites in the Eau Claire River Complex."

#### Tara Lemke with Robert Lodge,

"Petrographic and Geochemical Analysis on Alteration Assemblages at Flambeau Zn-Cu Deposit, Rusk Co., WI." Also presented at the WISA Annual Technical Seminar, February 16, 2022, Eau Claire, WI.

**Evan Weber with Robert Lodge,** "U/ Pb Geochronology of the Pembine-Wausau terrane of the Proterozoic Penokean Orogen, Wisconsin."

Shelby Short with Robert Lodge, "Comparing Mafic Chemostratigraphy at the Sturgeon Lake and Shebandowan Greenstone Belts." Also presented at the WISA Annual Technical Seminar, February 16, 2022, Eau Claire, WI.

#### **Elinor Davis with Robert Lodge,** "Hydrothermal Paragenesis of the

Lynne Zn-Pb-Cu Deposit."

#### Lillian Glodowski with Robert

**Lodge,** "Petrogenesis of the volcanic and intrusive rocks of the Lynne Zn-Cu-Pb Deposit, Oneida Co., Wisconsin." Also presented at the WISA Annual Technical Seminar, February 16, 2022, Eau Claire, WI.

#### Angy Rafferty with Sarah Vitale,

"Three-Dimensional Mapping of Eau Claire County Aquifers." Gillian Streeter, Mark Fiore, Braedon Laundrie, Geni Streble, Kalvin Watt, Ethan Ahlbrecht, Cassidy Reitz, Nicole Clayton (WDNR) with Sarah Vitale, "Measuring Stream Baseflow Conditions in West-Central Wisconsin." Also presented at the Wisconsin Section American Water Resources Association meeting, March 10-11, 2022 (virtual).

Madeline Palubicki, Bryanna Rayhorn, Jacob Huffaker, Anna Baker with Sarah Vitale and J. Brian Mahoney, "Constraining potential phosphorus sources in a stratified drainage lake in western Wisconsin." Also presented at the Wisconsin Section American Water Resources Association meeting, March 10-11, 2022 (virtual) and Research in the Rotunda, March 9, 2022, Madison, WI.

Bryanna Rayhorn, Madeline Marchiafava with Sarah Vitale, J. Brian Mahoney and Laurel McEllistrem, "Spatial and Temporal Variations in Regional Surface Water and Groundwater Chemistry in Western Wisconsin." Also presented at the Wisconsin Section American Water Resources Association meeting, March 10-11, 2022 (virtual).





# **INTERNSHIP CORNER**

One goal of the Responsible Mining Initiative is to provide practical work experiences for our undergraduate students through paid internships. Our efforts to enhance internship opportunities have been a resounding success. Three students continued their summer 2021 internships part time into the academic year. During the past academic year and this summer, 21 students have had/will have paid internships with metallic and non-metallic mining companies, environmental consulting firms, and governmental agencies and earn ~\$216,000 in wages. This large number of paid internships is *highly unusual* for an undergraduate geology program.



CASS CTY HIGHWAY DEPT. Walker, MN Shelby Short |

Survey/GIS Tech





WISCONSIN DOT Eau Claire, WI

Nathan Raymaker | Environmental Intern





*WISCONSIN DOT* Eau Claire, WI **Rachel Slonac** | Geotechnical Lab Intern





SOUTH DAKOTA DENR Vermillion, SD Kalvin Watt | Geology and Drilling Assistant Intern

#### SOUTH DAKOTA DEPARTMENT OF ENVIRONMENT & NATURAL RESOURCES



INTERTEK PSI Chippewa Falls, WI Lina Curcio |

Geotechnical Intern





INTERTEK PSI Chippewa Falls, WI Kurt Ohlhues |

Geotechnical Intern





AMERICAN EXCELSIOR CO

Rice Lake, WI **Mark Fiori** | Environmental intern





RAMBOLL Milwaukee, WI Braedon Laundrie | Environmental intern

INTERTEK PSI

Kaitlyn Field

Chippewa Falls, WI

Geotechnical Intern

intertek





LOST RIVER MINING Alaska Justin Wuske | Mineral Exploration Intern

Lost River Mining



BLACK BUTTE COPPER Montana Everett LaBudda | Mineral Exploration Intern





ALASKA EARTH SCIENCES Alaska Bryanna Rayhorn | Mineral Exploration Intern





ALASKA EARTH SCIENCES Alaska Lindsey Henricks | Mineral Exploration Intern





*EMX* Idaho **Adam Vanderkin** | Mineral Exploration Intern





CGI Nye, MT **Kaine Johnson** | Mineral Exploration Intern

### Childs Geoscience Inc.



Nye, MT Lilly Glodowski | Mineral Exploration Intern





*UW-OSHKOSH* Oshkosh, WI

Nicole Cochems | Environmental Intern





*UW-OSHKOSH* Oshkosh, WI

**Michaela Schnell** | Environmental Intern





UW-OSHKOSH

Oshkosh, WI

Ethan Ahlbrecht | Environmental Intern





UW-OSHKOSH

Oshkosh, WI **Ben Young** |

Environmental Intern





*TECK* Red Dog Mine, AK

Bridget Russell | Metallic Mining Intern



## **CONGRATS, GRADS!**



Fall/Spring/summer 2021-22 Geology graduates at spring geology banquet.

### **RECENT GEOLOGY GRADUATES**

Fall 2021, Spring & Summer 2022 (unofficial list)

ELINOR DAVIS
HUNTER DELIKOWSKI
EMMA DIMICK (CERTIFICATE)
MALACHI DORNFELD
MARK FIORE
MALLORY GROSS
SARA HANEL
JACOB HUFFAKER
BRAEDON LAUNDRIE
TARA LEMKE

MATTEA LINBERG DIEGO LOWNEY (CERTIFICATE) MADELINE MARCHIAFAVA TREVOR NELSON MADDIE PALUBICKI ANGY RAFFERTY NATHAN RAYMAKER BRIDGET RUSSELL LINNEA RUSTAD HENRY SCAMEHORN DANIEL SHAKKED SHELBY SHORT GRAYDON SKOK RENEE SLETTEN RACHEL SLONAC GILLIAN STREETER SABRINA WAGNER DYLAN WHITE (CERTIFICATE) ASHLEY ZUGE

# **CONGRATULATIONS, CLASS OF 2021-22!**

Please stay in touch! Make sure we have your email address.

## FACULTY AND STAFF NEWS

#### SCOTT CLARK, Professor

#### clarksco@uwec.edu

Hello everyone. The academic year has wrapped up and summer tasks have begun. My teaching load was unchanged from the last few years: Earth Science, Water Resources, and Computers in Geology in the fall, Field Geology I in January, and then more Earth Science and Water Resources in the spring. I enjoy teaching all of these courses, and I am looking forward to next year.

With my research group, I continue to study sustainability habits and look for ways to encourage improvement of waste-disposal habits here on campus. Beyond studying students' behaviors when they are discarding waste, and collaborating with other campus sustainability stakeholders on a range of initiatives, a highlight of the year was the research team's production of two short sustainability videos. The first iteration of the Disposing of Myths Surrounding Lunchtime Waste video was made last year by Mark Fiore ('22) and Katrina Kawak ('21). This year, Mark led the reconceptualization, rewriting, production, and directing of that video with the other team members stepping up as actors. I encourage you to watch **Disposing of Myths Surrounding** Lunchtime Waste https://www.youtube. com/watch?v=gNHP7OVaUpw&t=3s and Interviews with UW-Eau Claire Sustainability Stakeholders https://www. youtube.com/watch?v=OwUqgY4f\_0o. Another group member, Harry Scamehorn ('22), will begin a graduate program at UW-La Crosse that will bring him back to campus next year as a Sustainability Intern-very good news for on-campus sustainability efforts. Mark, Henry, and everyone else in the group did a great job this year.

On the home front, Francine continues to be the secretary at Meadowview Elementary with the best part of her job being her interactions with the students. This coming fall, our daughter Patricia will be starting her senior year at Memorial High School – Go Abes! Wishing you all a healthy and rewarding year.

#### **ROBERT HOOPER**, Professor

#### hooperrl@uwec.edu

I send my greetings to all departmental

alumni and friends. This year I successfully completed my 39th year of teaching at UWEC, the last two of which have been tainted by the Covid epidemic. Teaching over the last two years has been a challenge with the ever-changing Covid restrictions and classroom instruction rules changing on a frequent basis. I continue to teach the Mineralogy and Petrology course (Min/Pet I) which serves as the gateway for the major, aqueous geochemistry and the introductory physical geology course. I have also been helping Scott Clark with the Field Geology course in New Mexico every January. I have been busy mentoring one student, Sara Hanel, on a research project involving the mineralogy of the rare-element pegmatites of the Eau Claire River Complex, and Sara has done an amazing job on the complex mineralogy of these rocks. Sara is starting a PhD program at the Univ. of Minnesota-Twin Cities this fall working with the metamorphic petrology and structural geology research group. I am very pleased to have mentored Sara while she was here at Eau Claire.

Travel has largely been restricted to field trips and the NM field course due to the pandemic. Ginger and I have also made several trips to visit the grandchildren that live in New Jersey, including spending some time on the south Jersey Shore, which is actually a very nice (although very expensive) beach. I am eager to get back to international travel and am looking forward to next year being more normal. It has been great to see some alumni come back to Eau Claire this year, and it would be great if more alumni and friends could visit next year. Be sure to stop in the department whenever you visit Wisconsin.

#### PHILLIP IHINGER, Professor

#### ihinger@uwec.edu

Summer 2022 has finally arrived, and yes, it's been a very busy time in our department. I urge all of you to read the Letter from the Chair on page 1 to catch a glimpse of everything happening in our Phillips hallway this year. This year the Covid pandemic continued to dominate the tone around the university, but we've continued to move forward with new department initiatives. Meanwhile, I want to catch you up on some other aspects of my professional and personal life. In addition to being Chair, I taught three sections of my Introduction to Geology course in the fall and successfully recruited eight students into next fall's Min-Pet I class -- a record for me. I am a big fan of this incoming cohort, and I have great hopes for all of them and what they hold for the future of our program. In addition, I taught our 1-credit Introduction to the Geology Major course, the MinPet II course, and the Field Geology II course in Montana with Rob Lodge. I will miss teaching these courses while taking my sabbatical next year!

This past year, my research group made great progress toward our understanding of the magmatic evolution of basalt and the origin of granite. With Kalie Ress, Jake Huffaker, and Michaela Schnell as collaborating authors, we have pieced together the evolution of the Bushveld layered mafic intrusion in southern Africa. This intrusive body is the crystallization product of Earth's largest single magma chamber, and it is the source of 80% of the world's platinum deposits, as well as a major source of vanadium, titanium, chromium, tin, and other platinum group elements. We have also extended our novel analysis to Earth's third-largest magmatic intrusion: the Sept lles intrusion of Quebec, Canada, where we observe a similar crystallization/magma segregation trajectory. Our results will be written up for publication during my upcoming sabbatical, and I am eager to begin this process. My dear partner, Dr. Patricia Turner in the Department of History, will also be taking a sabbatical next year, and we both have ambitious plans for publishing our scholarly work. My three girls continue to make me proud as they proceed along their respective life journeys, and our two-year old doggie, Kaia, keeps me young and fit as we continue to explore the numerous hiking trails in the Chippewa Valley. Best wishes to all of you, and I hope to hear from you soon.

#### ROBERT LODGE, Associate Professor

#### lodgerw@uwec.edu

It has been an interesting year full of ups and downs. It seems as if the pandemic has almost released its grip on the way things operate around here, and things have slowly returned to normal. Teaching in person is WAY better and more effective than virtual with or without masks (up!). I also had my first sabbatical during the fall semester (big up!) and wrote a paper on the Flambeau Cu-Au-Zn deposit with Blugold alum Zach Zens ('16) and Regan Jacobson ('19); it has been accepted pending revision to the journal Economic Geology. I also continued collaborations with colleagues in the Metal Earth Program and have co-authored three more papers (see below). Once I returned from sabbatical (down!), we navigated a gauntlet to change our department name to Geology and Environmental Science (up!), but learned Lori Snyder is retiring (BIG down!). Lori has been inspirational for my career as a teacher. I can't thank her enough for helping me navigate my early days at the university. Enjoy your retirement, Lori!

My research program got a major injection from an exceptional group of students. Lilly Glodowski ('23) and Elinor Davis ('22) continued to master the 2000' of core from the Lynne Zn-Cu-Pb deposit near Rhinelander before we donated the core to the WGNHS. We have a much better understanding of the volcanic and hydrothermal history of this deposit and look forward to showing off our work at upcoming conferences. Shelby Short ('22) compiled and compared mafic rock chemostratigraphy in two different greenstone belts and showed important variations in Archean magmatic and tectonic processes. Tara Lemke ('22) completed a thorough characterization of altered rocks at the Flambeau deposit and had some important revelations on the style of ore deposition. Finally, Evan Weber ('23) completed U/Pb geochronology of several locations around Wisconsin (including Big Falls) and we are beginning to re-write the geologic history of the state. We look forward to kayaking the Eau Claire River this summer to do more mapping and sampling of these amazing Precambrian rocks. Congrats to the graduating seniors in the group (Tara, Shelby, and Elinor)! They are all going to grad school and will be great ambassadors for UWEC.

Did I mention it was nice to teach inperson again? It was amazing to see our students back in the lab without room capacity restrictions and getting the full UWEC experience. My Structural Geology class endured snow and freezing temperatures at Big Falls followed by beautiful, warm, and sunny weather the following week at Baraboo. We were primed to go on our northern Minnesota trip, but then the students started coming down with COVID (I did say things were almost better) and we had to cancel the trip. Nonetheless, the students learned a lot and they were ready for Field Camp II. My Physical Geology class was an entertaining group and it was much fun getting them excited about geology. I always enjoy teaching people about the geosciences, and Physical Geology is a rewarding experience for me.

On a personal note, I am breaking with a newsletter tradition -- we do NOT have a new baby announcement this year! The Lodge family has plateaued at 5(!!) energetic and rambunctious kids. Hillary and Claudia enjoyed being back in school full time. My sabbatical allowed me to spend some precious time with my youngest kids (Meredith, Bruce, and James) during "work" days. My wonderful wife, Cassie, is the glue of our household and it is amazing to watch her enrich their lives. International travel restrictions have eased, and we started getting family visitors from Canada. Things are feeling back to normal, or at least as normal as it can be with five kids.

Ma, C, Marsh, JH, Lodge, RWD, Sherlock, R (2022, in-press). Crustal growth/reworking and the stabilization of the Superior craton: Insights from a Neoarchean gneiss complex of the Winnipeg River terrane. Geological Society of America Bulletin; https://doi.org/10.1130/B36441.1

Mathieu, L, Mole, D, Toth, Z, Rubingh, K, Haugaard, R, White, S, Ma, C, Frieman, B. Lodge, RWD, Sherlock, R, Lafrance, B. (2022, in-press). The Neoarchean, a turning point for geodynamic and magmatic processes within the Superior craton? In Whitmeyer, SJ, Williams, ML, Kellett, DA, Tikoff, B. (eds). Laurentia, Turning Points in the Evolution of a Continent. Geological Society of America, Memoirs. Vol 220. DOI: https://doi.org/10.1130/2022.1220(03)

Ma, C, Naghizadeh, M, Adetunji, A, Lodge, RWD, Snyder, D, Sherlock, R (2021) Imaging Neoarchean crustal structures: An integrated seismicmagnetotelluric-aeromagnetic-geologic study in the western Wabigoon and Winniped River terranes, Superior Craton. Precambrian Research, 364. Doi: 10.1016/j. precamres.2021.106339

#### J. BRIAN MAHONEY, Professor

#### mahonej@uwec.edu

The 2021/2022 academic year came rolling to a close in mid-May, marking the end of the second year of the pandemic. It has been a rough slog that has changed many plans and directions as it rolled through both the university and industry. We seem to be realizing this is the new normal, but as one who has taken seven Covid tests in the past month for different companies and countries, the new normal cannot take hold soon enough!

The last year has nonetheless been a banner year, filled with action, activities, and advancements! Spent the summer of 2021 working on a helicopter-supported regional bedrock mapping project in the Schist Belt of the southern Brooks Range of northern Alaska. The Brooks Range is an incredible place, desolate by even Alaska standards, with no roads, infrastructure, or amenities - nothing but endless mountains, huge grizzlies, and enormous moose. The mapping area is ~100 miles long, ~30 miles wide, and represents the biggest mineral exploration program in Alaska. A daunting task, to say the least. The mapping was conducted at a very rapid pace, as we had an enormous uncharted territory to cover. Both Lori Snyder and Geoff Pignotta joined the mapping team for several weeks during the summer. At the end of the field season, I returned to Eau Claire with >200 petrographic thin sections, dozens of geochronology samples, and all the map data to compile. Eyes bigger than the stomach would be appropriate! We assembled a crack team of six (6) undergraduates, Lori Snyder, and myself, and tackled the enormous petrology and geochronology sample analysis. It took months, but by early May we had developed the most detailed database ever compiled in the Brooks Range, which was no small feat!! I am currently addressing you from the land of the Midnight Sun at the start of another twomonth season extending the map area and adding some much-needed detail in critical areas. Should be a great summer!

Lori and I took a few weeks off to visit Hawaii over the Xmas holiday. We spent most of the time on Maui, focusing our efforts on snorkeling and whale watching. Had an amazing experience in a Zodiac with three humpbacks who decided that we deserved some serious investigation, as they spent thirty minutes circling the boat, diving beneath us on their backs, and surfacing close enough to touch! Amazing! The highlight of the trip came during a short visit to the island of Hawaii, where at 4:30 a.m. we hiked into the Halema'uma'u crater within the Kīlauea caldera. The experience was simply breathtaking, and we sat mezmerized for hours until the sun rose and the crater became obscured by fog.

The final highlight of the year was a return to the Expedition Team aboard the Seaborne Odyssey where I spent several weeks cruising the fjords of British Columbia and Alaska. My role on the **Expedition Team focusses on taking guests** out to explore the coast by Zodiac and kayak, guiding hikes into the old-growth rainforest, giving lectures on the tectonic evolution of the Cordillera, and interacting with the guests on different topics. The job is actually guite challenging and invigorating! These voyages were guite special as Lori Snyder joined me on her maiden voyage with the Expedition Team! If everything works out, Lori and I will be spending a couple of months a year cruising Alaska, Antarctica, the South Pacific, New Zealand, and Australia!



#### LORI SNYDER, Senior Lecturer

#### snyderld@uwec.edu

Greetings! I hope this newsletter finds you and your loved ones healthy and thriving. As you may have heard, this was my final teaching year at UWEC. Thankfully, it was a good one! Though masking remained in place for most of the year, we increased most classrooms and field trip vehicles to capacity. I taught my normal complement of National Parks and Environmental Geology and also participated in the Freshwater Collaborative offering. Accompanying high-school students on a camping trip was a real treat! Clear skies and the Perseid meteor shower made for a special trip.

Personal travel was also back, with a trip to Hawaii in January. Seeing and learning

about the amazing humpback whales and experiencing the impressive eruption of Kilauea were especially memorable.

During my 26 years at UW-Eau Claire, I had the privilege of interacting with many students, teaching an estimated 10,000 in introductory courses alone. My most gratifying connections, however, were with Geology majors. I had wonderful and meaningful experiences in the classroom and in the field with so many warm and talented individuals. I am forever grateful that I was able to be a part of your lives and you of mine. As I leave the Department of Geology and **Environmental Science in extremely** capable hands, I wish all of you the best. Thank you for your caring and support along my life journey.

### LORILIE STEINKE, Academic Department Associate

#### steinklm@uwec.edu

Greetings. January marked my 32nd year at UWEC! The department continues to keep me busy with field trips, expense reports and the general chaos associated with a hands-on learning environment. In August, our family welcomed my second granddaughter. I adore being a grandmother and playing with Opal and Amiya any chance I can. Remember to stay in touch with the department either through the Geology Facebook page or by sending me emails--I always love hearing from our alumni.

#### KENT SYVERSON, Professor

#### syverskm@uwec.edu

I hope you are doing well. I have now completed my 30th year in the department. Although we wore masks 75% of the academic year, face-to-face instruction felt normal in a strange way! By the time the first week of the fall semester was over, I already had more meaningful student interactions than in a full semester during remote instruction. I taught Oceanography, Geomorphology, and the Responsible Mining Seminar during the academic year and enjoyed my interactions with students. I also enjoyed visiting with former students who came to my office.

I found many things to keep me busy. My office hours were once again filled with many Oceanography students seeking to

be quizzed about course content - I always enjoy those times as a way to connect with my students. Our NSF funding proposal to diversify the geology student body at UWEC was funded, so I will be fundraising to support future activities. I have ramped up my part-time development officer activities with the UWEC Foundation to help Chemistry/Biochemistry, Biology, and Geology raise funds for student and faculty initiatives. It has been exciting to see people contribute large and small gifts to enhance educational experiences for Blugolds (see separate articles in this newsletter). In addition, two students and I attended the Petroleum Connection frac sand conference in Grapevine, TX, in Sept. 2021. It felt good to travel once again!

I continue to work with a team of glacial geologists to create a 1:500,000-scale surficial geology map for the State of Wisconsin. This summer two students and I will study a new Ice Age Trail segment in the Blue Hills and create interpretive materials for the Ice Age Trail Alliance. In addition, I will be writing three chapters about the landforms of north-central Wisconsin for a book about the landforms of Wisconsin.

Life at home is going well. Lila and I continue to read books out loud to each other, and each evening we ride our bikes for five miles. My e-bike now has 10,900 miles on it, and riding the bike is my most enjoyable pastime. My mom moved into an assisted living facility in the Twin Cities, so my siblings, kids, nieces and nephews, Lila, and I have been cleaning out the house and preparing it for sale – a big job.

Please visit us on campus!

#### SARAH VITALE, Assistant Professor

#### vitalesa@uwec.edu

It's been a great year in the classroom! Things finally felt more or less "back to normal" since the start of the pandemic. I taught Environmental Geology and Hydro 1 and 2 this year, but also taught a new course called Understanding Earth's Environment (GEOL 204). The course is a large lecture-style course for non-majors, broadly covering environmental science as it relates to geology. It was fun for me to expand beyond the content I teach in other courses.

I continued working with students on research projects, and submitted several grant proposals for continuing waterquality research and to run freshwater science field courses for university and high school students. I also served on the College of Arts and Science Equity, Diversity, and Inclusivity Committee. Our new College Dean has shown a significant interest in both EDI issues and environmental science education, which I am glad to see centralized in his efforts.

Immediately after the spring semester ended, I facilitated our very first Advanced Freshwater Science Field Course, funded through the Freshwater Collaborative of Wisconsin. The course was a teaching collaboration between UWEC (Geology, Geography, Biology), UW-Stout, UW-River Falls, and UW-Oshkosh, and enrolled university students from UWEC and UWRF. It was an amazing experience for all involved. I shared a few photos on the Geology Department's Facebook page, but several more are on my Twitter account (@ svitale\_hydro).

My kids are now 7, 3, and 1.5, and we're enjoying the fun activities that come with summer. We'll spend a week in Colorado this summer visiting family.

Lastly, congratulations to all our graduating Geology majors! Students are the best part of this job, and we wish you the best of luck in your future ventures. We love hearing from our alumni, so stay in touch!

#### **EMERITI FACULTY NEWS**

**KAREN HAVHOLM**, Assistant Vice Chancellor of Research, Emeritus

#### havholkg@uwec.edu

Hello everyone. This has been a year with some fun travel. Glenn and I went to Los Angeles to visit my brother and some of his family, and then a trip to Death Valley with a 93-year-old friend who wanted to learn more about DV geology. I reached out to Marli Miller to learn where best to go, and she steered our plan. We had a great trip.

Our more adventurous trip was to Yellowknife, Northwest Territories, Canada, where our daughter Merilie and her husband now make their home. She works for the Geological Survey of NWT, and he works (remotely) for a consulting company modeling ore-bodies. Only a few degrees south of the Arctic Circle, it is at the end of the road. Literally. Highlights included a tour of the legislature, a visit to the cultural museum, and a tour of Buffalo Joe's airline hangar (for anyone who watched Ice Pilots). That is a busy place, as villages beyond Yellowknife are supplied primarily by air, especially when the ice roads are closed in summer. We spent much time looking out the window at their fabulous view of the Great Slave Lake and observing people coming and going from their houseboats frozen into the lake; this gets trickier in spring as the edges of the lake melt. Initially they just walk across the ice carrying a canoe paddle to catch themselves in case they fall through the ice. Later they drag their canoes with them across the ice and paddle part of the way. Fun for a young person, perhaps. We hope to go back in March to catch the winter festival and aurora borealis.

Got to visit in person with former research students Kris Weaver and Beth Fisher this year; that was a treat. It was also fun to reminisce with Jenna Borski about rooming together at a conference back in the day, and to compare notes on some of the "special" experiences of female geoscientists. Looking forward to reading everyone's news!

#### Paul Myers, Professor Emeritus

#### paul.myers600@gmail.com

My wife, Welthy, and I divide our time between our summer home in Peru, VT, and our condo in Boquete, Panama. This year (10/21-5/22) was especially challenging because of severe COVID restrictions, which delayed the field trip season until April. Nevertheless, since morale and interest were high, I was able to squeeze 21 field trips into April and May.

The Holocene history of western Panama is unique and challenging - as exemplified by pyroclastic flows that reached the Pacific Ocean, incorporating marine and fluvial sediments enroute; peridotitic dike swarms; and a spectacular roadcut exposing a giant debris avalanche that flowed at least 25 km from Volcan Baru and has a thickness of approximately 200 m. It's easy to see why people living on Volcan Baru are "interested" in its history.

The future of geological studies in the Boquete area is in question, owing to the advanced age and declining agility of its chief "investigator"- me. That is why I invite any faculty and/or students interested in the amazing igneous history of this area to come and study it with me. Great dissertation area. The climate is great year-round.

Welthy and I will return to Boquete next October and invite anyone interested in our geology to come for a visit. We'll put you up. Best wishes to you all



Paul Myers at Volcan Baru in Panama, spring 2022.

The Holocene history of western Panama is unique and challenging Paul Myers, Professor Emeritus

#### John Tinker, Professor Emeritus

#### tinkerjr@triwest.net

Hello to all present and former geology students. I miss teaching and interacting with you. It was an honor to be invited to the UWEC President's Award ceremony for Jennifer Tobias Borski. Jennifer more than deserved the award. I spoke with Jennifer and her family at the awards dinner. Jennifer and her family are very special. At the award ceremony, I also spoke with Kent Syverson, Brian Mahoney, and Lori Snyder. It was fun to be back on the UWEC campus and to interact with the Geology faculty.

Christine and I enjoyed our 55th wedding anniversary this year. Christine and I still talk with each other and we are very happy. We first met each other at the University of North Dakota in Grand Forks, ND. She helped me survive the flatness of Glacial Lake Agassiz, horizontal snirt (wind-blown snow and dirt), and weeks of winter's subzero temperatures.

Enjoy the coming year, work hard, stay healthy, enjoy the geology of your area, and keep smiling. I send you my best regards.

## **ALUMNI NEWS**

Matthew Bachman '21. Matthew is an Environmental Health and Safety Coordinator with Covia in Menomonie.

Tanner Bakke '11. Tanner is an Environmental Analyst III at Xcel Energy in the Minneapolis/St. Paul.

**Brandon Barber '03.** Brandon is a Physical Therapist at SSM Health in North Freedom, WI.

**Ryan Bartingale '06.** Ryan is a resident engineer with Haile Gold and is living in North Carolina.

Karl Beaster '01. Karl writes, "I'm still enjoying my life, living in Duluth and taking advantage of the nearby recreation in this part of MN--fishing, biking, camping, and BWCA trips. I'm still employed at Enbridge working on groundwater remediation projects. Sarah and I are starting to tour colleges with the twins who are juniors this year. Can't believe it but here we go! They will be looking at several UW campuses soon including UWEC! I'm trying not to be biased :) Actually looking forward to this next chapter of life. Our youngest will be a freshman in high school next year." karlbeaster@gmail.com.

Kris Benusa '12. Kris is a manager at Environmental Studies at Twin Metals Minnesota, LLC in St. Paul, MN. He writes, "Things have been a little crazy at the end of the year here both for work and family, but things are going well! My wife and I welcomed our second son in September. Working for Twin Metals continues to challenge and provide great opportunities for me as we navigate the environmental review processes for federal and state agencies."

Luke Beranek '03. Luke writes, "I've enjoyed reading the Dig It newsletter each year and seeing how the department has continued to provide a solid education for students. I'm currently an Associate Professor in the Department of Earth Sciences at Memorial University in St. John's, Canada. I've been lucky to live and work in some amazing places since leaving Eau Claire (Idaho, British Columbia, Sweden), but the geology of Newfoundland is top notch and a great place for teaching and research. I've recently supervised two UWEC Geology alumni, Alex Hutter and Adam Wiest, at Memorial during their master's thesis projects. It's been a blast to work with UWEC graduates - keep them coming! On the home front, my partner Inês (a geologist) and I have a four-year old daughter, one-year old son, and a 10-year-old cat Cod." Iberanek@mun.ca.

Audrey (Mohr) Boerner '11. Audrey writes, "I continue to work for the Eau Claire City-County Health Department in a delightful mixture of COVID response, private well permitting, and poultry licensure. Can't make this stuff up! Our family is so happy to have settled in Eau Claire for the foreseeable future and we're looking forward to a summer of bikes, trikes, and camping with our 3-yr old son. Aboerner2@gmail.com.

Jennifer (Tobias) Borski '96. Jennifer writes, "In Dec. 2021, I enjoyed visiting the Geology Department and touring multiple labs, including the Dr. John R. Tinker, Jr. Hydrogeology Lab - the very room where I was first introduced to a career as a Hydrogeologist in ~1993. The Geology Department remains a leader in undergraduate research and is a thriving example of UWEC's motto, "Excellence". The best part was seeing current and retired professors who had such an impact on my life, meeting new Geology professors, and visiting with Blugold students ready to head out into the world. Being back in Phillips Hall was motivating – I could feel the buzz of new ideas!

At work, I wear multiple hats. I've been a WDNR Hydrogeologist for 23 years, and I've been the WDNR Vapor Intrusion Team Leader for the state since 2019. Every day I work with my Vapor Intrusion team, talented WDNR hydrogeologists (some are fellow Blugolds!), and State Health Dept. toxicologists on contaminated sites. Together we tackle the problem of contaminated vapors (primarily from chlorinated solvent discharges) entering occupied spaces and affecting the health of the occupants.

Outside of work, my husband and I continue to cash crop farm "on the side" while he also maintains his job at the Appleton Fire Department. We both dedicate much of our time to our local Plan Commission (me) & Volunteer Fire Dept (Jerry). Our teenagers are enjoying high school best they can during a pandemic, which means our parenting skills are constantly being re-evaluated, and we are routinely humbled by how much we apparently don't know. Life is not boring – just the way it should be!" jennifer.borski@wisconsin.gov.

Jody (Brandrup) Dahlman '00. Jody is the Associate Director of Marketing at Philips (a large hospital and health care technology company) in St. Paul.

**Greg Burgess '15.** Greg is a Lab Technician II with the soils/pavement division of AET in the Twin Cities.

**Nicole Butkus '11.** Nicole recently started a new position as Geologist II with Environmental Design International in Chicago, IL.

**Mike Chang '10.** Mike is a Wastewater and Water Resources Specialist with the WDNR in Eau Claire.

Andy Eddy '04. Andy writes, "I have been at the MPCA for 15 years, and am currently working in the Technical Services Unit. I am in the Remediation Division and lead projects in the Superfund, Closed Landfill, and Integrated Remediation programs. I have two young sons (1.5 and 4.5) and live with my wife in Lakeville, MN." Andrew.eddy@state.mn.us

**Nathan Eisenzimmer '21.** Nathan is a recruiter for Aerotek in Mendota Heights, MN.

**Logan Farb '16.** Logan is a Junior Associate, Production Assistant, and Lab Technician at Redflint in Eau Claire.

**Michelle Forgette '08.** Michelle is a Senior Resource Geologist at RPM Global Beaconsfield in Western Australia.

Scott Galetka '98. Scott writes, "This will be my

15th year at Bayfield County as the Land Record Administrator. We recently provided edited GIS data of well log data for a hydro atlas. Next on our list will be providing data to the WGNHS for a study of artesian wells in the county and conducting a QLI Lidar flight this spring. My hope is to quantify the amount of soil erosion using three different years of LIDAR, focusing on Lake Superior bluffs. Most recently I have been developing a UAV/Drone program using the technology for search & rescue, invasive species, tree seed planting counts, non-metallic mine volumes, topography surveys and 3-D models of buildings. It can't be all about work... save the best for last, recently took a spring break with my son who is turning 16! We did some geocaching in Door County, Racine, Madison, and LaCrosse. Geocaching leads to hidden "gems" in any community--great opportunity to bond." scott.galetka@bayfieldcounty.wi.gov.

**Lynn Galston '08.** Lynn has been promoted to Task Lead - Enterprise Data Management at Equinor, Stavanger, Rogaland, Norway. She has experience coordinating data needs within the oil and gas industry.

**Sarah Gordee '03.** Sarah is an exploration geologist with New World Resources in AZ.

**Madelynn Gorg '20.** Madelynn is an Environmental Scientist at American Engineering Testing (AET) in St. Paul.

**Bryan Hardel '09.** Bryan has been promoted to Operations Manager at Big Rock Exploration in Minneapolis. He writes, "I'm helping run a three-rig copper exploration program near Tucson, so definitely warmer here!"

Franklin Heaton '14. Franklin is a Project Manager at Detection & Measurement Systems. He writes, "Things are going well. Living in Houston (Texas since graduation). Work as a team lead for a sales company marketing special hazards safety equipment. Most of my days are working with Process/Electrical/Chemical engineers. Cannot complain too much!"

David Hodek '95. David writes, "This year has been a bit of a return to normal for us at least. I've been living at home again since November after a year and a half away, so that's been an adjustment for everyone, but it's certainly been a good thing. The kids are back in-person at school and work has been busy, but I'm enjoying some new benefits like alternative work schedules and hybrid locations. Regardless, time goes by so fast that in two days I'll be taking my oldest daughter to a UWEC campus tour. I'm just hoping I don't get lost (and that I don't have any outstanding parking tickets)!" Dave.Hodek@enbridge.com.

Andie (Andrea) Holm '14. Andie reports, "I work as a Materials Specialist in the Standards Division in the National Organic Program at the USDA. I review technical reports on allowed synthetic and prohibited natural substances in organic agriculture as well as petitioned substances. I manage the petition process to modify the organic regulations. I'm happily working remotely from Eau Claire!" andie.hom@gmail.com.

**Dirk Holman '84.** Dirk is a Sr. Project/ Program Manager at GreenLeaf Consulting in the Twin Cities area.

**Lucy Horst '18.** Lucy is an underground geologist with Nevada Gold Mines in Winnemucca, NV.

Matt Hostak '89. Matt writes, "It's been a year full of a LOT of new experiences, many of the medical variety. I have adopted a philosophy of embracing the experiences as "silver linings", setting intentions for positive outcomes, and enjoying the results. As a result, I'm feeling good and doing well. Still "retired", but staying busy with volunteer work. I'm looking forward to another exciting season of "privy digging" for bottles. I hope to do more treasure hunting via SCUBA diving in local waters." mlhostak@yahoo.com.

**Will Howard '18.** Will is a Production Geologist, Rio Tinto Kennecott.

**Cameron Hughes '12.** Cameron is a Geoscientist at ExxonMobil in the Houston, TX, area. Cameron writes, "I'm still doing a lot of structure work, but I've also taken to seal evaluation--capillary seal in particular--and reservoir connectivity analysis. I've been much more interested in stratigraphy and hydrology concepts than I ever anticipated. 2020 and thus far 2021 have been something else. I've personally fared well (got married in November!) but feel for those who have been hit hard by COVID and myriad climate-related events."

Breck Johnson '04. Breck writes, "My wife Erin (UWEC '00), daughter, and son moved to Littleton, CO, in 2018. After many years living and working in The Woodlands, TX, for Anadarko Petroleum as an exploration geologist working onshore US, Gulf of Mexico, and International Deepwater projects, I was offered a Rockies Exploration Manager role with Anadarko in Denver. A year later, Anadarko was acquired by Occidental Petroleum (Oxy) creating many changes and new opportunities. I now lead several Low-Carbon initiatives for Oxy throughout the Rockies region including Carbon Capture, Utilization, and Sequestration (CCUS) projects, geothermal, strategic mineral exploration, and others. The Johnson family enjoys getting back to MN & WI each summer and some holidays to visit family and reconnect with their Midwestern roots. Please reach out if you are ever in the Denver area." Breck\_Johnson@oxy.com.

**Tony Jones '92.** Tony writes, "I have had my Wisconsin Professional Land Surveyor license for twenty-two years, and I've run a private land surveying business for 15 yrs in Rhinelander (A.R. Jones Land Surveying). I focus on legal property boundary retracements and small land subdivisions. For the last 10 years, I have also been employed by the Vilas County Land Information Office as a GIS Specialist." arjsurvey@charter.net.

**Salvatore Kass '20.** Salvatore reports, "I am a Junior Construction Project Manager for Blain's Farm and Fleet in Janesville, WI, while also pursuing an MBA in Finance at Concordia University of Wisconsin in Mequon."

Bridget Kelly '09. Bridget is a Waste and

Materials Management-South Central Region Field Supervisor for the WDNR in Madison.

**Sarah Kintner '16.** Sarah writes, "After earning my MS in 2019, I moved to Seattle & worked as a remediation geologist at AECOM for two years. Robin and I moved to Helena, MT, in March 2021. We're enjoying the "settling down" process - house, chickens, gardens, and a garage full of bikes. I am happily employed as a hydrogeologist with a small, local consulting firm called Hydrometrics. I occasionally run into UWEC Geology alumni during site visits." kintnersek@gmail.com.

**Gillian Krezoski '01.** Gillian is an instructor of Earth Science and Oceanography at the Univ. of Victoria in British Columbia, Canada.

**Ruby Kwallek '21.** Ruby writes, "I started a new position as a Microscopist Asbestos PLM at EMSL Analytical in Minneapolis! I can't wait to see what the future holds!"

Zachary Lydon '18. Zachary writes, "I'm starting a new position as Mine Engineer at Payne + Dolan, A Walbec Group Company. I jumped at the chance to move home to Wisconsin, and the people of Walbec made my choice very easy. I'm surrounded daily with extremely intelligent people, and I'm excited to see what we can create together."

**Tim Masterlark '94.** Tim is a Mickelson Professor at South Dakota School of Mines & Technology. He is also a Jefferson Science Fellow with the U.S. Department of State, Bureau of Diplomatic Security. He serves as an advisor for policy and planning to help enhance, enact, and enforce security standards to protect U.S. diplomatic operations. Additionally, he works on emergency preparedness and crisis response with the Department of Defense and the interagency community. Tim recently received an NSF grant to investigate mega-earthquakes, tsunami-genesis, and how uncertainties in earthquake deformation predictions influence tsunami behavior.

Nick Matula '15. Nick writes, "I am living in Milwaukee with my wife Olivia and completing my Master of Divinity at Moody Theological Seminary in spring 2023. I plan to enter into full-time ministry in the near future. At the same time, I have been working remotely as a contractor for Smart Sand for a couple years. This has given me the time to get my Divinity degree online and pay for it simultaneously. The Responsible Mining internship really set me up!"

**Chelsea Moran '21.** Chelsea writes, "I TA'ed an intro lab last semester at the Univ. of Arkansas and am continuing with that this semester. Next year I should be TAing the Geomorph lab. This spring I'll be trying to do a lot of field work for my thesis. Unlike Wisconsin, most of the outcrops are not covered in snow and ice here. The major goal of my thesis is to map the spatial and temporal distribution of boulders in the Buffalo River Valley, and by doing so, hopefully we will gain insight on the processes responsible for block detachment and transportation along the hillslopes. So far grad school is good. I took a drone class and now I can "legally" get paid to do drone surveys."

Troy Moseley '09. Troy is GIS Manager at Milestone Materials in Onalaska, WI.

**Todd Myse '96.** Todd is a Research Hydrogeologist and Licensed Professional Geologist at the Montana Bureau of Mines and Geology in Butte, MT.

Joe and Suzie (Reed) Nawikas '04 and '08. Joe and Suzie report, "We are celebrating 10 years of marriage this fall, but more monumentally, almost 20 years of dating since meeting in Phil's class decades ago! Joe is happily doing science for science's sake, monitoring the Truckee River for the local USGS field office. Suzie is going on 17 years of working with a small environmental laboratory that offers niche soil vapor sampling and analytical services. After hunkering down for two years, summer 2022 will bring several fun adventures, including a backpacking trip in the Sierra with the kids and a visit to Yellowstone (with a return to Specimen Ridge to revisit an area from Hooper and Lori's summer field class). But most exciting is a 6-day river trip through Dinosaur National Monument and other stunning geology on the Green and Yampa Rivers...the trip of a lifetime (and a really lucky permit lottery win)." reed.suzie@gmail.com / nawikasjm@gmail.com

Brian Nehring '15. Brian is a Senior Project Engineer with Pare Corporation Geotechnical Division. Brian writes, "We moved back east and are living in Narragansett, RI!! I'm excited to get to learn/experience all the great geology, especially glacial, here in New England!" bc.nehring@gmail.com.

**Nathan Nushart '08.** Nathan is a Data Scientist with L/S Equities in the New York City area.

**Lars Olaussen '10.** Lars in a Mine Superintendent at Lundin Mining Corporation in Marquette, MI.

**Maddie Palubicki '22.** Maddie is a Project Engineer Technician with Tetra Tech in western WI.

Duane Paul '84. Duane writes, "I am a Principal Hydrogeologist with Wood Environment and Infrastructure Solutions in Costa Mesa CA, where I have been (along with Wood's predecessor companies) for more than 25 years. Everyday seems to present a new challenge, which I enjoy. Cindy and I moved to California in 1990, when I accepted a work transfer with a twoyear commitment. Thirty-two years later, after raising three boys and surviving the pandemic, we are empty nesters and looking forward to the next stage of life, which hopefully includes becoming grandparents sooner rather than later." Duane.paul@woodplc.com

**Curt Peck '77.** Curt writes, "I had a great opportunity to visit campus in March 2022 (it had been ~44 years) and was amazed at the vitality of the department and opportunities for the students to work with high-tech analytical instruments to conduct research with their professors. Phillips Hall still looked the same, but the rest of the campus displays major renovations and new buildings. It is an inviting campus and the professors and students are wonderful. I encourage alumni to visit the campus and catchup with the great things going on there - proud to

#### **ALUMNI NEWS (continued)**

be a UWEC Geology alum." Clew2222@gmail.com.

**Shane Peterson '08.** Shane is a Senior Geologist at Keystone Holdings Group in Houston, TX.

**Travis Pickering '07.** Travis writes, "I start as the new Eau Claire County Engineer on June 20th! We just signed a contract (definitely a miracle the way everything worked out - very blessed) for a house in the Cadott area. A crazy/ busy time! Can't wait to get back home to WI."

**Taylor (Crist) Pierce '06.** Taylor writes, "I've benefited in so many ways from the Geology Dept. at UWEC, especially critical thinking and time management, which are not things that are easy to learn on the job or to teach. Going to a larger school, the Univ. of Minnesota, helped put that into perspective, and I'm so lucky to have had the opportunity to go to UWEC for geology. This last year I made the transition from environmental consulting to being a public servant. I work for the Colorado Dept. of Public Health and Environment in the Solid Waste Program (mainly landfill permitting and groundwater characterization/remediation regulatory role), and I absolutely love it" rolyattsirc@gmail.com.

Julia Potter '10. Julia is Co-Director of the Geotechnical Center of Excellence at the Univ. of Arizona in Tucson, AZ. She has a Master of Engineering degree in geological/geophysical engineering from the Univ. of Arizona.

**Angy Rafferty '22.** Angy was hired recently as a Staff Geologist with Intertek PSI in Chippewa Falls.

**Kalie Ress '21.** Kalie is a Staff Geologist with Intertek PSI in Chippewa Falls.

**Carrie Rowe '95.** Carrie is the Quest and Downstream Subsurface Asset Team Lead with Shell in Calgary, Alberta.

**Aaron Rowland '09.** Aaron started a new position as Engineering Technician with the City of Fitchburg, WI.

Henry Scamehorn '22. Henry reports, "I have been accepted into the Student Affairs Administration grad program at UW-La Crosse and an accompanying Sustainability Graduate Assistantship at UWEC. Looking forward to where these opportunities take me!

**Roger Schulz '13.** Roger is an Operations Coordinator at Big Rock Exploration in Minneapolis.

Hannah Semonick '15. Hannah is a Senior Engineering Technician at Donaldson Company in Bloomington, MN.

**Renee Sletten '21.** Renee is an Environmental Specialist at Cedar Corporation in Menomonie.

**Chase Sonday '17.** Chase is a Geographic Information Systems Technician at Telego Tech in Eau Claire.

**Alexandra Strand '07.** Alexandra is a Senior Manager of Information Management at Franklin Energy in New Berlin, WI.

Samantha (Taylor) Kaney '13. Samantha is an Assistant Project Manager at Haley & Aldrich. Samantha writes, "Things are going well here. We are very busy, which is both nice and stressful! I have been spending most of my time working on groundwater compliance for coal companies. Officially got my PG registration in Arizona, so it is nice having that milestone checked off my list!"

**Chad Underwood '96.** Chad writes, "All is well with the Underwood family. We finally got back to the desert Southwest for another spring break hiking trip after a 2-year hiatus. Always great to see geology without biology getting in the way! Now that we have teenage high school kids, I've given up on any geology educational instruction during our hikes. I've learned to pick my battles and will leave that battle for the college professors a few years from now!" chad@epillc.net.

**Greg Valitchka '12.** Greg is a MS Finance/MBA student at the Univ. of Oregon in Mosier, OR.

**Adam Weist '18.** Adam is a Staff Geologist with Trihydro Corporation in Golden, CO.

**Nickolas Woehlert '17.** Nickolas is a Staff Geologist at the Sigma Group in Milwaukee.

**Zac Zens '16.** Zac writes, "After 3 years at Rio Tinto, I started a new role as a Geologist at Tesla. I learned and developed so much during my time at Rio Tinto, but am thrilled to start this new journey."

Ashley Zuge '21. Ashley writes, "I started working at Tetra Tech in February 2022 as a Project Engineer Technician in Green Bay! I will spend much time in the field (mainly during the summer) playing in dirt! I am extremely excited to grow and learn with this company!"

#### EARTH SCIENCE SEMINAR SERIES

The Earth Science Seminar Series continues to bring excellent speakers to campus. It allows faculty and students to interact with other scientists working on a broad range of research topics, and it also permits us to "show off" our department and research equipment to the visitors....! Below are the talks presented during this academic year. Seminars schedules are posted on the Geology website. If you live in the area and would like to receive e-mail announcements about upcoming seminars, please contact Dr. Scott Clark at clarksco@uwec. edu. If you work for a company that would like to sponsor the seminar series or contribute money to defray speaker costs, please contact us!

"The Art of Making Precambrian Geologic Maps: A Tribute to Sam Helmuth (1994-2021)." Presented by Dr. Robert Lodge, Associate Professor, UWEC Dept. of Geology. 9/4/21.

"How low can you go? Do (igneous) silicic magmatic processes continue to 400 degree C?" Presented by Dr. Craig Lundstrom, Department Head, Dept. of Geology, Univ. of Illinois Urbana-Champaign. 10/1/21.

"Transition from fossil fuels to renewable energy." Presented by Sandy Rushworth, 1st Vice President & Master Docent Houston Museum of Natural Science Volunteer Guild. 10/4/21. "Are you interested in going to grad school?" Presented by UWEC Geology and Geography/ Anthropology faculty. 10/15/21.

"Iron in the fire: influence of plant burning on soil Fe chemistry and magnetic properties." Presented by Dr. Jessica Till, Visiting Assistant Professor, UWEC Dept. of Geology. 10/22/21.

"Mapping Khmer Rouge irrigation schemes in Cambodia: towards an understanding of their role in the Cambodian Genocide." Presented by Dr. Mandy Munro-Stasiuk, Professor, Dept. of Geography & Interim Dean, College of Arts and Sciences, Kent State Univ. 11/5/21.

"Like a moth to a Coleman lantern... More apropos of field work." Presented by Dr. Garry Running IV, Professor, UWEC Geography & Anthropology Dept. 12/3/21.

"Landscape impacts of intensified flooding during the Paleocene-Eocene Thermal Maximum." Presented by Dr. Eric Barefoot, Postdoctoral Associate, Saint Anthony Falls Laboratory, Univ. of Minnesota. 2/11/22.

"The Bearded Lady Project Challenging the Face of Science." A documentary film and photographic project celebrating the work of female paleontologists and highlighting the obstacles they face. Discussion panelists included UWEC's Dr. Nora Mitchell (Asst. Professor, Biology), Dr. Jessica Till (Lecturer, Geology and Geography/Anthropology), and Dr. Sarah Vitale (Asst. Professor, Geology). 2/25/22.

"Taking the temperature of tropical glaciers: A report from Ecuador." Presented by Dr. Jeff La Frenierre, Associate Professor, Dept. of Geography, Gustavus Adolphus College. 3/4/22.

"Environmental Forensics – A tool for understanding the nature and fate of PFAS in Rhinelander, WI." Presented by Elliot Draxler, M.S. student researcher, Geological Engineering, UW-Madison, and UWEC Geology alum '19. 4/1/22.

"A living history performance of Aldo Leopold." Presented by Steven Morgan, Aldo Leopold Living History, Kingston, NM. 4/22/22.

"Advancing metrology to enable data-driven modeling of molten metals." Presented by Dr. Elizabeth Rasmussen, Research Fellow, Thermophysical Properties of Fluids Group, Applied Chemicals and Materials Division, National Inst. of Standards and Technology (NIST), US Department of Commerce. 5/5/22.

"Geologic carbon sequestration and the role of the oil and gas industry in transitioning toward a low carbon future." Presented by Breck Johnson, Senior Geological Advisor, Occidental Petroleum Corp. Denver, CO, and UWEC Geology alum '04. 5/16/22.

#### NSF GRANT RECEIVED TO DIVERSIFY GEOLOGY/ENVIRONMENTAL WORKFORCE

By Kent Syverson

Our department recently received a threeyear, \$315,000 grant seeking to diversify the geology/environmental workforce (PI's Brian Mahoney, Scott Clark, Sarah Vitale, and Kent Syverson). The GEOPAths grant, entitled "Enhancing Underrepresented Minority Participation in STEM and the Applied Geosciences through Integrated Experiential Activities," will allow us to establish an experiential, field- and labbased outreach program for high school juniors. This week-long Summer Institute in Applied Geoscience will provide experiential geoscience activities to under-represented high school students (first-generation, women, minorities) from Wisconsin and Minnesota. The rising seniors will engage in experiences focused on career-relevant activities (regional geologic field trips, laboratory analyses, hydrogeologic monitoring, etc.) to spark interest in formal geoscience training.

Student participants who matriculate to UWEC will be part of a Foundational Research Experience [FRE], a group research experience with a faculty mentor prior to the start of the freshman year. The week-long FRE will begin a pathway involving intentional mentoring and cohort development; high-impact educational opportunities; collaborative student/faculty research; and quality paid internships to guide the students though the academic experience.

### We are actively recruiting prospective students for our summer outreach

**program.** All expenses and a small stipend are paid for student participants. If you know students who would benefit from this program, or if you know high school science teachers who could guide students to us, please call this program to their attention. Thanks! With your help, we will increase the number and diversity of students in the educational pipeline, and will build upon our tradition of engaging students through experiential activities and professional opportunities.



*Elliot Draxler '19 presents his PFAS research conducted at UW-Madison during the UWEC Earth Science Seminar Series.* 



Field Camp II friends in Montana, June 2022



Field Camp I friends in New Mexico, Jan 2022

#### ADOPT A FIELD CAMPER CAMPAIGN UPDATE

#### By Kent Syverson

In 2017 we initiated an "Adopt a Field Camper" campaign to defray rising tuition costs for Field Camp I students. Dr. Paul Myers, Curt ('77) and Laura ('78) Peck, and Ric Kopp ('75) pledged matching money in memory of Professor Emeritus Ronald Willis, who died in a tragic car accident in July 2015. In addition, Charlie and Sue Christopher sponsored half of Field Camp II. Alumni, friends, and companies donated \$44,441, in both large and small gifts, to Adopt a Field Camper through the Myers/Willis Geology Field Camp Scholarship fund in 2021-22! I was encouraged to see another record number of donors this year (76)—a healthy sign!

The impact? Funds were distributed based on financial need to 22 G470 students. All tuition expenses (\$1100) were paid for three students with "High" FAFSA financial need, 75% of tuition paid was for students with "Medium" need, and 50% of tuition paid for students with "Low" need. Each field camper, regardless of need, received at least \$150 in "adoption" money. Each Field Camp II student received at least \$200, and many students received more based on financial need.

If you have adopted a child, you know that adoption is a long-term commitment! More field camp students will be leaving for New Mexico and Montana next year, and we hope alumni and friends will consider a donation of any size to Adopt a Field Camper and provide grants and scholarships for Field Geology I and II students. Donations can be made at connect.uwec.edu/geology (select Myers/Willis Geology Field Camp fund) or by sending a check to the UWEC Foundation with a subject line mentioning "Geology--Adopt a Field Camper."



Your adopted Field Campers worked hard on their maps "in the lab" as well, Jan. 2022.



Curt and Laura Peck during their campus visit, 3/16/22

#### CURT AND LAURA PECK SPONSOR SCHOLARSHIPS AND HALF OF FIELD CAMP I

Curt and Laura Peck have pledged to sponsor half of Field Camp I for four years (2021-24). Two thirds of their \$6000 annual donation supports need-based grants to field camp students and \$2000 of the money defrays field camp expenses for all field camp students regardless of financial need. This half sponsorship and other donations to the Adopt a Field Camper program are making a huge positive difference for our students, who they met during a visit to campus in March.

In addition, Curt and Laura are sponsoring three \$1000 Geology Promise Scholarships for four years using matching funds from Chevron Corp. These scholarships will be awarded to an incoming freshman geology major and a student taking MinPet I during his/her sophomore year.

Curt (UWEC Geol '77) attended graduate school at lowa State Univ. and worked for 36 years for Chevron in Exploration Geology, Development Geology, with the Environmental Management Company. The last four years of his career he supported Chevron's largest asset in Atyrau, Kazakhstan (Tengiz field) as an Environmental Manager to TengizChevroil. Curt and Laura (UWEC SPED '78) have many stories to tell from this overseas adventure!

Thanks so much to Curt and Laura Peck for generously helping our Geology students!

#### CHARLIE AND SUE CHRISTOPHER SPONSOR HALF OF FIELD CAMP II

Charlie and Sue Christopher sponsored half of Field Camp II once again in 2022. Their \$3500 annual donation is matched 1:1 by the Alliant Energy Foundation to provide \$7000 for need-based grants to field camp II students each year. Charlie and Sue visited campus in April (see photo) to meet their "adopted" field campers—it was a fun time!

Charlie (UWEC Geol minor '74) participated in Dr. Ron Willis' field camp in Wyoming. After helping with a minerals-related surveying project in South Dakota, Charlie decided to attend MATC in Madison to become a surveyor. He was a line surveyor with Alliant Energy for 31 years.

Thanks so much to Charlie and Sue Christopher for supporting our field camp students!



Sue and Charlie Christopher with their "adopted" Field Camp II students, 4/13/22.

Their \$3500 annual donation is matched 1:1 by the Alliant Energy Foundation to provide \$7000 for needbased grants to field camp II students each year.



### DONATIONS

#### **HOW TO DONATE**

Geology funds with UWEC Foundation are used to support many activities in the Department including student travel to professional meetings, faculty/student field trips, student recruitment, and student scholarships. Your gift will be greatly appreciated and used effectively within the Department. In addition to financial support, we also welcome your support by volunteering to speak to our majors/ minors about job experiences and sending potential job opportunities to our students.

During the past year, 95 individuals/ companies (a new record!) donated \$90,641 to the Geology Foundation accounts. All gifts, large or small, are greatly appreciated! Please consider giving something back to your undergraduate department.

Due to state budget challenges, alumni gifts to the department's advancement funds are becoming increasingly critical. Professor Kent

Syverson has been working with the Foundation Office to establish new scholarships. If you are interested in establishing a scholarship within the Department of Geology, here are a few basic guidelines from the Foundation Office.

- All gifts to the UWEC Foundation are tax deductible to the fullest extent allowed by law. You may use cash, checks, credit cards, stocks, or other tangible assets to fund a scholarship.

- Annual scholarships are funded each year (a minimum commitment of \$500/ yr for five years is required to establish an annual named scholarship fund).

- Endowed scholarships only use interest on the invested principal to fund a scholarship each year. A minimum investment of \$30,000 is required to establish an endowed fund; there is no maximum.

- The scholarship name is determined by the donor(s). Most name a scholarship after their family or the name of a loved or honored one.

- Donor(s) may help develop scholarship criteria with the assistance of a development officer. Preferences rather than requirements are most often expressed. Preferences may involve academic major, financial need, academic promise, first-year student or upper-division status.

- Estate gifts can be used to establish future scholarships with guidance from Kent Syverson.

If you would like more information about establishing a scholarship or planned gift, please contact the Kent Syverson at 715/836-3676. If the UWEC Foundation Office calls you asking for a donation, please remember the Geology funds! If you work for a corporation or a geology-related firm, please inquire if your company has a matching program for contributions to academic geology departments.

#### THANK YOU DEPARTMENT DONORS!

The Department thanks the generous donors listed below who have contributed to Geology Department accounts with UW-Eau Claire Foundation from June 1, 2021, through May 31, 2022.

#### BECKSTROM GEOLOGY MAJOR SCHOLARSHIP

Gregory Beckstrom

#### **DR. JOHN R. BERGSTROM GEOLOGY SCHOLARSHIP** Sandra Chamberlain Michael Mc Millan

GEOLOGY PROMISE SCHOLARSHIP Curt and Laura Peck Chevron Corporation

**PAUL MYERS & RONALD WILLIS GEOLOGY FIELD CAMP SCHOLARSHIP,** the ADOPT A FIELD CAMPER **CAMPAIGN & GEOLOGY OPPORTUNITY SCHOLARSHIP ANONYMOUS** (\* indicates adopter of at least one field camper) Alliant Energy Foundation\* lan and Christina Anderson Barr Engineering Co.\* Karl and Sarah Beaster Ronald Berg\* Jennifer and Gerald Borski\* Kristen and David Bowman Nathalie and Paul Brandes Scott and Francine Clark Charles and Susan Christopher\* ConocoPhillips Co. Michael Cummings and Robert Culver\* Maria Delgado Gomez Carol Eloranta **Enbridge Foundation Kenneth Fredricks** Olivia Giles Gary and Jody Graham Sergius Hanson Karen Havholm and Glenn Reynolds Christopher Hendrix\*

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Shelby Short-In Honor of Robert Lodge Renee Sletten Laura Strumness\* Kent and Lila Syverson-In Memory of Ron and Thora Willis Gene and Barbara Thornton\* Duabchi Vang Sarah Vitale Vulcan Materials Company Aaron and Stephanie Walczak Nancy Worden Ashley Zuge-In Honor of Scott Clark and Brian Mahoney

#### JRC APPLIED GEOLOGY SCHOLARSHIP

SCHOLARSHIP Josh and Molly Carlisle Mark and Savona Kiessling Carolan Laudon Andrew Sudbrink

#### **GEOLOGY ADVANCEMENT FUND**

Sarah and Kristian Moore David Risch Michael Mc Millan Mark and Molly Ciardelli Trevor Nelson-*In Honor of Phil Ihinger* Steven and Pamela Olson-*In Memory of Don & Laura Christy* Roger and Julie Oreskovich James Tannler-*In Honor of Ron Willis* Chad and Alison Underwood

#### INTERNSHIP ADVANCEMENT FUND Sandra Rushworth

David Risch Ric and Jacqueline Kopp

#### H2O WELL DRILLING & PUMP SERVICE GEOLOGY SCHOLARSHIP Nolan Rodriguez

#### DAVID L. RISCH GEOLOGY RESEARCH SCHOLARSHIP

David Risch (endowment gift)

Nick and Juli Freiburger Chevron Corporation

#### WISA GEOLOGY SCHOLARSHIP Wisconsin Industrial Sand Association, Inc.

#### DECLARED ESTATE PLANS NAMING

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