Greetings from the WIU Geology Department! We hope the year since our last newsletter has been a good one for you. Thanks in large part to the generous donations of our alumni, the Geology Department had another busy and productive year. During these times of stagnant or shrinking budgets in Illinois higher education, we would not be able to continue to fund the faculty and student research, trips to meetings, and field trips you will read about in this newsletter without your monetary support. You are a source of pride for our department. Please stop in Tillman Hall the next time you are in the Macomb area. I hope you enjoy the newsletter!

Steve Bennett
Alumni Newsletter Editor

Group photo taken at the Fall 2014 Geology Bonding Night held at Pizza Hut. Carl Nozum was the winner of our annual rock hammer raffle.

3D Printing

Over the past year, Dr. Hegna has collaborated with WIU’s Center for Innovation in Teaching and Research (CITR) to enlarge the teaching collection fossil and vertebrate remains. Dr. Hegna has rendered a number of skulls (≈30), both modern and fossil, from ct-scans and has sent them over to the makerbot 3D printer operated by CITR. This has put models of a diverse array of animals into the hands of students. Over the last couple of months, they have printed a couple of larger skulls as multi-part assemblies: a Tarbosaurus skull (an Asian relative of Tyrannosaurus) in five parts, and the skull of a fossil giant wombat (Diprotodon, from Australia) in seven parts!
Leslie Melim

Spring 2014 was filled with lots of students as I taught Geol 113 Energy and Resources along with my usual Geol 115 Oceanography. Geol 113 content is finally getting more settled at the third pass, but it requires more continuous tweaking, as it includes more current economics than my other courses. It is fun to try and keep up-to-date with resources so as to give a balanced view to our students. I was also working with Brian Knecht as he finished his undergraduate research project, looking at pool fingers once again (see title below). April saw me officially starting as Co-editor of the Journal of Sedimentary Research, in charge of all papers on carbonates, evaporites and diagenesis. My duties will include attending AAPG and GSA Annual Meetings for the next four years. Do let me know if you are attending: I’d love to get together. Denver AAPG, anyone?

Summer started with a good group in Field Camp, once again wandering South Dakota and then going out to Wyoming with Dr. Mayborn. I also enjoyed a combination vacation/business trip to Seattle, Washington and Vancouver, British Columbia. July is definitely the time to visit the Northwest, sunny and cool just when Illinois gets too hot. A day-long meeting of the Journal of Sedimentary Research editors was small price to pay to get out to my favorite part of the world! While in Macomb, I took the time from working on papers to do lots of horseback riding: we managed to ride just about every park in a 2 hour driving radius of Macomb with a horse trail! Lake Argyle and Weinberg King State Parks are the closest, and both have very nice horse trails separate from the people trails.

Fall was quiet but busy with another Stratigraphy and Sedimentation class, Oceanography and attending GSA, in Vancouver, British Columbia this year (Yep, two trips to Vancouver in 2014! Nice place!). I also went out to Albuquerque for my usual few days on the SEM over Thanksgiving. For Spring 2015, I am on sabbatical, which means no teaching and lots of time for research. I am going to spend two months in Albuquerque with ample SEM time! I am looking forward to the break from teaching and expect to come back with lots of new research data and ideas!

Undergraduate Research project: Brian Knecht, “Stable isotope analysis of pool finger fabrics from Cottonwood Cave and Hidden Cave, Lincoln National Forest, New Mexico.


Greetings to all of the friends of the Department! The past year has been a busy one for everyone. I'm pleased to report that our overall enrollments have held steady and we have seen a slight increase in the number of majors and minors. Unfortunately, our budget has been “bare-bones” for the last several years, and next year does not look much better! Fortunately, your generous financial support has made a difference. We have maintained Geology Field Camp, our in-class field trips, trips for field work and undergraduate research. Your continued support helps defray the cost for these activities as well as the cost of student presentations at Undergraduate Research Day on campus and student travel to professional meetings.

The Geomorphology position still remains unfilled, but we are hopeful for a temporary fix in hiring an adjunct professor to teach Geomorphology and Glacial Geology next academic year. I continue to teach my online Environmental Geology class and to serve as a consultant to a variety of Industrial Mineral enterprises. Keep in touch. It’s always great to hear from you.

Hi all,

We’re off to a great start for 2015 here in the Geology Department! Any day the sun is shining is a good day, and we’ve thankfully had some sunny days.

Field Camp 2014 is all filed away, but not forgotten. The Field Camp group-shot lineup graces the north wall in the department office. I see it everyday I’m at work and it makes me smile. Sooooo many memories and experiences are created for the students and faculty. I make all the travel arrangements, negotiate the contracts for lodging and meals, and collect required documents and funds from the students. I don’t get to attend, but nonetheless I get excited about the opportunity for our students.

My firstborn grandchild, Fischer, graduated from high school and started college last fall. For those of you who have not yet experienced grandparenthood, let me tell you the time absolutely flies by. This year I’ll have another grandchild, Graham, graduating from high school. It’s going to be interesting and fun to see what direction the grandkids’ journeys will take them.

Our week of family vacation in the Ozarks this past summer was super fun! My son-in-law (a surgeon) rents a very nice boat that accommodates all of us. Many evenings we set out via water to any number of restaurants with boat ramps for an enjoyable meal on a relaxing patio with the sunset as a backdrop and amazing geology all around.

I want to extend the sincerest thanks to our dedicated, generous alums who see to it that our Foundation Account remains healthy.

Wishing you all a blessed 2015!
Tom Hegna

The last year was a busy one for me, both personally and professionally. At the end of March, 2014, my wife gave birth to our second child, a girl named Ingrid Mary. This happened right in the middle of the spring semester, so it provided some diversion from (or interruption to) the normal flow of classes.

This fall, I added another course to my workload—in addition to History of the Earth and Paleontology, I now team-teach Integrated Science I with Dr. Susan Meiers in Biology. The purpose of this new class is to help our science education majors get their fill of science content without having to take multiple 4-credit hour lab courses in every branch of science. Refreshingly, on many of the evaluations, they requested that we include MORE GEOLOGY in the class next time!

With the new baby, I have been a bit more sedentary this year. I took a trip to Iowa City in June to use their scanning electron microscope along with geology major Hunter Starr. In the fall, I supervised a geology club trip to a fantastic geode locality in southeast Iowa (thanks to geology department alum Don Smith!). I also managed to scout out some Paleozoic localities in eastern Missouri. One of those localities was where I conducted my own undergraduate honor’s project research over ten years ago!

Over winter break, I, along with other colleagues at WIU, completed a National Science Foundation grant for a scanning electron microscope (a device used to see the very, very tiny). We’re hoping to eventually get this piece of technology funding, and be able to bring this very useful piece of equipment to campus so that our students can get hands-on experience with cutting-edge technology.

I have a number of students working with me on research projects, and many of them will be presenting them at the North Central regional Geological Society of America meeting this May. Stefan Ososky will present his research on a weird mode of preservation (‘glauconitization’) acting on a Mississippian bryozoan. Hunter Star will present his work on a supposed fossil amphipod crustacean from the Triassic of Nevada (spoiler: it is just a lobster tail). Nick Liming and Corrin Peters will be presenting on fossil silicification in the Cambrian Weeks Formation in Utah. Matt Juron will be presenting his work on a unique example of trilobite behavior from the Silurian of Canada. I have two additional students working on processing ct-scans of an enigmatic fossil arthropod belonging to a group called the euthycarcinoids—we hope to solve the mystery of what exactly these arthropods are related to! Alumni contributions have been critical in funding these projects!

I am managing to keep myself busy with research projects as well. Projects that I have been working on myself keep getting pushed to the side as collaborative projects shift to the front—collaborators are better at complaining for a share of my time! A new paper on some weird arthropod appendages from the Weeks Formation in Utah came out this last year, and I have two new papers in press—one dealing with the evolution of clam shrimp, and other describing the oldest fossil notostracan. In the coming months, I hope to finish up some older projects dealing with branchiopod crustaceans, and amber fossilization.

This summer, I (and several WIU geology undergrads) will be part of a National Geographic funded expedition...
to study the Cambrian Weeks Formation in Utah. Stay tuned to the next edition of the Alumni newsletter to learn how it goes!

New Publications


Steve Bennett

My teaching duties have been much the same as in past years. I continue to teach Introduction to the Earth, Hydrogeology, and Geologic Field Methods, but I’m teaching an online version of Energy and Earth Resources during the Spring semester for the first time. It is odd to me that so many of the students are on-campus yet prefer an online course. I understand the convenience component of the online delivery format but I miss the face-to-face interactions. It must be a sign of my age.

I once again accompanied Dr. Mayborn on his Spring Petrology/Structural Geology field trip. We went to his Missouri locations in the St. Francois Mountains, a place I had never visited before. The weather was great and I thoroughly enjoyed the trip.

I continue to serve as advisor for our chapter of Sigma Gamma Epsilon and am looking forward to attending the 100th anniversary convention at the University of Kansas this March. I also will be attending the North-Central Section’s GSA meeting in Madison, Wisconsin this May. If any of you plan on attending let me know so we can get together.

I wish you all a successful and enjoyable 2015!

Dan Erni from Waste Management once again agreed to speak to my Hydrogeology class about the remediation techniques they use at the McDonough County landfill.
Kyle Mayborn

It has been another good year here in the Geology Department. We are enjoying an increase in our majors which resulted in having 24 students in Mineralogy. This was by far the largest group in my fifteen years at WIU and it required two sections. This has also necessitated two sections of Petrology, but I have combined the lectures and have two lab sections. Thus, I have been busy reorganizing Petrology to fit the new schedule, but it is well worth the effort if it means we have more majors.

The spring Petrology/Structure trip was in SE Missouri this year. I hoped to make it to central Wisconsin, but we were snowed out again. We visited the Pilot Knob banded iron outcrops, the Hughes Mountain columnar jointed rhyolite, and the other classic stops. The water was low enough along the St. Francis River that I had the students do the mapping project at the Tiemann Shut-ins.

Field Camp had thirteen students which means that we had two vans for the Yellowstone/Montana trip, but only one van for the rest of Field Camp. As you might imagine, the students got to know each other very well as we were packed pretty tight for the morning and afternoon drives to and from the map areas. I changed the Yellowstone trip a little by adding a stop to hear a nice fumarole and to climb the hill that overlooks Grand Prismatic Spring.

My research on the Mellen Complex is continuing as I took undergraduates Lukas Smith and Adam Shade with me for three days of field work. Luke has started his senior project a year early and is currently studying the clinopyroxenes in the Mineral Lake Intrusion. In December we went to Washington University in St Louis to use the electron microprobe. As always I want to thank everyone who has been so generous in giving to the Geology Foundation. Your generosity makes it possible for our undergraduates to undertake interesting and fun research projects.

On the personal front, I’ve been trail running and mountain biking this year and in October I participated in an orienteering event. Ten hours of hiking/running on trails and cross-country through the Missouri woods. These types of events have intrigued me so I’m planning to try my hand at some adventure races this year.

I hope that all is going well for you. Please send me an email as I would love to hear how you are doing (KR-Mayborn@wiu.edu).

Sara Bennett

I continue to teach intro classes and over the past two semesters I taught triple sections. This gave me the amazing opportunity to grade many, many labs, tests and other papers. Over the summer, our family visited the much-misnamed Hot Springs National Park. There are many springs but the national park is really the historic district of Hot Springs, Arkansas. The first “bathhouses” were nothing more than muddy pits. Apparently the mud pits were quite the rage and savvy entrepreneurs built
Bob Johnson

The update of display cases continues. In addition to a fresh coat of paint, several displays are getting lighting upgrades as well. We are switching to 40 and 60-watt equivalent LED bulbs. These are supposed to have a 20+ year service life. This rating is based on a low usage of only a few hours per day, if you adjust it for an 8-hour day it’s more like a 5-year life span. Still, the long life and low energy consumption should offset the higher cost of the bulbs for a long-term savings.

We are also rearranging the rock prep room a bit by moving the air abrasive unit and its vacuum to the wall along side the air scribe. This should streamline the work as well as make the air abrasive unit more comfortable to use in its new lower position.

Four new fossil displays were added to room 117 in the Spring. The text and content were provided by two of our majors: Lukas Smith and Allison Hartman. The new displays replace the Grand Canyon and Geologic Structures displays.

The 2014 Broken Arrow Stunt Championships in St. Louis were tricky this year. Warm temps but windy flying conditions forced me to abandon the competition debut of my electric-powered stunter and rely instead on my traditional internal combustion plane. This was a wise choice as I placed first in my division while several other flyers suffered mishaps in the face of the 20 mph gusts.

On a closing note I’ll mention the passing of my mother in early December. After 4 years in a nursing home she succumbed to respiratory difficulties at Memorial Medical Center in Springfield, IL.

Now for the fun stuff. Imagine a fault as a “line” you could walk along if you so wished. Now imagine this thrust fault line hidden under surface sediments but the fault plane extends deep into the crust through the folded, sedimentary rock layers of the Ouachita Mountains. Deep groundwater, heated by an unknown source, slowly migrates upward along the buried fault plane. Each day, about 700,000 gallons of 4000 year old water, at about 143°F, rises along the fault. (Source NPS Geology field notes.) This nice hot mineralized water seeps out in a line along the fault trace and a row of bathhouses was built over the springs. Way cool. I’m done with the fun stuff now. Hope you all have a geology-filled year.
**SGE News**

Last fall SGE began creating a geologic time scale on the sidewalk north of Tillman Hall. Here they are painting markers for the Paleozoic periods using the same color scheme as in the Geology Museum. They are also developing a pamphlet to go with the time scale. When finished, visitors will be able to take a self-guided tour (like a park nature trail) through the history of our Earth.

**Geology Club Corner**

The Geology Club at WIU has been active this year. We’ve continued our new tradition of a sometimes-monthly ‘Bad Geology Movie Night’. As we all know, Hollywood does not understand geology, and this gives us a chance to laugh at their attempts! We took a trip to the Vincennes Sand pit to hunt for geodes in the Fall of 2014 (thanks to alum Don Smith!). In early February 2015, we tried having our first rock sale fundraiser and had a surprising amount of success. Yet this spring, we plan on having more ‘Bad Geology Movie Nights’ as well as having additional trips to a quarry for fossil hunting and to the Field Museum.

**CT-Scan Computer**

The Geology Department Foundation and the College of Arts and Sciences funded the purchase of a new computer for research in the department. The purpose of the computer is to process fossil ct-scans. Two students working with Dr. Hegna are presently processing scans of fossil arthropods from the Carboniferous that were preserved in Mazon Creek-like nodules. The arthropods represent a group called Euthycarcinoids, and the students hope to solve the mystery of their evolutionary relationships.
Group Photo from Summer Geology Field Camp 1995

Left to Right -
Sue Wilson, Richard Hart, James Jacobson, John Kimball, Ryan Keeler, Mike Heimer, Jeff Papineau

2014 Graduates
Keith Babcock
Joe Candioto
Kathryn "Kat" Kaminskas
Brian Knecht
Josh McGhee
Sam Rowe
Joshua Smith
Sara Stanford
Morgan Stice

Continuing Student Alumni Award
Hunter Starr

Richard Schafer Freshman Scholarship
Quentin Rossmiller

Richard Schafer Field Camp Scholarships
Morgan Stice
Joshua Smith
The Geology Department had a good showing at WIU’s annual Thomas E. Helm Undergraduate Research Day. Seven students presented their research and Brian Knecht’s poster earned first place in the poster competition!

The abstracts for their research are posted at http://www.wiu.edu/centennial_honors_college/research_day/2014abstracts.php
Geology Department Gatherings

The Geology Club hosted our annual Holiday Party at the Old Bailey House. We had a great turn out of students and almost all of the food was eaten, so it was very successful. Dr. Mayborn once again put together a contest and presented our winners with gift cards for the use at the WIU Union Bookstore.

We had beautiful weather for our annual Spring Picnic at the Horn Field Lodge. Bob Johnson did the grilling and showed off his dance moves for Dr. Calengas and others.
Paul Wagner (1967-2014)

We were saddened to hear of the untimely passing of WIU Geology alumnus Paul Wagner. Paul held very fond memories of his years at WIU. His obituary has been included below.

Paul Wagner, age 47, passed away on Friday, December 26, 2014.

Paul was a brilliant lifelong student of the sciences who constantly strived to be his best. He was a gentle man with a great sense of humor and an avid, enthusiastic lover of the movies. Paul was always generous with his time and many talents, teaching and sharing with anyone that needed a helping hand. He was a loving partner and friend.

Paul had a great passion for the fields of geology and geography. He attended Western Illinois University where he graduated with his B.S. in Geology and then on to the University of Montana where he obtained his Masters in Geography. During these years Paul met some of his closest lifelong friends that held a very special place in his heart, many of them were from the WIU class of 1992 Field Camp crew.

In lieu of flowers, a memorial fund in his name has been set up to support the Department of Geology at Western Illinois University. Contributions can be made in Paul’s memory to the Department of Geology (choose Geology under academic programs and add Paul’s name in the comment section): https://www.wiu.com/giving/purchase.asp

A celebration of Paul’s life will be held in the spring in Minneapolis, Minnesota.

Donations

The Geology Department would like to thank the individuals and organizations listed below for their donations. Your generous gifts have allowed us to provide scholarships, defray student costs of field trips, purchase scientific equipment for use in undergraduate research, and cover registration fees and travel expenses of students presenting research at geologic conferences. Again, thank you! (This list contains donations received since January, 2014.)

Daniel Ahmann
Sharon Ahmann
Anadarko Petroleum Corporation (Matching for A. Brehm)
Timothy Aten
Hannah Barnes
John Becker
Michael Bingham
Dennis Bomke
Craig Brown
Peter Calengas
Mary Cameron
Michael Cameron
John Carl
Chevron Humankind (Matching for M. Bingham)
Derek Clark
EOG Resources Inc. (Matching for John Becker)
ExxonMobil (Matching for W. Jardine & G. Walsh)
Richard Formosa
Randal Gustafson
Todd Hall
Todd Huson
Sandra Jankowski-Rose
William Jardine
William Johnson
Philip Kaminski
Marvin Klusman
Kyle Korczak
Scott Koza
Steven Larson
Marathon Oil Corporation (Matching for S. Koza)
Robert McGaughy
Joseph McKee
Margaret Morton-Davis
Quintin Overocker
Kim Perez
Harley Ponsler
Spencer Quam
Brian Rice
Stanley Robinson
Lora Rosenhauerk
Stephen Shafer
Craig Stevens
Eric Tyrrell
Timothy Tessendorf
Ginny Walsh
Kristin Woody
David Wronkiewicz

Thank You!
Over 30 years ago, a set of partial dinosaur remains (still encased in sediment and their plaster jackets) were donated to the Geology Department. With no ID or locality information, they languished in the basement. Over the past year, undergraduate Hunter Starr has begun work on preparing the remains. Using a hand-held air chisel and an angle grinder, he has slowly begun to reveal the remains housed inside. The sediment does not yield its secrets easily, and it wears down chisels with surprising speed. We can now partially see the bones within, and they seem to belong to a sauropod pelvis. But, it may take several generations of students to fully reveal the remains.

New Displays

In the Spring of 2014, two students in Paleontology (Allison Hartman and Lukas Smith) completed in-class honors projects. As part of their projects, they redesigned four display cases in the History of the Earth lab room to showcase different groups of fossils. They replace displays that predate the arrival of ALL of the current faculty!
2014 Summer Field Camp

Petrified tree in Yellowstone National Park

Group shot at the Stillwater Mine, Montana

Precambrian igneous/metamorphic rocks in Bighorn Mtns.

Duplex structure south of Jackson, Wyoming

A rainy day at Devil's Tower National Monument
Here is a smaller version of a map of the distribution of WIU Geology Alumni. We post a large version of this map in the hallway of Tillman Hall to show passersby the wide variety of employment opportunities and work locations available to our graduates.
Recent Field Trips

Group photo during the Spring 2014 Petrology/Structural Geology field trip. They are sitting on the BIF deposit on Pilot Knob, Missouri.

Students enjoying the view and the geology at Garden of the Gods State Park during the Fall 2014 Stratigraphy and Sedimentology field trip.