A belated Happy New Year from the WIU Geology Department. We hope that the past year has been filled with successes in both your professional and personal lives. As you’ll read in this newsletter, we have had a very busy and successful year here in Macomb.

Last April 30th we had the long-overdue dedication of Tillman Hall, including a speech by Dr. Roderick Tillman, son of Dr. Arthur Tillman after whom the building was named. The event was well-attended, including comments by WIU President Dr. Jack Thomas and College of Arts and Sciences Dean Dr. Susan Martinelli-Fernandez. A news release about the dedication is still available on the WIU web site at www.wiu.edu/news/newsrelease.php?release_id=9813.

Last year we graduated more students (18) than we have in over 20 years. Many of them have found employment or are now in graduate school. Jobs are hard to come by, but luckily the value of a Geology degree seems to have remained high even during the economic downturn.

You generous donations to the Geology Department have allowed us to continue to provide a quality undergraduate experience to our majors despite these hard economic times. Last summer we purchased a research-grade camera microscope that Dr. Hegna has put to good use. We supported a record number of undergraduate research grants that led to a record number of undergraduate research presentations last spring semester (see the photos later in the newsletter). Lastly, your donations allowed us to create two brand new scholarships to attract and retain quality students. The “Continuing Student Alumni Award” was established to recognize and award current Geology majors that continue a high level of academic performance. The “New Geology Major” scholarship was established to recognize students who have changed their major to Geology at some point throughout their academic college career.

I hope you enjoy the newsletter. Be sure to check out our web site and facebook page to see more images of our faculty and students in action.

Steve Bennett
Alumni Newsletter Editor
Leslie Melim

I had a very busy Spring, with four students finishing up undergraduate research projects and presenting at Undergraduate Research Day and in the Geology Department. They sure kept me busy! Then Summer Field Camp had the largest group in years—20 students. For the first part, where everyone is learning how to use a Brunton and read a topographic map, a student to faculty ratio of 20:1 is not good! So we hired a student from the 2010 class who was just graduating (yep, he took it a bit early) to work as a Teaching Assistant for the first three weeks. Very helpful! By the second half, everyone has a pretty good idea what’s going on, so Dr. Mayborn managed on his own. Fortunately, it was a good group and everyone helped out and made it work. For those who remember the Lange Ranch Map, the east side has a new road which exposed the best example of rain-drop imprints I have ever seen (Fig. 1 & 2)! And the first ones I have ever seen in the field! They are near the top of the Fall River Sandstone and beautifully exposed. I hope they last getting rain and snow on them.

The rest of my summer was pretty quiet. I stayed in Macomb and split my time between research, wood-working, and my new (old) hobby of horse back riding. It has been a challenge getting back into horses after not riding for almost 30 years, but it sure has been fun doing it! My fall went pretty much the same way except adding in teaching and getting a lot less time to play with my hobbies.

As the new semester starts here in the spring, we are offering a new field trip class—Geol 450 Geology of National Parks. This time we are going to go to the Colorado Plateau in May and see how many of the National Parks in Utah and Arizona we can hit in 10 days! The trip will be funded by the Geology Foundation, so Thank you, Alumni! The students are in the classroom for the spring semester and will be ready to see all the new geology when we go. Fun!

Students finishing projects this past year:

Brittany Doty: “Origin of Stromatolites in the Precambrian Copper Harbor Conglomerate, Michigan.”

Meagan Graham: “Comparison of stable isotopes in pool spars and pool fingers”.

Randy Gustafson: “Testing entombed microbes as biosignatures in order to evaluate biogenicity”

Stefan Sheplar: “Cave pearls in the Quincy underground limestone mine”.

Papers:

Greetings to all of you. I hope the past year has been filled with good health and spirit for you. Even after graduating the largest number of majors in decades, the department is happy to report that our enrollments are still healthy. I wish I could say that the budget situation in Illinois was as healthy as our program. Luckily for us, we are blessed with very generous and devoted alumni. Despite these difficult economic times your generous financial support has made it possible to expand our scholarship offerings and purchase much-needed equipment, such as the new microscope used by Dr. Hegna. In addition, your appreciated support has allowed us to continue to offer our in-class field trips, to expand our undergraduate research participation at the annual Undergraduate Research Day on campus, and to defray the cost of student travel to professional meetings.

The financial stress in the State and at our University has also affected our department. For the fourth year in a row we have not been able to fill the vacant Geomorphology position. We continue to hope that next fall we will be allowed to conduct a national search to fill this position.

I continue to teach my online GEOL 375 (Environmental Geology) and serve as a consultant to the Industrial Mineral community. Please stop by the department if you are in the Macomb area. We are always glad to see you.

As part of cleaning his office, Dr. Bailey gifted his collection of Jurassic Park figures to the Hegna’s son for his birthday. Here Dr. Calengas does a final quality check to make sure they work properly before they are given.

Greetings from the department secretary!

Geology is a great place to be. Hmmm? I believe that’s been mentioned before, but it’s so true! Life is good. I must admit that I’m feeling pretty comfortable in the department.

We had a large group of students attend Summer Field Camp 2012. It was a very successful field camp with minimal problems. Two 15-passenger vans were needed plus the department trailer to transport all the students, faculty, tents and supplies. Of course, no students or faculty rode in the trailer. :)

After many years, Tillman Hall had an official dedication ceremony this past spring for the gentleman whom the building is named after, Arthur G. Tillman. His son, Roderick, and family were here to help with the dedication ceremony and we now have a lovely plaque installed in the southwest foyer.

Geology had a record number of students conducting undergraduate research in 2012 and presenting at Thomas E. Helm Undergraduate Research Day. Check out the link from our homepage to learn more about this exciting research. [http://www.wiu.edu/cas/geology/u_research.php](http://www.wiu.edu/cas/geology/u_research.php)

With the State of Illinois funding so terribly tight, we’re still waiting for approval to hire a Geomorphologist to round out our program. In the meantime, we continue to plug away the best we can. We’re excited to announce we now have a new degree, the B.S. Geology Paleontology Option.

A heartfelt THANK YOU to our dedicated donors. Your gifts have helped in so many ways to provide support for student projects, student travel, and equipment for student research.

Please stop by for a visit soon.
Tom Hegna

After my hectic first year here at WIU, I’m looking forward to a calmer second year. Last year I spent my time not only writing new lectures for History of the Earth and Paleontology, but also finishing my dissertation. By the end of last semester, both big tasks were finished—leaving me with a bit more time to do other things this year. This summer, my family and I took a much-needed vacation to Lake Okoboji area in northwest Iowa (a collection of several big glacial potholes left over from the last ice age about 13,000 years ago).

With generous help from the Geology Foundation (and alumni like you!), the department purchased a new camera microscope this past spring. The microscope is equipped with a drawing tube (or camera lucida, to use the old-timey name), polarizing filters and a digital camera. Paleontology at WIU has brand new eyes!

With a bit more free time, my research is progressing. Together with some colleagues from the University of Akron, I am working on submitting an NSF grant to study the evolution of breeding systems in fossil clam shrimp. Today, clam shrimp have a diverse set of breeding systems: males and females, males and hermaphrodites, or hermaphrodite-only populations. No, sadly the naughty bits aren’t preserved—we use a computer-aided technique of shape analysis to distinguish the sex of the fossil shrimp. We hope to learn why populations of clam shrimp repeatedly give up on sex, and if the lineages that ‘give up on women’ are less successful over long periods of geological time.

Student projects are underway. Brian Knecht presented a poster at the national GSA meeting this fall showing off his micro-CT scan reconstruction of a Carboniferous amblypygi spider. Morgan Stice was a co-author on a talk at the same meeting that looked at the preservation of some enigmatic ‘polka dots’ on trilobite exoskeletons. I should add that both Brian and Morgan were able to attend GSA through help from the Geology Foundation (thanks!). Two students, Josh Smith and Karl McBride, are poised to begin working on some CT-scans of crustaceans preserved in amber from Chiapas, Mexico in the coming semester.

Along with Brian and Morgan, I went to the national GSA meeting this fall, too. I co-chaired a special session devoted to arthropod evolution, along with a colleague from my Ph.D days. At that session, I gave a talk on the effect fossil preservation has on the interpretation of enigmatic fossil arthropods. This past year has also seen the publication of a couple of my coauthored projects—one on the preservation of trilobite guts and another finally publishes some work I helped out with on crustacean segmentation—a bit of dabbling in developmental biology.

The next year should be an exciting one. I will be helping to lead a departmental class to the national parks of Utah/Grand Canyon after the spring semester. Following that, I will be heading off to Yale for about a week where I will work on making casts of some spectacular fossils to help build our WIU paleontological teaching collection. Next time you are in Macomb, make sure you stop by!

New publications:


The Hegnas

New camera microscope

Future paleontologist ....or dentist.


Selected conference presentations:


Dr. Hegna led some students on a fossil collecting excursion at WIU’s Kibbe Field Station as part of the “Discovering the World Through Science” program offered last summer for high school students.
Greetings from Macomb. I hope 2013 is being good to you and your family. I am into my 13th year of teaching here at WIU and everything is still going well. Last spring I had sixteen students in Structure, making them the largest Structure class I have taught. Our field trip required two vans and so Bob graciously went with us to drive the second van. The trip was to southeast Missouri where we camped at the Silver Mines Campground. One of the highlights on the trip was the flash flood scar at Johnson Shut-ins State Park. Additionally, on Sunday morning we did a small mapping exercise on the igneous rocks exposed at Tiemann Shut-ins just a few miles upstream from the campground.

Field Camp was also a large group with twenty students. They were a good group which made it an enjoyable time. We did get a few memorable Dr. Mayborn camp sites in the Bighorns where we set up the tents in snow flurries and high winds and then a very beautiful night in the Beartooths. We also added a new stop to see the dinosaur tracks just east of Greybull, Wyoming and to get a better view of the monocline on the west side of the Bighorns.

My research is still moving along with most of the effort being placed on the Mellen Igneous Complex in northern Wisconsin. WIU geology undergraduate Joe Candioto and I spent five days in the field collecting samples and then visiting Washington University in St Louis to use the electron microprobe. This was a great experience for Joe and he will be presenting his results at the WIU Undergraduate Research Day. 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.

I did manage to play a few disc golf tournaments this year. We had a number of students who also play so it was fun to play a round of golf on a few of the field camp days. My primary hobby these days is trail running, although Mari has been pointing out to me that the number of cougar sightings in Illinois has been increasing. I told her that they would just help me increase my speed, which is good since I’ve signed-up for a few races for this spring.

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).

Geology Club Departmental Gatherings

Spring 2012 picnic at Horn Field Campus

Holiday party at the Old Bailey House
**Sara Bennett**

Last summer my family took a trip to Custer State Park in the Black Hills. Truly amazing place for great vistas and geology! Unfortunately, collecting is not allowed in the park. Fortunately, when hiking to the top of Harney Peak, there is a short section of the trail that travels through the Black Hills National Forest. Rock collecting for personal use is allowed in the forest. I found an awesome piece of orthoclase pegmatite that is now setting on the map case in my office. We visited the area 6 years ago and the most notable differences are the many hill slopes covered with dead and dying pine trees. The view from Harney Peak is quite different now. Many slopes are blanketed by brown dead trees instead of the rich piney green I expected. The infestation by the mountain pine beetle is well entrenched. Maybe the image is too small to note the differences in tree health but if you could see the area you would be appalled. I wonder how bad the infestation will get? Many mountain states are dealing with this huge problem.

**Bob Johnson**

I am sad to report that the 2013 Mid-America Paleontology Society (MAPS) fossil expo will not be held in Macomb this year. It seems that scheduling conflicts and the closing of the Days Inn have precipitated a move to Iowa City, at least for this year. After well over a quarter century of having the MAPS show here it will indeed seem empty in April without them. I wish them success and hope they can and will return to Macomb next year.

On a happier note, a while back we produced a life size model of a Tully Monster for the Mazon Creek display. This turned out so well that a second model was built. More interest was expressed so I decided to mold the model and cast copies. I’m proud to say that we now have multiple finished models of museum quality Tully monsters. If you might want one for yourself they are available through the Geology Club as part of a fundraiser. Feel free to contact me, or the Geology Department for details and price.

New projects for the upcoming year include a replacement for the “Age of Reptiles” display in the hall with two new displays using those specimens.

Flu season caught Pam and I despite the fact that I had the flu shot. Though I was out for just a few days, the effects lingered for weeks. My advice, avoid the flu. The rest of the family is doing well, grandkids are growing and learning. Parents are busy and waiting for spring.

Again I traveled to the land of the big arch for the 2012 Broken Arrow Stunt Championships. Fine weather and fine flying was the norm. This year I added a new trophy to my collection, though it was one I could have passed on, the Black Feather Award for the best crash. It seems that in the second round of flying I miscalculated my fuel consumption and ran dry in the top of the cloverleaf maneuver. With dwindling air speed and line tension there was little I could do except prove the law of gravity. Not to worry though, the damage was light and I still managed a second place finish overall. More practice and maybe a new plane for 2013 might be in the cards.
Hello everyone! It has been a very fast year since the last newsletter. I always have a hard time trying to remember what “newsletter worthy” events have happened during the past 12 months. I continue to teach Introduction to the Earth, Geologic Field Methods, and Hydrogeology during the school year, but this year I will be teaching a different course during the summer. I have taught Oceanography for the past 13 summers, but the enrollment in the course has dwindled in the past two years. My course was not alone, it seems that courses taught on campus during the summer are not popular. Students want online course offerings. To that end I decided to develop an online version of our Energy and Earth Resources course. It is a lot of work (and I’m not done yet), but I’m hopeful that it will be a popular General Education course.

I worked with four great students last year conducting research on the streams in the Spring Lake watershed. I’m continuing the research with three more students this year. It would be nice if we actually had some rain this Spring…..

I continue to spend a lot of time doing service such as, chairing WIU’s curriculum committee, serving as treasurer for the Illinois Groundwater Association, chairing our local Groundwater Guardian committee, and making presentations to Boy Scout groups. I taught the geology belt loop for Cub Scouts in Galesburg last fall. They were quite “energetic” but I think some of them may choose to learn more geology in their future.

I had a milestone of sorts in my personal life in the past year, I’m no longer the tallest member of my family. My older son sprouted past me and, at 14 years old, still has a number of growing years ahead of him. He definitely inherited his height from Sara’s side of the family. My younger son started 7th grade this year so we don’t have any kids in elementary school anymore, which is hard for me to believe. Where have the years gone?

Drop by my office or send me an email when you get a chance. I love hearing from our alumni. Take care.
Group Photo from Summer Geology Field Camp 1996

Summer Field Camp 1996
Back Row: David Martin, Melinda Stroops, Carl Meyer, Mena Ryan
Front Row: Gregg Trapp, Todd Hall, Dr. Steve Bennett, Ryan Momningen, Kira Grana, Derek Welch, Dawn Redding
Photo by Dr. Peter Calengas

2012 Graduates
Ryan Anderson
Frank Barthol
Erik Brawner
Scott Buchanan
Jessica Cunningham
Eric Curry
Brittany Doty
Christine Gardner
Meagan Graham
Kevin Gunn
Randal Gustafson
Jacob Hicks
Carrie Jackson
Kyle Korczak
Daniel Markowski
Stefan Shepler
Richard Sybert
William Tinnin-Timm

Scholarships
Richard Schafer Field Camp Scholarship
Christine Gardner
Jacob Hicks
Daniel Markowski

Continuing Student Alumni Award
Fall 2012
Joshua Smith
Sara Stanford
Undergraduate Research Presentations

Mineralogical Analysis of the Mineral Lake Intrusion of Northern Wisconsin. Jacob Hicks with Kyle Mayborn

Comparison of Stable Isotopes in Pool Spar and Pool Fingers. Meagan Graham with Leslie Melim

Nutrient Concentrations in Tributaries to Spring Lake, McDonough County, Illinois. Jessica Cunningham and Brittany Doty with Steve Bennett and Chad Sperry

Testing Entombed Microbes as Biosignatures In Order To Evaluate Biogenicity. Randy Gustafson with Leslie Melim

Possible Gender Determination by Carapace Shape in Triops. Brad Raver with Thomas Hegna

First CT-scan reconstruction of Graeophonus, a late Carboniferous whip spider (Arachnida: Amblypygi) from Coseley, Staffordshire, UK. Brian Knecht, Russell Garwood, and Thomas Hegna. (at GSA Annual Meeting, Charlotte, NC.)
Undergraduate Research Presentations

Suspended Sediment Concentrations in Tributaries of Spring Lake, McDonough County, Illinois. Ryan Anderson and Dan Markowski with Steve Bennett and Chad Sperry

Color Patterns in Trilobite Carapaces. Morgan Stice with Thomas Hegna

Cave Pearls in the Quincy Underground Limestone Mine. Stefan Shepler with Leslie Melim

Limb Bone Scaling: Afrotherian Allometry. Christine Gardner with Matthew Bonnan

A New View of Carboniferous Arthropods Through Computed Tomography Methods. Brian Knecht with Thomas Hegna

Origin of Stromatolites in the Precambrian Copper Harbor Conglomerate, Michigan. Brittany Doty and Christine Gardner with Leslie Melim
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!

Mary Allen ('87)  
AT&T Foundation  
  (Matching for T. Gordon)  
Timothy Aten ('85)  
Thomas Bartels ('72)  
John Becker ('83)  
Michael Bingham ('75)  
Dennis Bomke ('76)  
Margaret Branson  
William Branson ('66)  
Victoria Broomhead ('92)  
John Brown on behalf of Craig Brown  
Peter Calengas  
John Carl ('85)  
ChevronTexaco  
  (Matching for M. Bingham)  
Derek Clark ('09)  
EOG Resources Inc.  
  (Matching for K. Perez & John Becker)  
ExxonMobil  
  (Matching for W. Jardine & G. Rust)  
Charles Finley ('70)  
Richard Formosa ('81)  
Gary Gerlach ('76)  
Terry Gordon ('74)  
Charles Gnuse ('91)  
Todd Hall ('96)  
David Higgins ('78)  
Todd Huson ('80)  
Sandra Jankowski-Rose ('78)  
William Jardine ('85)  
Robert A. Johnson ('86)  
William Johnson ('85)  
Philip Kaminski ('07)  
Marvin Klusman ('67)  
Scott Koza ('01)  
Sheri Lamberson ('93)  
Steven Larson ('82)  
Marathon Oil Foundation  
  (Matched for S. Koza)  
Willard McCracken  
Robert McGaughy ('81)  
Joseph McKee ('83)  
Timothy Morrow ('70)  
Margaret Morton-Davis ('77)  
Geoffrey Nokes ('81)  
Lee Osmanson ('72)  
Devon Pavlek ('00)  
Kim Perez ('76)  
Petersen Environmental LLC  
Harry Petersen ('74)  
Bryan Podkul ('92)  
Harley Ponsler ('74)  
Spencer Quam ('77)  
Adam Rawe ('08)  
Kim Rawe ('00)  
Brian Rice ('85)  
Stanley Robinson ('77)  
Robert Roe ('72)  
Lora Rosenhauer ('78)  
Robert Rozen ('73)  
Ginny Rust ('04)  
Mark Severson ('75)  
Stephen Shafer ('83)  
Shell Oil Co. Foundation  
  (Matching for K. Woody)  
Penny Silzer ('85)  
Bruce Souder ('83)  
Holly Stein ('76)  
Craig Stevens ('80)  
Sheri Stevens ('93)  
Kenneth Stringer ('85)  
Timothy Tessendorf ('75)  
Susan Turner ('95)  
Dorothy Tynal ('83)  
Eric Tyrrell ('85)  
Anthony Wendle ('82)  
WIU Geology Club  
Kristin Woody ('00)  
David Wronkiewicz ('82)  

Dr. Bennett and SGE President Jessica Cunningham present the W.A. Tarr Award to Brad Raver. The award is voted on by members of the local SGE chapter and includes a certificate and $50 check. Congratulations Brad!
Guest Speakers

Dr. Bailey speaks with guest speaker Victoria McCoy after her presentation entitled “The formation of concretions and their role in fossilization”. Victoria is currently a Ph.D. candidate at Yale University and was invited to speak last fall semester by Tom Hegna. After the presentation she remained in the area to check out concretions in the western Illinois area.

Dan Erni, Environmental Engineer with Waste Management, gave a tour to our Hydrogeology students explaining the remediation techniques employed at the McDonough County Landfill. He is standing by a step structure that is fed by a French drain. The old part of the landfill has some VOC contamination and the aeration provided by the steps and the lagoon in the background are a passive remediation technique that has proved successful. He also showed us a stand of poplar trees they use to conduct phytoremediation on contaminated water that is not collected by the French drain.

Brian McIlhenny, from the Macomb Water Treatment Plant, gave a tour of the facility for our Hydrogeology students. He is standing by the brand new computerized low-pressure filtration system that Macomb installed to replace the sand filters they had used for decades.
Recent Field Trips

Dr. Hegna and the Geology Club visited the Grindstone coal mine for their fall field trip.

Dr. Mayborn (white cap) with his Structural Geology and Petrology students during his spring field trip to Missouri. It was a lot warmer than his northern Wisconsin trips!