

Spring 2014

Earth News, v37, Spring 2014

University of Northern Iowa. Department of Earth Science.

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DEPARTMENT OF EARTH SCIENCE

EARTH NEWS

VOL 37 spring 2014



DEPARTMENT OF EARTH SCIENCE

From *the* Department Head
SIOBAHN MORGAN



Earth Science faculty and staff (L-R, B-F) Nora Janssen, Jim Walters, Lee Potter, Kyle Gray, Steve Smith, Lynn Brant, Alan Czarnetzki, Mohammad Iqbal, Chad Heintel, Joe Gale, Siobahn Morgan, Mike Stevens, Tom Hockey, Alexa Sedlacek

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Dear Alumni and Friends of the Earth Science Department,

The leaves have pretty much fallen from the trees and there is even snow on the ground, so it is that time of year to update you all on the happenings in Latham Hall. As you'll see in this newsletter, we've been quite busy with the many outreach activities we do, as well as the field trips for our courses, and of course the regular business of classes, labs and research.

Things have changed quite a bit in Latham Hall, with Dr. Kenneth De Nault being granted emeritus professor status and the hiring of Dr. Alexa Sedlacek to support our new environmental science degree. We are also actively searching for another faculty position in Air Quality. We were fortunate to have the environmental science degree approved just before the start of fall semester, and in only a few months we already have 10 majors pursuing the degree! Also, the majority of prospective new students to our department indicated that they were interested in following the environmental science degree. The new degree program, along with our steady offering of earth science courses for incoming freshmen, has helped keep the overall number of department majors at a healthy level, and, of course, we're hoping for even more majors in the future.

We've also been discussing future directions for the department. To bring back the geology majors at this time would be difficult without enough faculty to support it, but we are investigating proposing a geology minor and also an environmental science minor – both of which could make use

of our current course offerings. In fact, we're already looking at developing new courses to bring more students into the department: an introductory environmental science course, and a geological field experience/methods course. We hope to have these courses in the Fall 2014 schedule. Recent events have shown us that we need to not only concern ourselves about quality, which we have no problem delivering, but also quantity. Having a significant increase in our student population is one of the first foundations we can use for requesting more faculty positions.

With all of the changes in our department, we continue our efforts to expand the impact of our department on the UNI community and beyond. As you'll see in the newsletter, we've continued our extensive outreach activities, and in 2014 we'll be kicking off a new educational endeavor with the generous support of the Iowa Limestone Producers Association through a short course for teachers on Iowa's Geological Resources. We continue to provide our students with memorable and educational (of course) experiences, such as the May trip to study the water resources of the American West, trips to the local quarries, telescope observations of the heavens, tracking of winter storms, exploration of the Maquoketa caves, and the annual trip to Casey's Paha – how many of you remember that one? If you live in Iowa, you may be aware of a new initiative in your community, the STEM (Science, Technology, Engineering, Mathematics) initiative



supported by the state of Iowa. At a November STEM event in the Five Sullivan Brothers Convention Center in Waterloo, the Earth Science department was well represented by not only faculty and staff, but also eager Earth Science majors. These folks were on hand to help keep hundreds of youngsters interested in science through a variety of hands-on activities centered on the Earth Sciences. This is probably one of our most important tasks outside of Latham Hall – to keep future generations interested in science and eager to pursue STEM careers.

(CONTINUED ON PAGE 13)

NEWS

from the faculty *and* staff



ALAN CZARNETZKI
PROFESSOR OF METEOROLOGY

Winter weather has made an early appearance as I write this year's news, thanks to a polar high pressure system that made its way south out of Canada over the last few days. Thankfully, I finished digging the potatoes out of my garden this past weekend. My crops of tomatoes, green beans, and potatoes all did exceptionally well this year and, after a busy canning season, we should be able to enjoy them for a long time to come. After a cool, wet spring and early summer this year followed by a very dry late summer and early fall, our thoughts turn to the coming winter season. At this point, the Climate Prediction Center's outlook provides no good indication of what we can expect in the Midwest. Their best assessment is that warm/cool/normal temperatures and wet/dry/normal precipitation are all equally likely in Iowa for the December through February winter season.

In July, the University of Northern Iowa's IMPACT program, of which I am a team member, offered a 2-week summer institute for middle and high school teachers to learn about the science inquiry process through use of GLOBE (Global Learning and Observations to Benefit the Environment) and STORM Project (Science center for Teaching, Outreach, and Research on

Meteorology) resources. I introduced participants to weather analysis and forecasting concepts. We continue to work with our IMPACT participants throughout the academic year. If you are a middle or high school teacher, please visit http://www.uni.edu/ietti/impact/about_impact/ for details about the programming we will be offering in Summer 2014.

This Fall, I'm teaching the Meteorology course and 2 sections of Elements of Weather. "Air Quality" will be offered in Spring 2014. Best wishes to all!



PAULA EVEN
INSTRUCTOR

As I sit down to write this, it is hard to believe another year has flown by. The big news at the Even house this year is Gene retired from John Deere at the end of May. All of the children were able to be there, which made it an extra special event. The times we can all get together are few and far between due to jobs and distance.

A couple of moving trips were made to New Mexico and Maryland this year. On one of the moving trips to New Mexico, we came across a few hundred elk in the caldera. Of course they were just tiny dots and this is the one time I had left my binoculars home to save room! While we were in Maryland, we were able to watch

Amanda participate in the Culpepper International Triathlon at Mountain Run Lake Park, Culpepper, VA. She did great!

A nephew's wedding north of Seattle at Cama Beach took us to the Northwest this past October. We had never been there before, and we had some very memorable moments at Mount Rainer (picture above), Puget Sound, Mount St. Helen's, the Oregon coast and Redwood forest. All of the fog was a new experience for us and at times a bit disappointing as it interfered with our views. We then headed to California to visit relatives and drove through Yosemite on a spectacular fall day on the way to Denver for GSA. At GSA, I was very busy with the SGE booth, but I was able to get away for Matt's presentation. I finally know all about the research he has been doing! I wish everyone the best.



JOE GALE
INSTRUCTOR

I am in my thirteenth year of teaching in the Department of Earth Science. I continue to teach three sections of Elements of Weather and one section of Elements of Weather Lab each semester. I also staff the Astronomy/Weather Help Room for an hour each week to help students taking Astronomy or Weather courses.



KYLE GRAY
ASSISTANT PROFESSOR OF
EARTH SCIENCE & SCIENCE ED.

It is hard to believe that I am starting my fifth year at UNI. Nothing earth shattering has happened since last year. I've taken no major trips or expeditions to parts unknown. I continue chugging away teaching Inquiry into Earth and Space Science (the intro course for elementary education majors). This course continues to evolve and is a joy to teach. I also taught the sequel to Inquiry (Investigations into Earth and Space Science), and this spring I will be teaching a graduate-level science education course, Research Methods in Science Education.

I continue to work on my research project where I am investigating changes in student confidence towards teaching science after completing my courses. So far the results are encouraging, and I am ready to see if I get similar results from the other Earth Science intro courses.

Outside of UNI, I was recently named an Associate Editor for the Journal of Geoscience Education and recently helped to launch a Teacher Education Division within the National Association of Geoscience Teachers.



CHAD HEINZEL
ASSOCIATE PROFESSOR OF
GEOLOGY & SCIENCE ED.

So 2013 was not a particularly joyful year at the University of Northern Iowa, but with adversity comes equal opportunity and perhaps clarity. My family and I struggled with academic cuts/uncertainty, the destruction of the M. Price Laboratory School, and the breaking apart of a community. It became explicitly clear that higher education, is not unlike any other business; perhaps we were too idealistic/naïve? The face of education and for that matter our civilization, is rapidly changing. So as in any democratic society, there are really only two choices: 1) cut your losses and move on; or 2) hunker down and use your skills, talents, and temporarily weakened ambition to create a civilization that you can be proud of. Some of my geoarchaeological research has shown that during times of societal unrest, humans generally move towards familiar and perhaps comfortable settings. My family and I have selected option #2 and moved back toward our rural roots. We have relocated to rural Iowa and are enjoying a renewed sense of purpose and community. I am very excited about many recent UNI and personal developments. I am encouraged

by on-going movements that seek to effectively communicate geology's critical role in global development, conservation, poverty, climatic change, energy, geo-hazards, water/sanitation, infrastructure, and use of natural resources. Here's to an amazing 2014 - if there is one thing I have learned from this past year, it is that it will take a lot of hard work and creativity, and in the end that might not even be enough, but at least you did your part!



THOMAS HOCKEY
PROFESSOR OF ASTRONOMY

My attendance at the American Astronomical Association [AAS] Publications Board meeting, in Anchorage, brought my number of states visited to 48. I've also traveled to nearly forty countries, but as those keep changing, it's hard to maintain a definitive score! I continue to edit the Biographical Encyclopedia of Astronomers, vol. II and the journal Astronomy Education Review. I'm the department's default fussy grammar guy. I chaired the committee of the Historical Division, AAS that presents our biennial book prize. This year it went to Harvey M. and Victoria Bricker for their Astronomy in Mayan Codices. I'm also secretary of a group trying to preserve the world's astronomical heritage (e. g., stone circles of Britain).

My son is in twelfth grade and an award

NEWS

from the faculty *and* staff

winner in the annual Cyber Defense Competition at Ames. (The sponsors are our own Aaron Spurr and Computer Science's Paul Gray.) My stepson, Artyom, took a job with the Export-Import Bank of the United States and moved to Washington, D. C. My mother-in-law works with Yuliana at Casa Montessori School; I find this a remarkable accomplishment inasmuch as Valentina speaks no English. Michael and I drove to the Air & Space Museum in Hutchinson, Kansas for Spring Break – great museum. Also, there are a great many dusty miles of nothing but wheat fields. I taught eight students "Sky Interpretation." It's too bad our Natural Interpretation major got axed. I also now have the distinction of having at least one of my former "Astronomy" students running for Congress. I remember her because she always sat in the front row. Another leftover item from a year ago: I met the President of the United States in the summer of '12. Or, at least I shook his hand. The campaign bus had come to a stop at the Pump Haus in downtown Cedar Falls – they have to eat somewhere, I guess. I got ushered up to the front of the ropes because I had with me my 92-year-old mother, and I believe they considered her a photo op. I think she still voted for Romney.



AARON SPURR
INSTRUCTOR OF SCIENCE ED. &
FIELD EXPERIENCE COORDINATOR



MOHAMMAD IQBAL
PROFESSOR OF GEOLOGY

Greetings to friends of the department! I hope everyone is having a wonderful, productive year. It was nice to meet so many of you in different occasions this past year. No doubt the months have gone fast, but it was fun. The highlight of my activities this past year was my professional development assignment (PDA) in the fall of 2013. I worked on a flood-related project in the Cedar River watershed. As you know, there is no natural resource more important than water to the economy and quality of life in Iowa. Recent climate change, frequent flood events, and associated damages to the aquatic ecosystem and human properties have brought the water issues to center stage. My research is focused on discharge analysis of the watershed as it relates to large storm events. Additionally, I am looking into high sediment loads and turbidity in surface water bodies that continue to be a serious problem in Iowa.

Meanwhile, I have received a research grant from the newly formed Iowa Nutrient Research Center (INRC). This project deals with distribution, transport, and biogeochemical transformations of agriculturally derived nitrogen and phosphorus in the Cedar River watershed. I am gathering a large volume of field data from the above projects that are

expected to strengthen the department's hydrology course offerings. Salute to our students who have hugely contributed to these projects through routine sampling of water and sediments from around the area. The students who participated in water-related projects this year are Alison Schell, Madison Pike, Nathan Jacobsen, Collin Barker, Aminul Haque, and Sushil Tuladhar. Aminul and Sushil have recently graduated with their Master's degrees from the Environmental Science M.S. program at UNI. Several research papers resulted from these projects that were presented at local and national meetings in geosciences. Besides research, I taught Hydrogeology and a few sections of Capstone in the spring and summer. Teaching is always fun, and I very much look forward to teaching Intro to Geology and Environmental Hydrology in the spring. Best wishes to all!



MIKE STEVENS
INSTRUCTOR

"Time is not measured by the passing of years but by what one does, what one feels, and what one achieves." Jawaharlal Nehru So, another year has been written in the books. I'm re-acclimated to the halls of Latham and have a nice little cave on the 2nd floor by Dr. Czarnetzki's STORM Office. Speaking of Dr. C, I was able to present weather demonstrations at a couple of STEM events for him during the year. I've been working closely with Kyle

and the Inquiry to Earth and Space Science course. We're changing a few things here and there that match up better with the Next Generation of Science Standards for the students aiming to be in a classroom like I was 20 years ago. During the past year, I also taught Elements of Weather and Inquiry to Physical Science. At the same time, I've been teaching Astronomy at Hawkeye Community College in the evenings.

In the future, I'm going to miss Dr. Walters as he heads to retirement. Our morning chats as he sips down his first cup of coffee is and has always been a great way to start the morning. He is a great mentor for instructors and a very good friend as well.

Other than that, Cynthia and I continue to raise our four 4-legged kids and are watching another 4-legged critter for the time being. Cynthia continues to work at the Grout Museum. She was moved to the collections department to help work with the damaged inventory caused by a water pipe breaking in the storeroom above. Also, she's working on an on-line course. So, she's been very busy this past year. We hope that the year to come is a healthy and happy one for all of you.



LEE POTTER
INSTRUCTOR

Thanksgiving comes late this year, and it is time to break with tradition in a number of ways. After 55 sections of Capstone, I had the great pleasure to teach Intro to Geology this fall semester. It is always good to get the creative juices flowing by doing

something different. To that end, I will be taking on Structural Geology and 1/3 of the Optics - Petrography course in the spring. Research is ramping up again with New Mexico igneous rock chemistry and isotope work in various stages of planning or execution, and a possible return to West Texas.

On the home front, the family is fine, and finishing our 2008 flood rebuild with the installation of a new wood-burning stove. Karen and I took a brief vacation to Hot Springs, Arkansas, to experience history, spas and diamond hunting in the Ozarks and Ouachitas. Stay safe, and keep in touch.



ALEXA SEDLACEK
ASSISTANT PROFESSOR OF
EARTH SCIENCE

I moved to the Cedar Valley this summer, after completing my Ph.D. in Geological Sciences at The Ohio State University. My husband, Patrick, and I lived in Columbus, Ohio, for six years, but moving to the Cedar Valley was like coming home. We grew up in eastern Iowa, and are happy to be back - this time with our toddler, Penelope, and pets. Cedar Falls and the surrounding community are welcoming, and we are impressed with the area's great coffee, beautiful parks and extensive trails.

This semester, I've enjoyed teaching Earth History and Environmental Geology. The quality of UNI students and their willingness to work hard continues to impress me. I benefit greatly from the work of my

TA, senior Geology major Madison Pike. Her extensive knowledge of the fossil and rock collections simplified my job. I also credit the department's teaching collections, which are among the most well organized and complete collections I have worked with. I joined Dr. Jim Walter's Geomorphology class on their field trips and am learning the geology of the immediate Cedar Falls area. I believe in a hands-on approach to geology and environmental science, and I look forward to developing a field component for most of my courses here at UNI.

I am a stratigrapher and carbonate sedimentologist by training. My research focuses on the end-Permian mass extinction, the largest extinction event of the past half billion years. My field area is in the Great Basin region of Utah and Nevada, and my dissertation adviser and I published a paper on our work there in Geology earlier this year. I have also analyzed samples from Italy, China, and Iran for carbon and strontium isotopes, which I use as chemostratigraphic tools. In the next year, I hope to form a research group and involve our majors in field and laboratory work.

I look forward to developing this program and will give you an update next year!



JAMES WALTERS
PROFESSOR OF GEOLOGY

In June 2014 Jim will be retiring from the Earth Science Department after 39 years of service.



ALUMNI SPOTLIGHT

EVE HALLIGAN (EVE LAMPSON)

WHERE ARE YOU NOW (PROFESSIONALLY/PERSONALLY)?

I am currently living and working (remotely) in Brandon, Iowa, with my husband and two children (ages 8 and 11 years old). I spent the previous two years living and working in Houston, TX, for the Lunar and Planetary Institute (LPI), a NASA-funded science research organization which is a part of the larger non-profit Universities Space Research Association (USRA), as an Education and Public Outreach (E/PO) Specialist. I have been very fortunate to have been able to continue my work for the LPI from Iowa over the past year.

WHAT HAVE YOU BEEN DOING SINCE LEAVING UNI?

Since graduating from UNI in the spring of 2001, I have completed 30 hours of graduate work towards a M.S. in Geosciences specializing in Meteorology/Climatology at the University of Nebraska-Lincoln and used my education and experience to enter the field of informal science education. My first job post-graduate school was as the Science Educator at the Bluedorn Science Imaginarium, part of the Grout Museum District, in Waterloo, IA. I served in this position for about 5 years

and was responsible for the development and facilitation of all of the science education in the building. This included school tours, the Museum School program (with the Waterloo & Cedar Falls public schools), development and design of new hands-on exhibits, science shows, monthly hands-on science days for the general public and families, homeschool programs, oversight of interns and volunteers, annual rocket camps, Boy Scout badge days, Girl Scout programs, as well as playing an active role in the marketing, promotion, & funding of these programs. During my time at the museum, I gained a tremendous amount of experience in informal (out of the classroom) science education and learned the importance of fostering strategic partnerships and collaborators for successful programs.

In July of 2011, I was offered an exciting opportunity to join the Education and Public Outreach (E/PO) team at the Lunar and Planetary Institute in Houston (my current position), which I happily accepted. It was a difficult decision since all of our family and friends were in Iowa, but it's a risk that I'm glad that I took! Through my work at the LPI, I have had the honor of

meeting and working with some of the most amazing and talented people I've ever encountered. Even better, though, is the love and passion that my fellow E/PO specialists and educators possess. It truly makes work much more enjoyable when the people you are with love what they do!

As an E/PO specialist, I primarily work to develop and deliver Earth and space science educational materials, resources, and professional development training to other educators across the country (and across NASA). My work largely involves taking the latest in NASA Earth and planetary science research and discoveries and making it into something useable and understandable for various audiences - such as other educators, families, and the general public. In many ways, E/PO specialists act as a bridge between the science world and rest of the world at large. I find this exciting since it means I have the opportunity (and challenge) to inspire the next generation of scientists, engineers, and explorers through my work and the products/activities that I create. In particular, I feel it is important to help bring the true nature of science to my audiences. That science is not just a set of facts in a textbook but rather a way of understanding the world and universe around us. There is a lot to be excited about with all of the great NASA missions currently exploring our solar system, and it is fun to be the person to share the discoveries with people who may not realize how active exploration is right now in Earth and planetary sciences.

The primary focus of my work with the LPI has been the development of freely available informal science educational materials and activities and delivery of professional development trainings to informal educators from across the country through the LPI's Explore program (www.lpi.usra.edu/explore/). This program started by serving and training public librarians but has expanded to include other informal educators such as museum staff, Girl Scout leaders, and camp professionals/interpreters. The Explore program is designed to engage children in Earth and space science in libraries and other out-of-classroom environments. Finally, I am also a member of the NASA Science Mission Directorate's Planetary Science E/PO team, where I help to strategize, plan, and deliver professional development opportunities for the NASA Planetary Science E/PO community as a whole. Within this group, I have also helped to co-lead a task force on professional development related to serving underserved/underrepresented audiences in science education.

WHAT ARE SOME OF YOUR HOBBIES AND INTERESTS?

I have always enjoyed the outdoors, and have continued some of my favorite hobbies which include horseback riding, gardening, star gazing, and, more recently, running 5K's. After returning to Iowa, I discovered a new passion for health and fitness through the Next Level Extreme Fitness Program in Cedar Falls - it is an amazing group (family) of people and has had a very positive impact on me and my family. I never would have believed that I would be good at running, let alone enjoy it, but I've discovered a love for the challenge of it. It has served as a good reminder to never settle in life, but rather to continue to try new things and push myself out of my comfort zone. That is the best way to really grow and learn... a good reminder for an educator.

WHAT DO YOU ENJOY MOST ABOUT WORKING WHERE YOU ARE NOW?

In my work for NASA E/PO over the past 2 years, I have been able to experience and take part in some amazing opportunities and events - from NASA mission launches such as the Mars Science Laboratory (Curiosity rover), Lunar Atmosphere and Dust Environment Explorer (LADEE), and Mars Atmosphere and Volatile Evolution (MAVEN) missions, to becoming an authorized certifier for the lunar sample education disks from Johnson Space Center, and traveling across the country to train other informal educators in NASA hands-on activities, resources, and science content. I have thoroughly enjoyed the diversity of tasks and opportunities within my current position. Not many jobs provide this range of opportunities and experiences!

HAVE YOU RECEIVED ANY OTHER DEGREES SINCE GRADUATION OR DO YOU PLAN TO CONTINUE YOUR EDUCATION IN THE FUTURE?

Since graduating from UNI, I have completed 30 hours of graduate work towards a M.S. in Geosciences. However, I do not have any additional educational plans for the foreseeable future.

HAVE YOU BEEN THE RECIPIENT OF ANY AWARDS OR SPECIFIC ACCOMPLISHMENTS?

I was honored to be the recipient of an American Meteorological Society Government/Industry Graduate Fellowship, sponsored by the National Weather Service.

One of the final programs - and one that I am particularly proud of - that I helped to start at the museum before moving on to my current job was a new High Altitude Balloon (HAB) program, funded by the Iowa Space Grant Consortium.

(CONTINUED ON PAGE 10)

EVE HALLIGAN (EVE LAMPSON) CONT.

This program has expanded and grown considerably since I left as a part of the museum's outreach activities. The museum staff at the Imaginarium has done an excellent job! As a result, hundreds of middle school students in the Waterloo Community School District have now learned science and engineering related to HAB and conducted launches of their own HAB's. I was very proud to have helped to bring

such a valuable and unique opportunity in STEM (science, technology, engineering, and mathematics) education to the Cedar Valley!

ARE YOU CURRENTLY WORKING ON ANY RESEARCH PROJECTS OR HAVE YOU COMPLETED ANY SPEAKING ENGAGEMENTS IN THE PAST?

Since I am not working as a scientist but rather an educator, I am not currently involved in any research projects. However, I have completed several speaking engagements to share the work being done within NASA Planetary Science E/PO through the LPI and my career in general. My most recent engagements have included conference sessions at the annual Lunar and Planetary Science Conference (LPSC), the annual American Library Association (ALA) Confer-

ence, and the annual Association of Rural and Small Libraries (ARSL) conference, as well as a career day at my daughter's school.

HOW WAS YOUR EXPERIENCE AT UNI AND THE DEPARTMENT OF EARTH SCIENCE HELPFUL?

The excellent guidance and education that I received at UNI provided a solid foundation for my success in graduate school and my career. I still try to check in and say "Hi" to my former professors and the staff in the Department of Earth Science from time to time, and go out of my way to share relevant NASA and LPI internship and educational opportunities when I receive them. I'd like to thank all of the wonderful professors in the Earth Science Department for their encouragement during my time at UNI.

STUDENT SPOTLIGHT MADDIE PIKE

Senior Geology major Maddie Pike spent a large portion of her summer in the southern hemisphere, where she created geological maps as part of Michigan Technical University's South Africa Field Camp. The camp took place in Cape Town, South Africa, the Langebaan Lagoon in West Coast National Park near Langebaan, South Africa, and the Cape Fold Belt Mountains near Ladismith, South Africa, from early May to early June 2013.

"I decided to attend the South Africa field camp because I have done very little traveling in my life and I wanted to see another part of the world. This field camp allowed me to see the geology of an area that is completely different from the central United States that I am familiar with, and it enabled me to learn more about the geological history of the southern hemisphere."

Pike had always planned to enter the field of geology, and initially decided to attend UNI because of the welcoming atmosphere created by the faculty and students in the Department of Earth Science. "Classes taken in the Earth Science Department prepared me for field camp by providing me with the knowledge to assess the geology of regions of South Africa and translate that information into a map."

In her mapping excursions, Pike was able to visit many interesting areas.

"I enjoyed every moment of my South Africa field camp experience. I was able to visit numerous areas in South Africa, but the major areas I studied include Table Mountain in Cape Town, the Langebaan lagoon near the town of Langebaan, and the Cape Fold Belt Mountains near the town of Ladismith," said Pike. Some other really interesting areas the camp visited included



the West Coast Fossil Park, Botlierskop Day Safaris, the Cango Caves, and the southern tip of Africa.

While exploring these regions, Pike gained valuable skills, which she plans to use in her future endeavors.

"While in South Africa I learned so much about all aspects of geology and mapping techniques that allow me to think more critically about concepts, whether they relate to geology or not," said Pike.

After graduating, Pike is looking forward to attending graduate school for hydrogeology or paleontology and using knowledge that she has acquired from professors at UNI.

"I have had many influential professors. All of my professors have provided me with great advice, from learning the material in class, to advice on graduate school and life in general. Some of my professors have also really impacted me and have enabled me to find interests in many fields of geology, fields that I will be pursuing further in graduate school."

"my professors have provided me with great advice, from learning the material in class, to advice on graduate school and life in general,"

SUNDAY at the QUARRY

On Sunday, October 6th, the UNI Earth Science Department celebrated Earth Science Week by participating in the Sunday at the Quarry event. This annual event is sponsored by the BMC Aggregates and provides a chance for the general public to learn more about Earth Science. Various state and local groups offered educational activities for the young and young-at heart. Visitors could also smash some limestone chunks in search of fossils or calcite crystals, or travel down into the quarry itself. An estimated 750 people braved the cloudy and drizzly weather and partook of the festivities at the Raymond Quarry just east of Waterloo.

This year's theme was Our Resourceful Earth, and like past years, the UNI Earth Science Department had a strong showing. Kyle Gray asked visitors to match common household items (like drywall) with their

associated Earth materials (such as gypsum). This activity was first put together by Jim Walters and was a huge success with the younger kids. Chad Heinzl had people map rocks in a small sandbox filled with different types of rocks. Several majors from the Earth Science Department (including a few teaching majors) assisted with the activities and had fun interacting with the public. Jim Walters and Lee Potter greeted visitors down in the quarry and explained the stratigraphy exposed on the quarry walls. Our newest faculty member, Alexa Sedlacek, also popped in for a while. For some reason, Siobahn Morgan thought that a thick cloud layer was a sufficient excuse to avoid setting up her telescope for viewing the sun.

Despite the rainy day, the event was a success, and we look forward to the 2014 event.



from emeritus



WAYNE ANDERSON
PROFESSOR EMERITUS OF GEOLOGY &
DEPARTMENT HEAD 1970-1995

The request for a blurb for the annual Earth Science Newsletter has arrived as we are preparing for Thanksgiving 2013 in Cedar Falls. We are looking forward to a family gathering here for the holiday. The past year has been a pretty good one. Jan and I celebrated our 55th wedding anniversary in June. In October, we attended the reunion of our Keokuk High School class of 1953. Sixty years had taken its toll; several classmates had died during the last decade. Only 18 of a class of about 150 were present; so we aren't kidding when we say that we are very thankful to be "alive and kicking."

During late April, we took a two-week trip to West Texas, including time spent in the Davis Mountains, Marathon Fold Belt, and Big Bend National Park. Our trip was all about birding this time, but lots of good memories returned, related to several UNI spring break trips to Big Bend country. The birding was excellent! It took two long hikes into the Chisos Mountains, but we did see and hear the elusive and rare Colima Warbler in Boot Canyon. We saw our first Blue Grosbeak in the Marathon Fold Belt. Several other bird sightings were new to us, so overall it was a great trip.

From June to mid-October, we were at our mountain cabin in rural Custer County Colorado. All seven of our grandkids visited at various times, and we enjoyed some hikes and outings together. Jan and I worked in some side trips to the Gunnison and Crested Butte areas of Colorado where Jim Walters once took UNI students to participate in Alpine Studies programs. Crested Butte is known as the "Wildflower Capital of Colorado," and it did not disappoint. We also tried our hand at some kayaking at the Blue Mesa Reservoir, near Gunnison. In our part of Colorado, June was extremely dry, and forest fires were a major problem near Canyon City and Colorado Springs. The closest fire to us was about 30 miles away, where most of the tourist attractions at Royal Gorge were destroyed. The threat of fires spurred us into action - the "action" being spreading 15.3 tons of crushed Precambrian granite around the border of our dwelling and storage shed. While spreading some of the rock, I smelled something very strange and kept looking around for a dead animal such as a chipmunk or ground squirrel. Much later, I found the source of the odor. The next day, I spotted a large, very dead and very "smelly" black bear, partially hidden by a bush. The local wildlife officer hauled it away and indicated that the dead bear was a mature male, recently in the prime of its life. The bear had a small wound in its throat. Was the bear injured in a fight with another bear or had it been shot? We never learned the outcome.

July, August, and September were much wetter than normal in Custer County. We escaped the major flooding that damaged large areas of northern Colorado. Over the course of the summer, we got in lots of nice hikes in the local Sangre de Cristo Range and the nearby Wet Mountains. We are the oldest members in our hiking group and often the slowest. Still, there is much to be thankful for, and we are pleased that we can still get out and enjoy the great outdoors! Best wishes to UNI graduates and friends.

LYNN BRANT

PROFESSOR EMERITUS OF GEOLOGY

It's nearing the end of another year, and Earth has gone around the sun again. This is the time to greet old friends and remember those who are no longer with us as we take joy in celebrating new friends. I'm glad to have made it around the sun once more. Going around the sun is a concept that would have meant nothing to our distant forbearers. I have quite often thought about how our knowledge of the size and arrangement of the universe has given us a different sense of our place in the world. A few centuries ago, people thought in terms of only thousands of miles to all that exists. Now we think in terms of billions of light years and a world billions of years old. Likewise, not many generations ago, people had no knowledge of the microscopic. Amoebas, bacteria, and diatoms (you knew I would get around to those) could not be imagined. One has to wonder what people in the future will be talking about that we are now unaware of. That's why we build atom smashers, spaceships, and microscopes - why we have universities.

Speaking of diatoms, I have been looking for those single-celled algae in 55-million year-old coal. After attending a diatomite workshop at Iowa's Lakeside Lab in June, I started to examine coal from Montana and North Dakota. So far, I've had no luck, but if I find any, you can be sure you'll hear about it next year. The North American Diatom Symposium was held this year in Bar Harbor, Maine, and because somebody has to attend these meetings, I sacrificed my time and resources to spend warm summer days by the ocean. It was hard!

Betsy and I have been in some 26 states and two Canadian provinces this year - from Maine to California and Montana to North Carolina. We are trying to warm the planet by burning all that gasoline. And as I write this blurb, the world outside my window could use a little warming. Winter has arrived in Cedar Falls.

Here's wishing you a happy and prosperous year as we go around the sun one more time.

2013 OUTSTANDING EARTH SCIENCE TEACHER AWARD WINNERS

Outstanding Earth Science Teacher (OEST) awards are given for "exceptional contributions to the stimulation of interest in the Earth Sciences at the pre-college level." Any teacher or other K-12 educator who covers a significant amount of earth science content with their students is eligible. Ten national finalists are selected, one from each NAGT regional section. Some sections also recognize state winners. Individuals may submit an application themselves or nominate a colleague for the award.

MARY LESTINA

is in her twelfth year of teaching at City High School in Iowa City, Iowa. She currently teaches Ecology, Physical Geology, and Weather and Climate trimester electives for juniors and seniors, senior level Physics, and freshmen level Foundations of Science III. Mary graduated from the University of Northern Iowa with a Bachelor's of Science Degree in 2000, majoring in All Sciences and Earth Science Education with a minor in Meteorology. She earned her Master's of Science Education Degree from the University of Iowa in 2005 with an emphasis in Earth Science. In 2010, she was awarded the Excellence in Science Teaching Award from the Iowa Academy of Sciences.



As an active member of the Science Department, Mary has worked on curriculum review and standards alignment projects and was part of a team of teachers recognizing the need to extend the Earth Science offerings through Earth Science Trimester Electives. She has worked with science and special education teachers incorporating reading strategies, differentiated learning, and understanding by design strategies into her classroom, giving students the best experiences possible. Mary is an active member of the National Science Teachers' Association and the Iowa Academy of Sciences (IAS), presented at several national and local science teacher conferences, and has served as IAS Membership Committee Chair and as a member of the IAS Recognition Committee.

Mary has sponsored the Science Club since 2000, and in the past has sponsored the Environmental, Rocket, and Global Perspectives Clubs at City High School. Mary's teaching philosophy is to encourage all students to connect their lives to their education. Her positive attitude, high expectations of every learner, willingness to improve, and a value of every student's unique abilities makes learning more meaningful for students within her classroom.

(continued)
From *the* Department Head
SIOBAHN MORGAN

If you have the chance to attend one of these events, or to present your own experiences to a group of youngsters, I'd strongly urge you to do so.

For myself I've continued to teach an array of astronomy courses and continue with my own outreach activities with the weekly observatory or planetarium shows. This fall we had nearly 400 visitors to the McCollum observatory - including students from Waterloo schools, Hawkeye Community College and two groups of boy scouts (and parents). I was also able to travel to Poland to present results of my research on variable stars, and do a little bit of tourism (and have some pierogis as well).

Please keep in touch; we are always interested in our alumni's many activities and achievements. And as usual, I would like to thank you for your continued support and interest in our students' many activities.

IMPACT

Impacting Achievement with Collaborations and Technology (the IMPACT Program)
By Alan Czarnetzki, IMPACT management team member

The IMPACT Program began its eighth year of programming in July 2013 after receiving a three-year grant from the Iowa Board of Regents through the Title IIA Improving Teacher Quality State Grant Program for Higher Education. The grant management team at UNI includes Doreen Hayek and Lori Seawel (Information Technology Services – Educational Technology), Marcy Seavey (Iowa Academy of Sciences) and Alan Czarnetzki (Earth Science). Eight middle and high school teachers are participating in the 2013-2014 program year. Participants attended a two week summer institute on the UNI campus in July 2013 and are receiving on-going support via the Iowa Communications Network, webinars, and school visits by the grant management team. The goal of

IMPACT is to provide participating teachers with sustained, intensive professional development that results in demonstrable and measurable improvement in student academic achievement in mathematics and science. The content areas we focused on were weather analysis and forecasting (using materials developed by the STORM Project in the Department of Earth Science), GLOBE (Global Learning and Observations to Benefit the Environment) protocols for making scientific measurements, and inquiry techniques for the science classroom. Participating teachers develop two Technology Integration Action Plans (TIAP) for their classroom using STORM and GLOBE content. Many of the current and past participants will be presenting on implementation of their TIAPs and the resulting student projects at the Spotlight on Technology Day, scheduled for February 27, 2014, on the UNI campus. IMPACT participants receive a modest stipend and can register for graduate credit.



If you are a middle or high school teacher, please visit http://www.uni.edu/iect/impact/about_impact/ for more details about the programming IMPACT will be offering in summer 2014.

A TRIP TO... PARTANNA, SICILY

Four UNI Earth Scientists embarked on an adventure this past summer near Partanna, Sicily. Dr. Chad Heinzel (Associate Professor of Geology) led three undergraduate students (Angela Petersen, John Chesley and Victoria Arreola) in geoarchaeological field research. Our preliminary objectives were to begin developing two data sets: 1) characterization of Partanna, Sicily's, natural resources (clay and stone), and 2) confirm the presence of a geoarchaeological record capable of addressing questions surrounding the Neolithic Revolution (6000 BC). We collected over one-hundred geologic (clay, stone, and ceramic) samples. Analyses (chemical and physical) of these samples are facilitating interpretations that directly tie western Sicily's prehistoric communities with their geologic environment, providing a 'window' into their lives.

Our efforts have identified an abundance of natural resources as well as a robust archaeological record dating back to the Mesolithic (10,000 BC). One of the most promising finds was a paleosol (buried soil) with significant cultural materials! These artefacts (lithic and ceramic) date to the Late Mesolithic to Early Neolithic. This paleosol may represent a soil, 'natural time-capsule', of the Neolithic Revolution, or time when humanity was evolving from

hunting/gathering to agrarian lifestyles! In addition to identifying and characterizing the natural resources and artifacts, we constructed a series of Geographic Information Systems (GIS) maps that will serve as the basis for future work investigating western Sicily's prehistoric landscape/climate changes, settlement/labor patterns and archaeological site prospecting. By characterizing the interrelationships between humanity, natural resources, and climate variability, our research aims to accurately portray and learn from the geoarchaeological record. "We hope to learn from the past, engage the present, and build a promising future!"



30 YEARS AGO AT UNI:

THE TWO-HUNDRED POUND GORILLA IN THE SINKHOLE

Currently, there is a somewhat-irritating ad running on cable television. The ad shows a husband and wife discussing their financial situation and then cuts to a gorilla who says "but don't listen to me, I'm just the 800-pound gorilla in the room." The gorilla is intended to be a metaphor representing the need for long-range financial planning, something that is obvious but often ignored. Some bloggers have criticized the ad as being a mixed metaphor and point out those creators of the ad should have used "the-elephant-in-the-room" metaphor if they were talking about something that people know (or see) but still choose to ignore. It doesn't matter. My story deals with neither elephants nor metaphors.

However, one large gorilla is involved. What I write about happened nearly 30 years ago when a "200-pound gorilla" visited the 1984 Tri-State Geological Field Conference in north-central Iowa. One of the field trip stops was a karst region, north of Floyd, Iowa, where numerous well-developed sinkholes are present in farm fields and pastures. The sinkhole that I selected for a field stop was connected to an underground cave large enough to accommodate a few people, or one large gorilla.

I had arranged for a departmental colleague to enter the sinkhole and associated cave prior to the arrival of field-trip participants.

As explanations and discussions took place around the periphery of the sinkhole, I heard excited comments coming from the gathered group: "Look, something is moving down there!" "It looks like a large animal of some kind!" "I see a hairy head and arm!" "Oh, my gosh, it's a gorilla!"

The "gorilla" turned out to be UNI geology professor Kenneth J. De Nault, attired in a rental outfit from a local costume shop. The 200-pound primate added some surprise, excitement, and humor to the field conference. He even directed traffic at selected stops, much to the amusement of those passing by. Who says Midwest geology is dull!



(Anderson, Wayne I. 2009. The 200-Pound Gorilla in the Sinkhole. GSA Geo Tales IV, Memories from GSA Members, Boulder, CO. p. 33)



GAMMA SIGMA CHAPTER SIGMA GAMMA EPSILON

Another exciting year has flown by, and it has brought on a wealth of new experiences and events to make 2013 a great year for SGE. Last year we saw many of our active members graduate and move forward with their lives, but those voids have since been filled with new members who will certainly continue to help SGE grow.

We currently have 21 active members in the Chapter. During spring semester last year, we initiated four new members and an additional five members in the fall. The current officers were elected last April and include: President John Chesley, Vice President Victoria Arreola, Secretary Robert Spielbauer, and Treasurer Madison Pike.

The members of SGE have ardently given their time and volunteered for events such as Sunday at the Quarry during Earth Science Week. Our members helped visitors identify rocks and aided with any questions they may have had about our earth and its resources. Another volunteer activity that some of our

members helped out with was the annual event known as Snapshot. For this event, we worked with the Black Hawk Soil and Water Conservation District and the Iowa Department of Natural Resources to test the water quality at various locations along Dry Run Creek. We looked at the quality of water within a small time interval to more accurately help treat possible pollutants in the water. One of our biggest accomplishments this year was becoming Blue Zone Certified, showing how our organization is committed to well-being.

A number of social events have been held this year in order to help strengthen the SGE community at UNI. Our biggest social event was our welcome back lunch for students and faculty at the start of the academic year. We have also organized events like movie nights, the annual holiday party, and some of our members regularly participate in Geo-Thursday to exchange stories and laughs with their fellow peers. We are currently planning a showing of a documentary called "Switch"

that discusses energy and how the transition of energy resources will shape our future.

This year in order to help SGE raise money we decided to make t-shirts. Making t-shirts for SGE had been talked about for well over a year, but this year we finally managed to make it happen. SGE still sells pop, candy, and other snacks in our student room as another source for raising money.

After seeing many of our members graduate from UNI, taking the next big steps in their lives, we are thankful for their participation and help in making Gamma Sigma what it is today. We encourage our new initiates to continue being active in SGE and bring new ideas to the table to make SGE an even greater organization. If you would like to follow us throughout the year, make sure to check out our Facebook page at www.facebook.com/unisge. The Gamma Sigma Chapter of SGE thanks you for all your support!

John Chesley
Chapter President

IN MEMORIAM

SAM WOOD AND JACOB WOLTER

Sam Wood, 83, of Menomonie died Monday, February 11, 2013. Sam was born May 18, 1929, in Oelwein, Iowa to Sam and Lucile (Smith) Wood.

He married Lois Iverson on August 19, 1950, in Briceyn, Minnesota. He served in the Navy on the USS Sicily during the Korean War and was awarded the Navy Unit Commendation ribbon for his service.

Sam completed his undergraduate degree at the Iowa State Teachers College, now known as the University of Northern Iowa. He later obtained a master's degree from the University of Iowa followed by post-graduate studies at the University of Missouri-Columbia. Sam had a long career in education starting with teaching positions in several Iowa cities. He then became the Guidance Director for the Fond du Lac, Wisconsin, school district. In 1964, he

began his career at UW-Stout as the Assistant Registrar.

He retired in 1991 as the Assistant Chancellor for Student Services/Dean of Students. At that time, the Stout Student Association medalion was renamed the Samuel E. Wood Medallion award.

Sam is survived by his wife Lois and their four children, Mark (Julie) Wood, Dale (Robin) Wood, Roger (Heidi) Wood and Diane (David) Flowers. He has 11 grandchildren and 2 great-grandchildren and is also survived by his sister-in-law Mary (Robert) Stensland, Sam was preceded in death by his sister and brother-in-law, Dorothy and Tony Stucky. His greatest joys in life were for his family and working with the students at UW-Stout. The family would like to thank the Menomonie Mayo Medical staff for their care and compassion in his final hours.

Jacob "Jake" Michael Wolter, 27, of Dubuque, Iowa, passed away on Thursday, December 5, 2013 at Mercy Medical Center after a sudden turn with a life long battle.

He was born on May 25, 1986 in Dubuque, Iowa the son of Michael and Mary Jane (Kueter) Wolter. He attended St Joseph The Worker grade school, graduated from Wahlert High School in 2004 and attended UNI where he graduated in 2008.

He married Lindsey Massey on September 1, 2012 in Wauke, Iowa. Jake was working at the FSA Office in Epworth, Iowa as a Soil Conservation Technician. He was a member of Ducks Unlimited, Pheasants Forever and a life member of the NRA.

Jake was an avid outdoorsman and enjoyed 4-wheeling with his four legged friend Duke. But when he wasn't hunting or fishing he could be found cheering on his favorite teams the Iowa Hawkeyes, Miami Dolphins and Chicago Cubs. Jake lived every day as an adventure and always with a smile. He was a very dedicated and

loving husband, son, brother, grandson and uncle.

He is survived by his wife Lindsey, his parents, Mike and Mick Wolter, of Dubuque, brother, Nathan (fiance Megan Vande Vegte) Wolter, of Cedar Rapids, Iowa, mother and father-in-law Dave and Kim Massey, of Wauke, Iowa. Sister-in-law Stephanie (Scott) Adams, of Grimes, Iowa, and his nephew Cade Adams. His grandparents; Imelda Kueter, Duane and Barbra Wolter, and many aunts, uncles, and cousins and his faithful companion "Duke".

He was preceded by his grandfather and fishing buddy Gregory Kueter. In lieu of flowers a Jake Wolter memorial fund has been established.

The family would like to thank the team of doctors and nurses in Dubuque and at The University of Wisconsin Clinics and Hospitals for their years of hard work and determination. Especially Dr: Donald Reyerson, Dr: John Hokenson and Dr: Mark Moore.

SEMINARS

SPRING 2013

Dr. Dylan Blumentritt
University of Minnesota
Erosional History of Southern Minnesota: Lessons from Lake Pepin and Atmospheric Radioisotopes

Dr. Alexa Sedlacek
The Ohio State University
The End-Permian Mass Extinction and Early Triassic Recovery: Isotopic Evidence for Continued Volcanism and Enhanced Weathering

Dr. Jie Xu
George Washington University
Complex Effect of Mineral-Water Interfacial Chemistry on Microbial Cell Viability and Biofilm Formation

FALL 2013

Dr. James Rougvié
Beloit College
Tuff Stew: The Cathodoluminescence Record Of Alteration of Volcanic Rocks in the Sierra Nevada Arc

John DeGroot
UNI Geography
Activities of the UNI Geoinformatics Training, Research, Education, and Extension Center

Dr. Brian Hynek
University of Colorado
The Habitability of Early Mars and Space Rocks from the Bottom of the World

Madison Pike Geology B.S. and
Alison Schell Geology B.S. & Earth Science B.A.
2013 Summer Field Camp Experiences

Stephanie Hogan Earth Science BA & Earth Science Teaching and
Christian McLaughlin Earth Science BA
Into the Caves – 2013 Summer Internship Experiences

Dr. Peter Behroozi
Giacconi Postdoctoral Fellow
Space Telescope Science Institute, Baltimore, MD from the First to the Last: The Entire Star Formation History of the Universe

Dr. Alexa Sedlacek
UNI Earth Science
End Permian Mass Extinction and Early Triassic Recovery: In Search of a Boundary

INTERNSHIPS

2013

Justin Edwards
Earth Science
Wapsipinicon State Park
Recreational Aide
Spring 2013

Ariel Williams
ES Interpretive Naturalist
UNI Museum
Museum Intern
Spring 2013

Andrew Klenk
Earth Science
Greens/Fairway Maintenance
Beaver Hills Country Club
Summer 2013

Lorraine Scarf
Earth Science & Environmental Science
Planetarium/Outreach Assistant
Grout Museum
Summer 2013

Dillon Vosika
Earth Science
Conservation Aide
Butler County Soil & Water Conservation District
Summer 2013

Christian McLaughlin
Earth Science
Park Maintenance & Naturalist
Maquoketa Caves State Park
Summer 2013

Stephanie Hogan
Earth Science BA & Earth Science Teaching
Volunteer in Park (VIP)
Oregon Caves National Monument
Summer 2013

Nathan Jacobsen
Earth Science
UNI Museum
Museum Intern
Fall 2013

Kelsey Stevenson
Earth Science
Planetarium/Collections Intern
Grout Museum
Fall 2013

STUDENT RESEARCH

CHAS SUMMER
UNDERGRADUATE RESEARCH
SYMPOSIUM
AUGUST 2, 2013
UNIVERSITY OF NORTHERN IOWA

Victoria Arreola and Dr. C. Elliott Heinzl
Exploring Western Sicily's Prehistoric Transition into Agriculture through Geoarchaeology

John Chesley and Dr. C. Elliott Heinzl
Delineating the Interrelationships between Naturally Occurring Resources and Western Sicily's Prehistoric Settlement Patterns

HONORS RESEARCH
CONFERENCE
APRIL 13, 2013
UNIVERSITY OF NORTHERN IOWA

Cara Wright
A Bank Erosion Hazard Index (BEHI) Study of Dry Run Creek, Cedar Falls, Iowa

THE GEOLOGICAL SOCIETY OF
AMERICA ANNUAL MEETING
OCTOBER 27-30, 2013
DENVER, COLORADO

Angela Petersen, Zach Lenth and Dr. C. Elliott Heinzl
Mapping the Surficial Geology of Bremer and Black Hawk Counties (Iowa), A Five-Year USGS/EDMAP/UNI Investigation

Victoria Arreola, John Chesley, Michael Kolb & Sebastiano Tusa
A Preliminary Geoarchaeological Survey of Partanna, Sicily (The Belice River Valley)

SCHOLARSHIPS

2013

Jordon Altenhofen, BA Earth Science
Academic Achievement Award

Victoria Arreola, BA Earth Science & Biology: Ecology & Systematics
Summer Undergraduate Research Program (SURP) Scholarship

Taylor Garton, BA Earth Science & Music: General Studies
CNS Earth Science Scholarship

Robin Griffith, BA Earth Science
Donald and Marguerite McKay Scholarship

Alicia Herzog, BA Earth Science
Academic Achievement Award

Nathan Jacobsen, BA Earth Science
Academic Achievement Award

Angela Petersen, BA Earth Science
Louise Hearst Speer Memorial Scholarship

Tiffany Smith, BA Earth Science
Donald and Marguerite McKay Scholarship, Students First Scholarship Nominee, Academic Achievement Award

Robert Spielbauer, BA Earth Science, Environmental Science & Biology: Ecology and Evolution
CNS Earth Science Scholarship, Academic Achievement Award

Jared Trimble, BA Earth Science
Academic Achievement Award

Melissa Zimmerman, BA Earth Science
Larry Kelsey Memorial Scholarship

Casey Clark, BA Earth Science Teaching
Bill & Teri Brecht Scholarship, Academic Achievement Award

Larry Shonk, BA Earth Science Teaching & History Teaching
Dean's Student Award Nominee

Zachary Lenth, BA Geology
CNS Earth Science Scholarship

Collin Barker, BA Geology
Student Opportunities for Academic Research (SOAR) Award

Anthony Boxleiter, BS Geology
Student Opportunities for Academic Research (SOAR) Award
MCAPS Scholarship

John Chesley, BS Geology
Summer Undergraduate Research Program (SURP) Scholarship, Academic Achievement Award

Madison Pike, BS Geology
Jan Harken Scholarship, C.W. Lantz Undergraduate Scholarship Nominee, Wayne & Jan Anderson Summer Field Camp Award, Academic Achievement Award

Joseph Reinders, BS Geology & Biology: Biomedical
CNS Earth Science Scholarship

Alison Schell, BS Geology, BA Earth Science
CNS Earth Science Scholarship, W.A. Tarr Award, NASA Scholarship Award-Iowa Space Grant Consortium, Wayne & Jan Anderson Summer Field Camp Award & Academic Achievement Award

Cara Wright, BS Geology
MCAPS Scholarship, Purple and Old Gold Award, Wayne & Jan Anderson Summer Field Camp Award, National Association of Geoscience Teachers Scholarships for Field Study & Academic Achievement Award

Ariel Williams, BA Earth Science Interpretive Naturalist & Anthropology
Charles J. Hearst Scholarship, Clifford McCollum Scholarship, C.W. Lantz Undergraduate Scholarship Nominee & Academic Achievement Award

GRADUATES

2013

May 2013 Graduates
Jordon Altenhofen, B.A. Earth Science
Anthony Boxleiter, B.S. Geology
Wesley Gatlin, B.A. Earth Science
Benjamin Harken, B.A. Earth Science
Zachary Lenth, B.A. Geology
Cody Mireles, B.A. Geology
Dustin Quade, B.A. Geology
Andrew Sheets, B.A. Earth Science
Interpretive Naturalist
Elizabeth Welder, B.A. Earth Science

Summer 2013 Graduates
Alicia Herzog, B.A. Earth Science
Andrew Klenk, B.A. Earth Science
Interpretive Naturalist
Cara Wright, B.S. Geology
Zach Zubrod, B.A. Geology

Fall 2013 Graduates
Erin Boyd, B.A. Earth Science
Casey Clark, B.A. Earth Science Teaching
Christian McLaughlin, B.A. Earth Science
Angela Petersen, B.A. Earth Science
Sarah Siperstein, B.A. Earth Science
Kelsey Stevenson, B.A. Earth Science & Anthropology
Melissa Zimmerman, B.A. Earth Science

1960's

MARY ANN (MARSH) SMITH

B.A. Earth Science ('68)
M.A. ('71) Earth Science Education
Princeton, IL

Retired educator - I am thoroughly enjoying retirement, spending more time with our grandchildren, reading, traveling, volunteering and a fair amount of loafing. I love to hear about the department and send special greetings to Dr. Wayne Anderson.

1970's

ELDON BIRD

B.A. Earth Science ('70)
M.A. Earth Science ('72)
Bettendorf, IA

Retired Educator - Enjoying retirement with travel and viewing the geologic wonders throughout the USA! Also spend time on the golf courses and bass fishing! After all the years of work, I have now committed to a life of play!

Our granddaughter has just been accepted at UNI - 4th generation of Panther Pride!

BILL BRECHT

B.A. Earth Science Teaching ('72)
St. Charles, MO

Retired educator - Since retiring from teaching in 2002, I've been working part-time at the Lewis & Clark Museum in St. Charles. My wife Teri (UNI '73) and I enjoyed attending the Earth Science Awards Banquet and visiting the campus last April.

LYLE SILKA

B.A. Geology ('72) & M.S. Geology ('75)
Oklahoma State Univ.
Haymarket, VA

Consulting Hydrogeologist
Silka Consulting Services Inc.

Providing hydrogeologic consulting, investigation & remediation for subsurface contamination. Last few years mainly involving petroleum releases, dry cleaners, and As-Pb in old orchards. While my opinion is somewhat dated, I could not have done better than UNI. However, I'm not quite fossilized yet!

NORM MEADER

B.A. Geology ('73) M.S. ('77)
Tucson, AZ

Retired Staff
Department of Geosciences,
University of Arizona

This past year has kept me busy trying to protect the San Pedro Valley in southern Arizona, where I have a cabin and a community of friends. We have been struggling against a gigantic transmission system in the valley and working to establish a National Wildlife Refuge. In early February, my geology buddy Russ Jacobson visited Tucson again for the Tucson Gem and Mineral Show, and we had a great time wandering around looking at fossils and minerals. Other trips during the year included visiting the Pinacate Volcanic Field in northern Sonora and the Guadalupe Mountains in west Texas. I also visited my family in Iowa and returned through Colorado, escaping the state the very morning that the rain began that devastated the Front Range. Retirement keeps me busier than ever. I need a rest sometimes!

JIM JANSSEN

B.A. Geology ('72)
M.A. Ed Psych-Teaching ('80)
Waverly, IA

Retired - Carla and I continue to enjoy the benefits of retirement--time to travel to see family, have fun, play, do community service, and a have a more balanced life.

MARK BOLSON

B.A. Geology ('73)
Thornton, CO 80233

Retired

KAREN ASHBAUGH

B.A. Science ('74)
Fairport, NY

WW WebSphere Channel Sales
IBM Software Group

Employed in software channel sales with IBM Software Group - Application Integration Middleware business. Thirty three year IBM career has included U.S. field sales, mainframe hardware planning, network services planning, WW software business development and WW software channel sales. Summer time explorations to

the Maine coast - Acadia National Park and winter excursions to the Canadian Rockies. Value of the earth science curriculum to my roles at IBM...disciplined study habits, project management skills as well as exercising concepts.

DEBORAH MILLER

B.A. Geology ('74)
Des Moines, IA

Specialist QA/Testing
Nationwide Insurance

I'm a hacker. Our company software developers write programs which I both prove work properly and then try to hack. My retired history teacher husband, Denny, and I are doing a lot of traveling, now that our sons both have families of their own. Most recently we cruised along the west coast of Italy and southern Spain. High point: Pompeii - much bigger than I expected. Good mix of our interests: archeology, geology and history.

MICHAEL ROCHE

B.A. Geology ('74)
Apache Junction, AZ

Retired

LESLIE H. KNAPP

B.A. ('75)
M.A. Earth Science ('77)
Minneapolis, MN

AECOM
Associate Vice President

I am currently working on environmental review, permitting, and construction compliance for transmission line, pipeline, mining and other projects. AECOM's new office is in downtown Minneapolis, so I get to ride my bike in good weather and the bus in bad weather. Daughter Jennifer got married last May and lives in Burbank, CA. Son Jon lives in Portland, OR. So, we have great places to visit.

KEN THOMPSON

B.A. Earth Science-Teaching ('75)
M.A. Earth Science ('85)
Emporia, KS

Professor, Earth Science/Physical Sciences
Emporia State University
I am in my 22nd year at Emporia State University with many of my responsibilities associated with science education. I am

beginning to think about retirement. How soon I retire will depend on whether a couple of proposals submitted recently get funded. Wife, Deb (BA, El. Ed 1978) received recognition as Emporia's 2014 Teacher of the Year and continues to teach second grade students. Son, Tyler, married Cassie Johnson on April 27, 2013 and we are happy to welcome her to our family. He is employed as a chemical engineer in the Beaumont, TX area. Should any fellow Panthers travel on Interstate 35 through Emporia, feel free to contact us. We can serve as a temporary stop or an overnight stay.

STEVE LITTLE

B.A. Earth Science Teaching ('76)
& M.A. ('86)
Clive, IA

8th Grade Science Teacher/Dept.
Chairperson & Coach for Girls & Boys
8th Grade Basketball
West Des Moines Community
School District

I am currently in my 37th year of teaching science. I spend much of my time with my "significant other" (going on 9 years) traveling and dining. My son will be hopefully graduating from Graceland College within the next year. I am still a "die-hard" shareholder of the Green Bay Packers even though they are testing my patience this year.

DEBBIE YERKES

B.A. Geology ('78)
Columbia, SC

Government Information Librarian
University of South Carolina

Nothing new to report, except that I am looking to retire in 4 years. Just wanted to say HI to all my fellow grads from the 70's.

1980's

TIMM SCHWARZ

B.A. Geology ('82)

Greetings Everyone! Hope all is well. I'm doing great out in lovely Montana. I'm starting my 26th year with a ski pass at Big Sky Mtn. and am excited another ski season is starting!

This spring I was fortunate enough to go on my 8th in a row rafting trip down the Colorado River & the Grand Canyon! The geology of it from the bottom is breathtaking.

Hope everyone is fine and come visit Montana!

KENDALL MATTSON

B. A. Earth Science and Biology Minor ('88)
Walcott, IA

Technical Instructor for Heavy Equipment
John Deere

It has been another super busy year training technicians on Hitachi mining shovels and John Deere electric drive loaders. Mining for gold, copper, and coal is going strong in North and South America, and I still enjoy getting close to the Earth. The UNI library was where I first met my wife; we have now been married for 25 years. We have four children, the oldest of whom is now attending Iowa State. I have many good memories from UNI and would like to go back to see all the changes on campus.

BRIDGET MCINTYRE JACOBSON

B.A. Earth Science ('88)
Urbandale, IA

Elementary School Nurse
Blank Children's Hospital

After years working with the National Park Service and National Forest Service in first firefighting and then in Prescribed Natural Fire Burning and Fire Behavior, I went back to school and got my degree in nursing. I've been an RN now for 20 years. I first worked for ten years in the Pediatric Intensive Care Unit at the University of Wisconsin in Madison. When I had our family I changed positions from the PICU to school nursing. So happy to be back in Iowa. Tell Dr. Anderson I take my daughter to the Rockford Fossil Pit at least once a year. I love that place!

KIM BUELT

B.A. ('89) Earth Science Education
M.A. ('93) Science Education
M.S. ('08) Educational Leadership
Cedar Rapids, IA

High School Associate Principal
Linn-Mar Community Schools

Having started at Linn-Mar upon my graduation from UNI, I am now in my 25th year here – time does fly! I taught Earth Science and Chemistry for 18 years and have now been an Associate Principal, going on my 7th year. I oversee 9th & 10th graders, as well as the Fine Arts Program.

My son is a junior in college, studying Civil Engineering – ALL of those Legos I purchased over the years are about to pay off! In our spare time, we like to fish, boat, walk the family beagle, and just be outdoors in general.

PAT LYMAN

B.S. Geology ('89)
Cedar Falls, IA

Happily retired.....THRILLED to be retired - Health continues to be stable and transplanted kidney still functioning as they would like it to be. Still volunteering at grade schools teaching rocks and minerals to fourth graders. Playing golf as the weather allows, shooting trap and skeet more now than golfing. Mary and I travel when opportunities arise; the big one for the year was a cruise to Alaska with friends. We spend part of the winter on South Padre Island, clearing out of there before the spring breakers show up. Enjoying life and all it offers.

1990s

PAUL DENEUI

B.A. Science ('91)
State Center, IA

Science Teacher
West Marshall Schools

GAYLEN HIESTERMAN

B.S. Geology ('92)
Cedar Falls, IA

Operations Manager
Cardno ATC

The summer of 2013 included a family trip to Cody, Wyoming, to visit family and explore Yellowstone National Park. The geysers and geologic features amazed us all. The wildlife viewing was fun with numerous close-ups with bison on the roads. The scenery is a much appreciated change to Iowa with not much topping the Beartooth Highway and the Silver Gate area. Other stops along the way out and back included the Corn Palace, Mount Rushmore, Savoy, SD and Devil's Tower. We're looking forward to what adventure we'll take in 2014!!

BRADLEY BLOCK

B.A. Earth Science and Natural History
Interpretation ('93)
Custer, SD

Chief of Interpretation
National Park Service - Jewel Cave National
Monument

Bradley entered his sixth year at Jewel Cave National Monument. He continues to enhance the interpretive programs and visitor services for the Monument.

This past year, he completed a \$512,000 remodeling project within the visitor center, upgrading the exhibits and displays.

The project not only focused on improving visitor experiences, it included aspects that complemented accessibility guidelines for all audiences.

For instance, rather than placing a cave map on a wall for visual appeal, a digital map was crafted and is showcased through a touchscreen monitor. This allows everyone the chance to scroll through the map at their leisure and locate specific passages, cave rooms, etc. For kids, a crawl-through tunnel was incorporated into the exhibit, encouraging them to become cavers for a day. Most noted was the creation of hand wands for individuals with sight limitations; the hand wands guide visitors through the exhibits and provide interpretive narration of each display. UNI alumni are welcome to visit the Monument and check out the displays on their next vacation to the Black Hills.

Bradley was also nominated for the NPS Freeman Tilden Award this past fall. He was one of six candidates within the Midwest Region to potentially move forward into the national ranking. Although he was not selected, it was truly an honor to be nominated by his peers.

Bradley's wife, Cherri, entered her sixteenth year at Custer High School. She continues to teach English and coach cheerleading. This past fall, her cheerleading program transitioned from sideline cheer to competitive cheer. At their first contest in October, the cheerleaders took fourth place in the state.

Logan turned 14 this year, and Darian is 11. Each of them stay busy with school, activities, and after-school sports. Logan ran cross country this year as an 8th grader and took first place in the JV meet. Darian's love remains with dance, although she just started basketball and seems to enjoy the competition. Like probably every alumni, the family keeps busy most every day (and night).

Bradley invites his fellow Earth Science majors to visit the Black Hills and give him a call at any time. Students interested in working for the National Park Service may also want to consider contacting Bradley for some position openings in 2014. Until then, best wishes to everyone for the winter months!

CINDY FREIBERG

B.A. Earth Science/Geology w/minor in Physical Geography ('94)
Osage, IA

Marketing & Sales Initiator
Gemini Inc.

I have taken a new position beginning in December at Gemini, where I am helping with marketing our new products and developing our key accounts. Our company is doing very well, and we have some very exciting new products that will help us grow in the next decade. Jim and I just celebrated our 38th wedding anniversary on Nov. 22nd. We are enjoying all eight of our grandchildren, who are all so unique. They love to talk about geology and astronomy with me and we encourage them all to see the science that surrounds them. I see the world through their eyes and it is a big exciting planet. As always, I stay busy traveling to MN and WI to enjoy the seasons and our family. Hope you are all well and enjoying life to the fullest. God bless you all.

GORDON KRUEGER

B.A. Earth Science and Environmental Planning ('93) & M.S. Environmental Science ('96)
Cedar Falls, IA

Environmental Safety Specialist
University of Northern Iowa

Currently the Hazardous Waste Manager and Radiation Safety Officer with the University. I obtained my certification as Hazardous Materials Manager in March of 2013. I have been married nearly 20 years to my wife and best friend Donita who I happened to meet in the Earth Science Department. She is also a graduate of UNI and has a minor in Earth Science. We have a daughter who is currently living in Kansas City with her fiancée David Jaffe who is a graduate of the University of Indiana. Great thing about working at UNI is I still get to visit the people in the Earth Science Department.

MICAH CUTLER

B.A. Earth Science & Geography ('96)
Iowa Falls, IA

GIS Coordinator
Hardin County, Iowa

JENNIFER ERICH

B.S. Geology ('96)
Houston, TX

ExxonMobil Exploration Company
Supervisor of Argentina Exploration
Operations

Hello Fellow UNI Alumni! I am still enjoying my job working on shale gas and shale oil exploration in Argentina. The travel is great, and the geology is diverse and challenging. My family is also doing well. My 6 year-old daughter Miranda has recently learned about the moon she was named after; she thinks that's pretty cool. I am still very disappointed that UNI decided to drop the Geology majors, it is such a great time to get a job in the petroleum industry if you graduate with a Master's degree! Hope Everyone is doing well, look me up if you are in Houston!

JASON MARTIN

B.A. Earth Science Teaching ('96)
Seoul Korea

Middle School Science Teacher
Korea International School

Back in the classroom after a nine-year sabbatical. After teaching in Egypt and Brazil our family moved back to the states where I entered the family business in Waterloo, IA (home). Our family decided to take a big step back into the overseas adventure and we landed in Korea. Leigh continues to be employed by UNI for the Out-of-State and Overseas Field Experience office, and I am teaching Middle School Science. Our girls, Willow (12) and Ayla (10), are adapting to the rigors of education in Korea. Life is good and we are blessed to be experiencing such a wonderful adventure. Hope everyone is doing well.

GINGER LAIDLAW

B.A. Earth Science ('98)
Des Moines, IA

Project Manager
RINAlliance

Married in 2011 to Jamie Laidlaw. Welcomed a baby boy, Samuel, in February 2013.

AMY FREIBERG MILLER

B.A. Earth Science ('99)

I continue to work as an RN at our community hospital and Jeremy is still with Malt O Meal. As the kids grow, so does the list of activities! Isaac is 11 and in 6th grade. He enjoys basketball, football, and baseball. Noah is 9 and in 4th grade. Noah enjoys swimming and history club, and wants to try soccer this spring. Hannah is now 6 and in 1st grade. She loves to read and stays busy with gymnastics and Girl Scouts. As a family we continue to try to camp in MN and WI as much as possible.

2000's

ANGELA M W SCHMITT

B.A. Earth Science ('00)
Oelwein, IA

Administrative Assistant & Fitness
Instructor & Wheaton Franciscan
Healthcare/William's Wellness Center

I just returned to UNI this fall to take post-BA classes for teacher licensure in all-science education. It's great to be back!

JACK L. NORTHRUP

Earth Science Education ('01)
Council Bluffs, IA 51503

Planetarium Director
King Science and Technology Magnet Center

This year I have been able to travel around the country meeting other planetarium directors and operators. It is fun to see how other astronomy educators handle teaching in the dark and manage their groups of children.

I am currently working with our local astronomy club and the school district to set up an Astronomy Day next spring. It has been interesting developing our own slant on the traditional Astronomy/Visit the Planetarium Day. I am still teaching 5-8 Astronomy and eighth grade Cisco IT Essentials.

NICK PAGE

B.A. Earth Science ('02)
Des Moines, Iowa

Environmental Specialist Senior
Iowa Department of Natural Resources

JONNIE R. BECKER

B.A. Earth Science Education ('03)
M.A. Secondary Science Education ('09)
Boone, IA

Science Instructor
Boone High School

I have been chasing my dream of the ideal classroom, and I was recruited to Boone High School. As the mother of two children, Leah and Riley, and wife to Charles, moving the family from our NE Iowa roots has been an adventure, especially exploring the geology of Ledges State Park with my bare feet in the creek. The family has discovered that rocks and trees are better than any park equipment.

I have discovered that you really can do whatever you decide to do. I was asked, "what classes would you love to teach?" My reply was "Earth Science of course!" For the third time I have started an Earth Science course set, and I am proud to say thoroughly enjoying Meteorology and Astronomy classes. I am hopeful to join back up with UNI this summer for developing problem-based learning opportunities for these courses to be used in 2014-15. Boone High School will be implementing a Research and Development Pipeline for all things STEM, and I plan to be an active part in helping transform our students into research scholars.

Whenever I think back to my years at UNI, I realize how deeply I was sculpted by those experiences, and therefore I am continuously grateful.

KADEN BORSETH

Earth Science Major, Geology and
Anthropology Minors ('05)
Decatur, GA

Education Program Manager - Earth Science
Programs and F.U.N. Volunteer Manager
Fernbank Museum of Natural History

All is well and good in Georgia. I am enjoying camping, hiking, and exploring all of the beautiful places Georgia has to offer. I've been working at the Fernbank Museum of Natural History for 2 years, and it is going well. I create and teach earth and physical science programs on topics like Chemistry, Weather, Earthquakes and Volcanoes, Astronomy, Paleontology and more. I also manage about eighty 12-18 year olds in our competitive year+ long volunteer program. The teens staff carts and teach various natural history topics to guests of all ages. I have a great time mentoring teens and teaching all of my favorite earth science topics! Megan's PhD program is going well, and she is already over halfway done. Time flies when you're having fun. If any of you are in Atlanta, come stop by the museum!

KEVIN THOMSON

B.S. Geology ('05)
Ankeny, Iowa 50021

Staff Geologist
Terracon

I have been a Geologist for Terracon Consulting Engineers and Scientists in Des Moines since March of 2006. My primary responsibilities include project management, soil and rock identification, stratification, lab coordination, soil and

rock testing and generating boring logs. I am currently working as project manager for the Northeast mixmaster reconstruction project. My duties consist of overseeing drilling operations, assigning lab tests, managing data, reporting and client services for the realignment of bridges, roads and ramps at the I-35 and I-80 interchange in Des Moines, Iowa. I live in Ankeny with my wife, Jennifer, and our beautiful baby boy Grayson. I enjoy travelling and attending concerts with my wife. However, most of my free time is spent reading Dr. Seuss books in funny voices, making silly noises by blowing on Grayson's tummy, playing peek-a-boo and changing diapers.

I hope my former classmates and professors are doing well. The knowledge I gained in the classroom and the life lessons cultivated on field trips have been instrumental in making me the geologist and person I am today. I intend to pass these insights on to the next generation of science nerds!

BOBBI BRACE

B.S. Geology ('07)
Lincoln, NE

PhD Student
University of Nebraska-Lincoln

Greetings everyone! I am in the first year of my PhD studies at the University of Nebraska-Lincoln researching calcareous nannofossil biostratigraphy. This October, I returned from a 60-day Integrated Ocean Drilling Program cruise on the JOIDES Resolution in the Japan Sea examining the evolution of the Asian Monsoon. It was a very exhausting, but incredibly rewarding experience. Now I am back to the daily grind attempting to make up for those two months. I hope this note finds everyone well, and if you are ever in Lincoln, let me know!

AMANDA EVEN

B.A. Earth Science ('09)
Silver Spring, MD

Coordinator for Adventure Trips
University of Maryland-College Park

I've been working for the Maryland Adventure Program (MAP) for three years. Exciting adventures with the program this past year included a service learning expedition to La Amistad International Peace Park on the border of Costa Rica and Panama, and week-long trip leader training capstones in the Florida Everglades and the Adirondacks. The opportunities at the University of Maryland are endless and keep me actively engaged. In addition to the

rewarding work I do with MAP, this year I've gotten more involved in other areas at the university. These opportunities include: serving as a staff adviser for Alternative Breaks, coaching for Transfer 2 Terp (a program that assists transfer students), serving on the Division of Student Affairs Learning Outcomes Committee, and teaching academic leadership courses for the School of Education.

This past November, I co-hosted the Association of Outdoor Recreation and Education (AORE) National Conference in College Park. The conference brought together professionals and students in the field of outdoor recreation and education to exchange information, promote the preservation and conservation of the natural environment, and address issues common to college, university, community, military, and other not-for-profit outdoor recreation and education programs. After two years of planning, it was rewarding to see the conference come to fruition.

When not working, I'm preparing for the next race. This past year, I completed the Delaware Marathon, the Smallwood Olympic Triathlon, and the Culpepper International Triathlon.

MARIA HOEKSTRA
B.A. Earth Science Teaching ('09)
Cedar Falls, Iowa

8th Grade Earth Science Teacher
Holmes Jr. High
Cedar Falls Community School District

Life is going so fast! My daughter, Adaline, is 3 years old now. My husband and I both work in the Cedar Falls area and love it here. We are enjoying the fast-paced world of being young professionals and parents. It is a crazy life, but very rewarding as well. Hope all is well at Latham.

JOE ZEITLER
B.S. Geology ('09)
Juneau AK

Production Geologist
Hecla Greens Creek Mining Co.

After leaving UNI, I headed to South Dakota to begin graduate work at the South Dakota School of Mines and Technology. I finished my Master's Degree in Structural Geology and Ore Deposits in the fall of 2012. Prior to that I had moved up to Juneau Alaska in July 2012 to begin working at the Greens Creek Mine. At the mine, my duties include face sampling and underground mapping in addition to

working closely with the other geologists, engineers and miners to ensure we are extracting ore in a profitable manner. Probably the best part of my job is knowing that every day is different and never boring. I hope that everyone out there is well and enjoying their time after UNI as much as I.

2010'S

SEAN NEWLIN
B.S. Air Quality ('10)
Cedar Rapids, IA

Environmental Scientist
Stanley Consultants Inc.

JONATHAN LAUNSPACH
B.A. Geology ('11)
Duluth MN

GIS Analyst
SRA International

This past Summer, I finished my Master's degree at the University of Northern Iowa in the Geography program. My thesis focused on an automated way to extract sinkholes in Northeast Iowa using LiDAR data. This fall, I received a job in Duluth, MN, where I am currently working for SRA International as a GIS Analyst and provide support to the EPA Research Lab.

BRICE JENSEN
B.A. Earth Science Teaching ('11)
Roeland Park, KS

Physics Teacher
North Kansas City Schools

I am currently in my second year of teaching 9th grade physics down in Kansas City. On top of teaching, I started an environmental club at our school, which has really taken off. Last February, I proposed marriage to Kelsey Hampton, a UNI biology alumni and current graduate student at KUMC for cancer research. We are having a fun time planning for our wedding and taking care of our two kittens.

ELIZABETH WELDER
B.A. Earth Science ('12)
Nevada, IA

Americorps Forestry Aid
State Tree Nursery-DNR

DESIRAE WEBER
B.A. Earth Science Teaching ('12)
Chelsea, AL

Pet Stylist
PetSmart

I am currently studying for the GRE, planning to go to grad school for mechanical engineering next fall.

BRITTNEY (FRY) TILLER
Earth Science ('12)
Wapello, IA

Environmental Education Coordinator/
Naturalist
Louisa County Conservation

I am just wrapping up my first year as a full-time Naturalist for Louisa County Conservation. It has been an awesome year of field trips, classroom and public programs, and youth trips! The highlight of my year was showing the 3rd graders the first quarter moon through our telescope. Their eyes lit up as they saw the beauty of our natural world!!! Matt and I just bought a small house and got a cute little puppy so needless to say, life is good, and we are so very blessed.

ALICIA HERZOG
B.A. Earth Science ('13)
Cedar Falls, IA 50613

Student Life Assistant Program Coordinator
Hawkeye Community College

I recently took a job at Hawkeye and am working part-time at the YMCA. I am hoping to find a job in a science museum outside of Iowa sometime mid-2014.

CHRISTIAN MCLAUGHLIN
B.A. Earth Science ('13)
Waterloo, IA

Sales Rep
Voss Distributing/Red Bull

CODY MIRELES
B.A. Geology ('13)
Sunchang, South Korea

K-6 English Teacher
NIIED

Currently, I am teaching English in Sunchang, Jeollabuk-do, South Korea. I sneak in as much Earth Science as possible.

EXTERNAL GRANT ACTIVITIES IN HYDROLOGY

Dr. Iqbal received a \$50,000 research grant from the Iowa Nutrient Research Center (INRC) at Iowa State University. The Center was recently created by the state of Iowa to implement Iowa's nutrient reduction strategy that was originally developed by the Iowa Department of Agriculture and Land Stewardship, the Iowa DNR, and Iowa State University. The above strategy is a science and technology-based framework to assess and reduce nutrients in surface water from both point and nonpoint sources in a scientific, reasonable and cost effective manner (ISU, 2013). The long term goal of this initiative is to promote research on farm processes, the environment and water. Dr. Iqbal's proj-

ect deals with distribution, transport, and biogeochemical transformations of agriculturally derived nitrogen and phosphorus in the Cedar River watershed.

The impact of land derived nutrients on the quality of water in Iowa is a matter of great concern. There is no natural resource more important than water to the economy and quality of life in Iowa. Most rivers and lakes in the state are being degraded from diffuse influx of nitrogen and phosphorus from farm fields adjacent to these water bodies. There are two general causes of nutrient influx to the aquatic ecosystem; (1) inefficient land management, and (2) changing hydrologic characteristics. The management issues include excessive application of farm chemicals, poor design of disposal facilities, inefficient management practices, and inadequate policies. The hydrology issues include transport mechanisms of nutrients, sediment loads, high intensity rains, and flooding events. Dr. Iqbal's project is expected to bring insights into the geo-hydrologic relationships between Iowa's agricultural lands and adjacent water bodies. The proposed project will be conducted by hydrologic sampling in the watershed, including the main channel Cedar,

Little Cedar River, Shell Rock River, West Fork Cedar River, Black Hawk Creek, and Wolf Creek. The specific goals of this project are to (1) conduct geo-hydrologic mapping to identify probable hot spots of pollution by soil runoff nutrients; (2) delineate avenues of nutrient and sediment transport caused by high intensity rain events and flooding; and (3) study biogeochemical transformation pathways of nitrogen and phosphorus in the watershed. Dr. Iqbal and two of his students, Madison Pike and Collin Barker, have already done some preliminary sampling in the area this fall. Recently, Sushil Tuladhar has joined the project as field and lab activities coordinator. In addition to gathering important scientific data, this project is expected to serve as a great opportunity for students to learn about Iowa's farm community, and thereby appreciate the state's waterways and land resources.

WHAT HAVE YOU BEEN UP TO?

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- BMC Aggregates, LC
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- Sherm & Beverly Lundy
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