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Earth News, v39, Spring 2016

University of Northern Iowa. Department of Earth Science.

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DEPARTMENT OF EARTH SCIENCE

EARTH NEWS

University of Northern Iowa

VOL 39 spring 2016





University of Northern Iowa

Earth Science
Faculty and Staff
(L-R) Nora Janssen,
Alexa Sedlacek,
Siobahn Morgan,
Chad Heinzel, Steve
Smith, Kyle Gray,
Mohammad Iqbal,
Lee Potter, Alan
Czarnetzki, Thomas
Hockey, Xinhua
Shen

Not Pictured: Aaron
Spurr, Mike Stevens

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DEPARTMENT OF EARTH SCIENCE

From *the* Department Head
SIOBAHN MORGAN

Dear Alumni and Friends of the Earth Science Department,

I am very happy to again give you good news. And in keeping with my own rules, I'll make sure it is short and sweet. Here are some of the highlights for the Earth Science Department over the past year.

Minors have been approved –

We'll have the revised Geology, and Astronomy minors available, along with minors in Environmental Earth Science and Air Quality. Students are eager to sign up for these.

Record Number of Majors –

It seems that every week over the past semester I've had a student walk into my office and declare a major in Earth Science, Earth Science Teaching or Environmental Science. We're probably close to 90 majors right now. We also had a record number of freshmen starting last fall as majors, and early data shows even more incoming students this fall into our degree programs.

Award winning chapter of SGE!

For the fourth year in a row, our chapter of Sigma Gamma Epsilon has been the recipient of the "Quality Chapter Award". This is an excellent indication of the hard work and strong character of our students, who do an excellent job of promoting the Earth Sciences.

Award winning faculty – While it isn't unusual for our faculty to be recognized for their accomplishments by various groups at UNI, or the state of Iowa, Kyle Gray was honored at the Geological Society of America fall 2015 meeting as the recipient of the Biggs Award for Excellence in Earth Science Teaching, an award from the Geoscience Education Division of GSA.



New Scholarships – We have been very grateful to our alumni in supporting our scholarships, particularly the new scholarships in Earth Science Teaching (funded by Bill and Teri Brecht) and Environmental Science (funded by Leslie Knapp). As always, we greatly appreciate our donors and supporters.

Earth Science Week

Celebration! We have continued our long standing relationship with BMC Limestone Aggregate Ltd by helping them with the annual Sunday at the Quarry event and their continued support of our summer course for teachers (separate articles about those inside).

Fall Field Trips – This fall we had two trips, one actually before the semester started to Yellowstone and Grand Tetons area, led by Chad Heinzl, and the other during Thanksgiving week to Big Bend Texas, led by Lee Potter and Alexa Sedlacek. The pictures from these trips are scattered throughout this newsletter, as well as on our Facebook page.

And of course, along with all of the items mentioned above, our students continue to have the opportunities to take part in a variety of hand-on course activities, as well as research projects with faculty. The regular courses, committees, research projects and outreach events have kept the faculty, staff and students in the department very busy. No doubt this will continue over the next year.

As I write this I am awaiting the results of a meeting of the Iowa Board of Regents where they will be asked to officially approve our request to change the name of the department to **Earth and Environmental Sciences**. For some time we've been referring to ourselves with that title, particularly at recruiting events, and this benefited us through greater awareness on campus of our programs. The name also reflects the nature of many of our faculty's and students' research, as well as the interest in our Environmental Science degree program. So don't be surprised if in the future you hear from the Department of Earth and Environmental Sciences – it's still us, just with a longer name.

As always, if anyone wants to come by for a visit, or to share any new rock/fossil finds, please do stop by. I really do enjoy meeting our alumni, and wish you all the best in the coming year.

NEWS

from the faculty *and* staff



ALAN CZARNETZKI
PROFESSOR OF METEOROLOGY

Greetings to all! This spring I've been especially busy designing an online Weather Analysis and Forecasting course that I hope to teach this coming summer. I'm hoping this course will be appealing to many students, including in-service teachers. The process of producing a weather forecast is a great way to apply the inquiry process in a real-world setting. Since it involves the use of computer models, material presented in this course and then transferred to a science classroom may help educators demonstrate they are meeting several targets set by the Next Generation Science Standards.

I just gave a presentation to a farm conference in Ames on the topic of the spring and summer outlook for 2016. We've recently experienced a very strong El Nino, but this is forecast to end by summer. The last time we had an El Nino of similar strength and timing was in 1998. That year, Iowa had a very wet spring and summer. We'll see how things work out this time!

It's always good to hear from former students. If you have some good weather photos, please send them my way, too. I like to show these in Elements of Weather.

Best wishes to all!



PAULA EVEN
INSTRUCTOR

Valley of fires, Carrizozo, New Mexico 2015



KYLE GRAY
ASSOCIATE PROFESSOR OF EARTH
SCIENCE AND SCIENCE ED

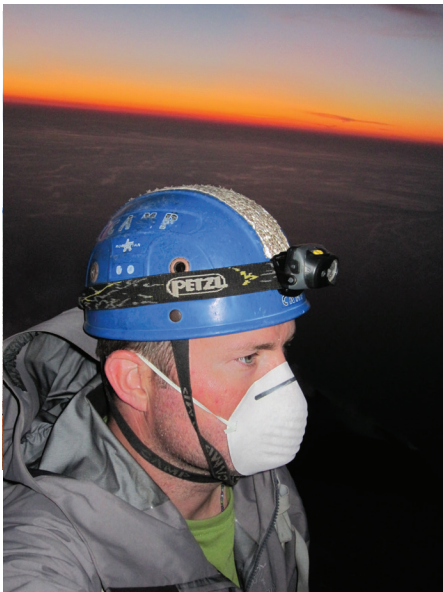
The past year has been a time of highs and lows. Last spring I was granted tenure and celebrated by having open-heart surgery to repair two valves and close a hole. Needless to say, I took it easy last summer.

This past fall I taught Intro to Geology and organized the course from a geologic

hazards perspective which included a lab project where students evaluated the hazards associated with a small town in Oregon or Washington. What's really amazing is that these hazard maps are readily available online, free to the public, and easy to use. In October, I was honored to receive the Biggs Earth Science Teaching Award by the Geoscience Education Division of the Geological Society of America. This award recognizes innovative and effective teaching within the geosciences. Siobahn Morgan nominated me and Jim Walters gave the citation address, so UNI was well represented. I also became a grandpa for the first time, so now I have a reason for not getting my papers graded!!

For the past two summers, Science Ed has run a workshop for teachers that helps teachers redesign their classes to match the newly adopted Next Generation Science Standards. This past summer, Aaron Spurr and I took a couple of days to show how patterns can be recognized in Earth Science data. We also helped two teams of teachers flesh out new ideas for projects including one where students analyze data from a fictional planet.

I am also working with Alexa Sedlacek on a project where we are looking at the different misconceptions that students have regarding mass extinctions. So far we have found some interesting ideas and plan on presenting our preliminary results next fall.



CHAD HEINZEL
ASSOCIATE PROFESSOR
OF GEOLOGY



THOMAS HOCKEY
PROFESSOR OF ASTRONOMY



MOHAMMAD IQBAL
PROFESSOR OF GEOLOGY



NORA JANSSEN
DEPARTMENT SECRETARY



LEE POTTER
INSTRUCTOR

Photo taken at the Petroleum Museum,
Midlands, TX while on the Big Bend Field
Trip with UNI students

NEWS

from the faculty *and* staff



AARON SPURR
INSTRUCTOR OF SCIENCE ED
AND FIELD EXP. COORDINATOR

My dual appointment status at UNI has once again changed, and this time for the better! My faculty appointment is now officially in the Earth Science Department, with a small percentage in field experience supervision. I still enjoy working with field experience students, but I was seeking more time in the classroom, which I am now able to do. In addition to working with my field experience students this spring, I am also teaching Inquiry into Earth and Space Science, Current Technologies in Science Teaching, and Astronomy Lab.

Our daughter, Sarah, is a 7th grader at Holmes Junior High. New building, new class, new friends. It has mostly been a smooth transition, but I don't have fond memories of junior high and I don't envy anyone having to go through that time of their life. Our son, Will, is a freshman at UNI! He is a computer science major and is really enjoying his courses. One of the big benefits for me is I join him for lunch in one of the dining centers every couple weeks. As someone who attended UNI as a student in the late 80's I can say that, without reservation, the food served at UNI today is orders of magnitude better

than the food I remember eating. I don't ever remember looking forward to meals while I was a student, but my son definitely enjoys mealtime. He commented the other day it's like eating at a good restaurant (which is a compliment, as he enjoys quality food). He has not gained any weight yet, but I can't say the same about myself.



ALEXA SEDLACEK
ASSISTANT PROFESSOR
OF GEOLOGY

Greetings friends of the Earth Science Department! The major highlight for our family this past year was moving into our little brick house. It's hard to believe that we've been here for almost three years. As each year passes, we feel more at home in the Cedar Valley, and Penelope enjoys preschool greatly. While she obsessed over pirates and dinosaurs last year, this year her interests shifted to white blood cells and antibodies. Neither Patrick nor I introduced her to microbiology; perhaps she learned about it at preschool.

I continue to teach Earth History every semester and was delighted to offer Paleoclimatology last spring. Many of our majors enrolled in the course, and I hope to offer it on a regular basis. I also taught Environmental Geology last fall and am currently teaching my first Oceanography

class. A major high point of this year was working with Dr. Lee Potter to offer a field course to Big Bend National Park, TX over Thanksgiving break. An excellent group of students went on our trip, and I look forward to offering more field courses in the future.

It's been a busy year for research as well. Over the summer, Environmental Science major, Bobbi Minard, joined me out west. We met researchers from the National History Museum London in Las Vegas and made our way north to the Confusion Range, UT and Palomino Ridge, NV to investigate Permian-Triassic age carbonates. I have never experienced so much rain (and thunderstorms) in the high desert, but in spite of this we were able to accomplish our goals. I hope to return to these sections in the near future, and will be on the lookout for more hard-working, motivated undergraduates to join me. In addition to continued Permian-Triassic research, I happily announce my new Devonian research for the BETA Project, a collaborative research project with Drs. Xinhua Shen and Joshua Sebree (Chemistry and Biochemistry). I look forward for the snow to melt so we can visit more Devonian sections in Eastern Iowa. Warm wishes!



XINHUA SHEN
ASSISTANT PROFESSOR OF
METEOROLOGY AND AIR QUALITY

I joined the UNI's Department of Earth Science in August 2014 as Assistant Professor. I really enjoy working and living here in Cedar Falls. Over the past year, I have taught Elements of Weather, Air Dispersion Modeling, Measurement and Analysis of Air Quality. I worked with undergraduate students on a couple of research projects, and results of our work have been presented at the 7th Annual American Chemical Society Undergraduate Conference in Davenport, Iowa.

Last summer, I spent a lot of time exploring the surroundings, walking in the woods, fishing at George Wyth State Park, driving to Iowa City and Chicago. This summer, I will continue to work on research projects. My project "Reducing Greenhouse Gas Emissions with Advanced Nano-engineered Materials" has been selected to receive an 8-week Summer Fellowship. This fellowship has been awarded during the May and June sessions.

I would always like to hear from former students and let me know how you are doing. Wishing everyone a great year!



STEVE SMITH
LAB TECHNICIAN



MIKE STEVENS
INSTRUCTOR

Greetings from my little cave on the second floor of Latham. In general, my life in one word is busy. I am teaching the Inquiry into Earth and Space Science class here, teaching high school math at Waterloo Christian, working at the new KwikStar in Evansdale, and helping out with tech stuff at the LaPorte City FFA museum. Occasionally, I do find time for a nap. I really enjoy teaching the liESS course. It's a good outlet for me to share what my dad has taught me from his years of teaching earth science in Hamburg, New York, which is the place the Weather Channel seems to gravitate to when there's a chance of lake effect snow. Plus, learning the ups and downs of education down in Missouri allows for experiences to be shared. In addition, it allows me the opportunity to try to teach students (and future teachers) as well I was taught at UNI when I was working as a grad assistant back in the early 90's.

Cynthia and I have made it through the past twenty some years with a few furry kids. Last year, we adopted another kid... Rocky. He's a Min Pin. It was a rather rough start for the little old guy. Shortly after adopting, we took him to our vet, who cast gloom and doom with a diagnosis of bone cancer.

Well, we took him to another vet, who said the cancer was confined. She amputated the bad leg and Rocky is now a full-throttle leach of Cynthia. It is quite ironic that our dogs are named Rocky and Sandy. Pretty fitting names for two earth science people who have wandered the halls of Latham.



WAYNE ANDERSON

PROFESSOR EMERITUS OF GEOLOGY & DEPARTMENT HEAD

1970-1995

Image : Limestone posts quarried primarily from the Green Horn Formation

Jan and I experienced another good year of retirement, splitting time between Iowa and Colorado. We both observed 80th birthdays during 2015. In other words, we have now achieved octogenarian status! I'll highlight two geological excursions of the past year, namely: post-rock country of central Kansas and a famous dinosaur track way, near La Junta, CO. Three pictures are included.

We visited post-rock country in April on our way to Colorado. Early settlers quarried local limestone bedrock and used it as fence posts because of the scarcity of trees on the prairies of Kansas. Post Rock Museum in Lacrosse, Kansas pays tribute to the role of limestone posts in the Sun Flower State's history. Sternberg Museum of Natural History in Hays, Kansas also has informative displays about post rock and Kansas's history. Limestone posts were quarried primarily from the Green Horn Formation, a Cretaceous rock unit

that contains fossils such as marine clams, ammonite cephalopods, and silicified driftwood. The Greenhorn Limestone occurs in western Iowa, Nebraska, Kansas, Colorado, and some additional bordering states. Many of the buildings at Fort Hays State University, Kansas were constructed with local Cretaceous limestone.

The Picketwire Canyonlands on the Comanche National Grasslands south of La Junta, Colorado are the site of North America's largest known set of dinosaur tracks. The track ways are preserved in the Jurassic Morrison Formation, and tracks of both Apatosaurus and Allosaurus are common. The massive, four-footed plant eater Apatosaurus (once known as Brontosaurus) left parallel tracks of groups heading westward along an ancient shallow lake. Allosaurus, a bipedal, meat eater left its three-toed footprints behind, and it likely preyed or scavenged on brontosaurids. Canon City, CO has a

replica of Allosaurus on the main route (Highway 50) through town.

It is a 10.6 mile round trip hike to view the impressive dinosaur track way. The trail is not overly steep, except for the initial descent down through the Dakota Formation. However, summer temperatures often reach 110 degrees in this part of Colorado. Summer is definitely not a good time to visit. Jan and I have visited the site twice, both during September. Both hikes were geologically interesting, but uncomfortably hot. Bring a broad-brimmed hat and lots of water if you choose to walk in the footsteps of the ancient dinosaurs of Picketwire Canyonlands, CO.

Best wishes to UNI Earth Science graduates and friends.



Dino tracks in the Picketwire, Canyonlands



Allosaurus replica in Canon City, CO

BIGGS AWARD 2015 - KYLE GRAY

The Biggs Award for Excellence in Earth Science Teaching, the Geological Society of America’s Geoscience Education Division’s Named Award, recognizes innovative and effective teaching among the faculty at all institutions engaged in undergraduate education who have been teaching full-time for 10 years or fewer. The 2015 recipient of this award was Kyle Gray, who was introduced at the GSA Award ceremony by Emeritus Professor of Geology, and former Department Head, James Walters.

Kyle Gray’s background as an educator of both Earth Science and Science Education courses at the University of Northern Iowa over the past six years has certainly provided him ample opportunity to showcase his talents in terms of providing both pedagogy and content to his students. Kyle’s teaching style is student-centered and constructivist. The students in his Inquiry into Earth and Space Science class, a course with no formal lectures but offered as an experiential activity based course, provides a setting that engages the students in inquiry-based activities and projects. This courses also has the

added complexity of providing activities and content in the three disciplinary areas of geology, meteorology, and astronomy – all of our department’s disciplines. Elementary education majors receive extensive hands-on experience in the Inquiry course that provides them with not only content in three sciences but also examples of activities and curricular material that will be useful in

their future careers. Kyle makes extensive use of engagement activities such as “clickers” as well as lecture tutorials, physical models, and in-class activities. The Biggs Award follows his 2013 award from UNI for Teaching Excellence within the Liberal Arts Core.

Congratulations Kyle!



HYDROLOGY NEWS

University of Northern Iowa Press Release

UNI students collaborate on water study in Nepal

November 2, 2015

CEDAR FALLS, Iowa – The University of Northern Iowa is in an international collaboration with Tribhuvan University in Kathmandu, Nepal, for a water study of the Bagmati River. Fieldwork for the project began the second week of May and will continue through the end of 2016. The team from UNI will primarily lead the project while TU will provide lab space.

The project is funded by a \$56,000 grant from the U.S. National Science Foundation. Mohammad Iqbal, an earth science professor at UNI, is the project director.

“Students will learn about global environmental problems, particularly issues that are directly linked to human health,” said Iqbal. “This will be a great opportunity for our students to develop respect and understanding for people of a different culture, specifically for those people who are living in adverse environmental conditions.”

Two students from UNI got the privilege to travel to Nepal to assist with fieldwork this past summer. They learned how to conduct water and sediment sampling, analyze procedures and implement policy changes using scientific data. More UNI students will get involved in the study as the collaboration between the schools continues.

The Bagmati is polluted from industrial and municipal waste due to an increase in population and urban development over recent decades. It is known as one of the most polluted rivers in the world. The goal of the study is to develop an effective hydrologic assessment scheme for the polluted body of water. This will provide the people of Nepal with technical expertise to prevent a probable human environmental disaster.

(L-R) Dr. Mohammad Iqbal, Project Coordinator; Sunita Magar & Nirmal Raila, Tribhuvan University students; Sushil Tuladhar & Junu Shrestha, UNI graduate students.



IMPACT

Impacting Achievement with Collaborations and Technology (the IMPACT Program)

Science Inquiry Workshop Held at UNI for PreK-12 Teachers

The earth science and inquiry based IMPACT workshop was held recently at UNI in Cedar Falls as a professional development opportunity for middle and high school teachers from across the state. The workshop is part of a Title IIA Teacher Quality grant program offered by the Iowa Educational Technology and Training Institute (IETTI) at the University of Northern Iowa. Conducted by UNI faculty, the workshop was held September 15th on the UNI campus.

IMPACT is correlated with the Iowa Core and is standards-based. The IMPACT (IMPacting Achievement with Collaborations and Technology) program combines the science-based STORM and GLOBE programs, along with educational technology and math activities. Based on the Iowa Professional Development Model, program participants will continue to meet

in person and online throughout the school year. The IMPACT program will conclude next June with a week-long workshop allowing the teachers to share their teaching experiences with the IMPACT materials.

UNI faculty involved in the workshop included Alan Czarnetzki, STORM Director and Earth Science Professor; Marcy Seavey, UNI STEM Coordinator; Eve Halligan, Iowa Academy of Science and GLOBE Director; Lori Seawel, ITS-Educational Technology; and Doreen Hayek, IETTI and IMPACT Director. Connie Franzen of the South Winneshiek Community schools served as the Math Consultant for the program.

Oskaloosa News, September 24, 2015



SUNDAY at the QUARRY

The first Sunday in October means one thing to the Earth Science Department – Sunday at the Quarry. This long-term collaboration of the Earth Science Department and BMC Aggregates took place at the Raymond quarry this year on a blustery day, and was held to kick off the start of National Earth Science Week. This year's theme was "Managing Our Natural Resources". In spite of the weather there were still a large number of rock hounds of varying ages learning about the Earth's resources, the workings of the quarry, and geology. UNI faculty and students helped out (and collected a few rocks as well), as they led visitors down to the quarry floor to learn about the local geology and also the safety concerns in a working quarry. Student helpers were also on hand to show visitors the various natural resources and provide activities for the younger visitors, like creating geological forms from Legos –

though some of the older students also had a hand at Lego construction.

Along with the Earth Science Department displays, a range of other educational displays were available for those waiting to take the bus down to the quarry, as well as the ever popular rock piles. The rock piles were so popular that they had to limit participants since safety gear was required (glasses and helmets), and even rock hammers were in short supply. The participants clearly enjoyed the chance to seek out, and take home that special rock, or mineral that they eventually found on the rock pile. For those that were not so lucky, the hosts did have a back-up collection of samples, so everyone did have a souvenir of their trip to the quarry.



Look what I found!



Dr. Kyle Gray helping kids see how everyday items are made from minerals.



Katie Patrick and Terra Perez's Lego construction.

IOWA GEOLOGICAL SUMMER WORKSHOP

UNI collaborated with the Iowa Limestone Producers Association, Basic Materials Corporation, the Iowa Geological Survey and the United States Geological Survey to provide Iowa's in-service teachers with geologic learning opportunities. Fifteen teachers from across the state developed mineral, rock and fossil collections to share with their students and learned about Iowa's amazing geologic history.

Sherm Lundy explaining Iowa's geology of the Raymond Quarry to Iowa's teachers.



ALUMNI SPOTLIGHT

The Department of Earth Science at the University of Northern Iowa helped shape Kevin Prochaska into a successful professional in the environmental field. In return, Kevin has helped shape the department.

In 1986, Kevin and his wife, Nancy, created the Wandering Coprolite Fund—a gift that is still making an impact nearly 30 years later. The fund enables both students and faculty to travel to regional and national conferences to present research, make connections with individuals from other institutions and get more information on future opportunities.

“The fund is essential for our students, since it provides them with support that enables them to have experiences that help them in learning about future careers in

the geosciences,” said Dr. Siobahn Morgan, the department head for Earth Science. “Also it is one of the best named funds out there—a unique distinction that makes it memorable to donors and our alumni.”

Kevin, a 1978 graduate of UNI, benefited from experiences similar to the ones he is now providing and strived to create similar opportunities for students to the ones that enhanced his time on campus.

“The money my wife and I gave to start our fund is being used to allow students and faculty to attend camps and conferences, and this has given me great satisfaction,” Kevin said. “I certainly had a great time at those events as a student, and I’m glad others are getting those opportunities.”

Kevin attributes much of his success to these added opportunities and to his professors at UNI.

“My professors wanted all their students to succeed and it showed in the way they taught,” said Kevin. “Years later, I still remember what they did for me. Their dedication to their students is one of the things that prompted me to give back to the university. I wanted to give something back to those who gave me so much.”

Even now in retirement, Kevin relies on lessons he learned from his professors. He says...

“As we progressed through the geology program at UNI, I learned two things. The first is, never give up what you want to do, even if the road is tough. The second thing is, always approach life with laughter in your heart. A good attitude overcomes almost any trial and will carry you forward in life.”

Are you interested in providing support similar to Kevin and Nancy's? Visit uni-foundation.org to discover how you can make a difference at the University of Northern Iowa.

SGE

The Gamma Sigma Chapter of SGE had a very eventful year! We gained a number of new members and anticipate to gain more in our upcoming spring initiation in March. Over the course of the school year, our members have attended biweekly meetings and have been involved in variety of events. These activities brought us together, so it was sad to see our seniors graduate and move on with their lives. However, we hope that they are doing well and achieving their goals.

We currently have 15-20 active members in the Chapter. Four new members joined in the spring 2015 semester, and five joined in the fall 2015 semester. The current officers are: President Bob Spielbauer, Vice President Taylor Garton, Secretary Katie Patrick, and Treasurer Emily Engle. Prior to his graduation in December, Joseph Reinders served as President. Bob Spielbauer was Vice President and took over the role of President. Taylor Garton, who had just returned from a semester in Alaska, took on the role of Vice President. Paige LaPlant served as Treasurer in the fall, but is in New Zealand for a semester abroad, so Emily Engle was elected to take her place. New officers will be elected in April.

Over the past year, SGE members have been involved in a number of events. Many members volunteered at the annual Sunday at the Quarry event. During this event they helped identify rocks and answered questions related to the Earth Sciences. Another volunteer activity that many members attended was the Snapshot water quality event. For this event volunteers tested the water quality at various locations along Dry Run Creek within a short time period in order to gain an overall view of the stream's water quality. Members also participated in the Halloween House, which is an annual event hosted by UNI's Chapter of the American Chemical Society. Our room, "Underground Mysteries," was cavern-themed. We built a cardboard "box-crawl" cave, had cavern coloring pages, and a fluorescent minerals display.

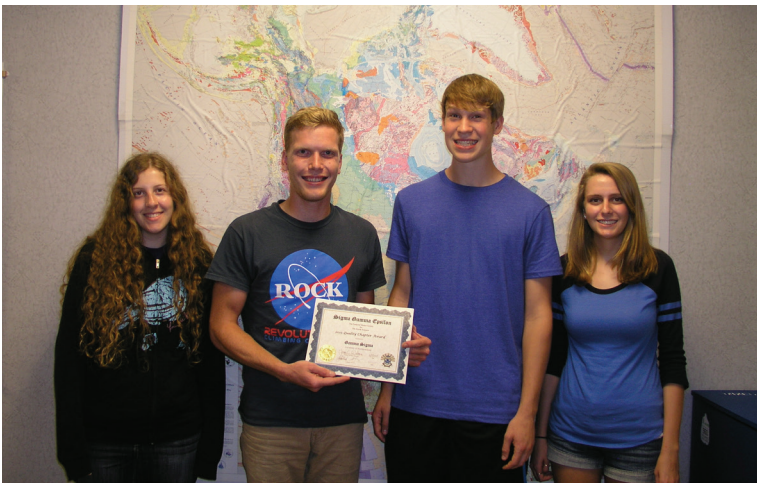
SGE members have also attended several social events throughout the year. Many members attended the Earth and Environmental Science Department's welcome back picnic at the beginning of school year. We also had a bad movie night during Earth Science Week and our annual

holiday party and gift exchange. We are also currently designing SGE t-shirts.

Many SGE members became close friends while attending the two field courses offered by the Earth and Environmental Science Department in the fall semester. One trip, led by Dr. Heinzl in August, took students to the Badlands, Bighorns, Yellowstone, and the Tetons. Another trip was led by Dr. Sedlacek and Dr. Potter during Thanksgiving Break, which went to Big Bend National Park in Texas, the Guadalupe Mountains, the Permian Reef, and Carlsbad Caverns.

This school year has flown by, but SGE has brought members of the Earth and Environmental Science Department closer together and made the past year memorable. Though we will all eventually graduate and move on with our lives, we remain members for life. We look forward to the future of SGE and wish the graduating members well in their future endeavors.

Bob Spielbauer
Chapter President



Katie Patrick, Joseph Reinders, Bob Spielbauer, Paige LaPlant
Fall Officers



Taylor Garton, Emily Engle, Katie Patrick, Bob Spielbauer
Spring Officers

YELLOWSTONE FIELD TRIP



Before the start of the 2015 fall semester 14 students ventured out west on a two week learning expedition. Lead by professor Chad Heinzl, the group embarked on a journey as part of the course, The Geology and National History of the Greater Yellowstone Ecosystem. “The primary goal was to see and experience things we can’t experience in Iowa, or around the Cedar Falls area,” said Heinzl. And judging by the extensive photo albums the group returned with, that goal was sufficiently achieved. Making a large loop, the group—which consisted of Madison Beeler, Jayna Brechwald, Emily Engle, Andrew Evans, Katlynn Luinstra, Matthew McIntosh, Benjamin Nettleton, Dylan Nielsen, Kathryn Patrick, Joseph Reinders, Aaron Schroeder, Robert Spielbauer and Eddie Todd—started by visiting the Badlands National Park in South Dakota, before traveling into Wyoming to Devils Tower, and then into the Bighorn Mountains to see Medicine Wheel.

After spending time in the Bighorn Mountains, the students traveled into Yellowstone. “In Yellowstone we did some pretty good day hikes,” said Heinzl. “My trips are pretty strenuous in general. We would go up four or five miles into the mountains. In the Tetons a group of students wanted to see the Schoolroom Glacier, so they broke off and did a 26-mile loop in one day.” The glacier gets its name from its unique accessibility and its textbook glacial features, making it a great learning opportunity for students. However, given current climate conditions, the glacier is expected to disappear by 2030, if not sooner. “One thing a lot of national parks are studying,” said Heinzl, “is how climate change will affect tourism. Will people still be interested in visiting a national park like

Glacier National Park or the Grand Tetons if they no longer have glaciers? With the environmental major, I really try, as much as possible, to tie in my background, which is geology and archeology, into future environmental issues for the places we visited. Out west, the big ones are oil and gas use, access to water and how that impacts the ecosystems.”

The learning didn’t end upon the group’s return to the Cedar Valley. “The second half [of the class] was really to try and tie in those observations with current environmental themes,” said Heinzl. “Part of that is trying to communicate what you are seeing to different audiences. That’s a big thing within environmental needs.” To do so, he had the students try and think from different perspectives such as that of Native Americans, and try and communicate what they saw and the importance to others.

Brechwald said her favorite moment happened when her path crossed with a black bear. “The girl I was with was totally flipping her lid because it was just the two of us,” she said. “She asked if she should get out her pepper spray, because that’s basically what bear spray is, so we could protect ourselves if it came toward us. I told her to if it made her feel better. Black bears aren’t the bears you have to worry about,” she added, “grizzlies are. And this one looked like it was born this year, it was very small—I think it’s safe to say my St. Bernard was bigger. But just seeing this bear so close to me, and the fact that it didn’t care I was there because of all the wonderful huckleberries around was probably my favorite moment.”

The trip is partially funded by the students themselves; however, the earth science department works to keep the cost as low as possible. Along with supplying the trip with the majority of its camping gear, the department received a donation to buy a 15-person van, which drastically reduced the cost, allowing the group to travel to these locations without renting a vehicle. The course does have a \$500 fee attached, but is open to all students across the university.

Heinzl, who has done many trips like this, plans on doing another one in the future, although it may not be back to Yellowstone. “We try to mix it up,” he said. “We try to go where students want to go, where we think we can get the best experience.” But he feels these trips are important in other ways, “It changes their perspective, it that here [in the Cedar Valley] we are controlled by our technology. You are completely plugged in a lot of the time. But in the alpine environment, you feel very small. You get a truer sense of a different perspective of how the Earth is larger than we are.”

Eddie Todd taking in the landscape.



BIG BEND FIELD TRIP

Thanksgiving break saw a return to Big Bend National Park and West Texas. Although it has been a frequent destination since the early 1970s, the Department of Earth [and Environmental] Science had not visited the region since 2007. Drs. Lee Potter and Alexa Sedlacek teamed up to lead fifteen students on an odyssey as part of Environment and Natural History of Big Bend National Park. In addition to many of the standard stops, the trip was “re-booted” to better mesh with the new Environmental Science Major and included discussions of resource extraction; land and water use; air quality; and people in the national parks.

Some new stops included the Petroleum Museum in Midland, Texas, where the group toured an oil drilling rig. The group camped outside the Park at Stillwell’s store for some early-morning rockhounding. A full day was scheduled for the Permian Reef Trail at Guadalupe Mountains National Park. This was in addition to Monahans Sand Dunes State Park, hike into Dog Canyon, Fault-Appreciation Day in Boquillas Canyon, the Hot Springs, and Ross Maxwell Geologic Drive. The “Pinnacle” of the trip was the all-day hike in the Chisos Mountains, where the group split into smaller teams to tackle different hikes based on interest and ability. Those who made the 12+ mile South Rim loop or Emery Peak summit were rewarded with better than 70 mile visibility.

After hours, the group worked on journals, helped with meal planning and food prep, and explored the area. Those seeking 3000 – level credit also worked on an in-the-field research project to satisfy experiential learning requirements for Earth and Environmental Science majors. These included studies of magma volume, water quality of the Rio Grande, and sediment bed thickness in the Marathon Basin. A curriculum piece was an option for budding science educators.

Trips at this time of year risk bad weather, and the group endured cold, sun, ice, and an abrupt end to the Carlsbad Caverns tour. Our homecoming was complicated by an ice storm that ran across the majority of our route home. However, through clever rerouting, the help of family, and the endurance of our drivers, the group returned safely and ready to careen into the semester’s final weeks. Instructors were overheard to say “we would travel with y’all again?”



The Biogeochemical Evolution of the Atmosphere: The BETA Project

Last spring, Dr. Xinhua Shen, Dr. Joshua Sebree (Chemistry and Biochemistry Department) and Dr. Alexa Sedlacek were awarded a three year STEM grant from the Iowa Space Grant Consortium. This collaborative research project investigates Earth's atmosphere at three intervals during Earth's history: the Archean, the Devonian and modern. This research involves collaboration with NASA and the extensive involvement of seven UNI undergraduate students from a variety of STEM majors.

Our collective research involves laboratory work in Dr. Sebree's laboratory housed in McCollum Science Hall. Students join Dr. Sedlacek in the field collecting and analyzing Devonian age sedimentary rocks deposited, and assist Dr. Shen's collection of fog samples.

Our current team involves two Earth Science and Environmental Science majors, four Biology majors, and one All Science Teaching major. We are proud to have such a diverse group, and happy to be able to provide each member with a STEM scholarship. Each team member is involved in laboratory and field data collection, and we have had the opportunity to present at several academic conferences. Kathryn Patrick and Angela Weepie traveled to NASA Goddard Space Flight Center last summer to meet with our NASA collaborators, Dr. Jennifer Stern and Dr. Shawn Domagal-Goldman, and we are planning another trip over summer 2016. We hope to collect abundant fog samples in the spring and, once the snow melts, we hope to be collecting from Devonian outcrops around the state. We will also present at the North Central Geological Society of America meeting and the Iowa Academy of Science meeting.

To keep up to date with Team BETA's many research excursions, visit our website at <http://unibetaproject.weebly.com/> Here you will find a detailed explanation of each project, student blog updates, photographs of field excursions and conference presentations, and many other interesting aspects of the BETA Project.



Back row: Steven Gomez, Alexa Sedlacek, Joshua Sebree, Bobbi Minard, Carissa Herkelman, Front row: Katie Patrick, Jessica Wayson, Xinhua Shen, Brittanie Dotson, Jose Lopez



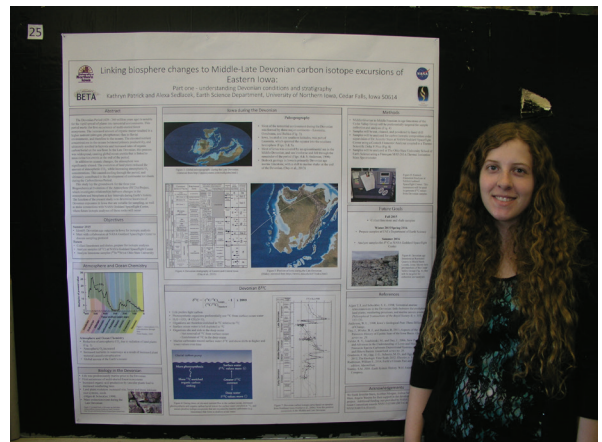
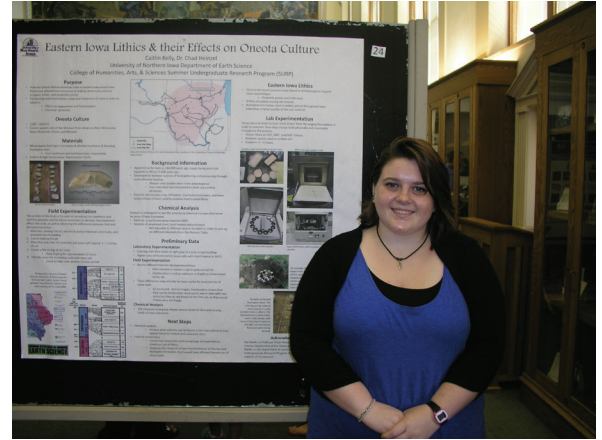
BETA team presented at the 7th Annual American Chemical Society and the Undergraduate Research Conference. Presenters (left to right) Jose Lopez, Bobbi Minard, and Brittanie Dotson.

SUMMER UNDERGRADUATE RESEARCH: HONORS THESIS

Caitlin Kelly successfully defended her undergraduate honors thesis “Eastern Iowa Lithics and their effects on Oneota Culture”, she collected chert samples from Iowa’s Hopkinton (Silurian) and Burlington (Mississippian) Formations. Her research sought to identify the potential interrelationships between Iowa’s Oneota Culture and the area’s natural resources (stone). This geoarchaeological research begins to identify the products of heat treated chert including changes in color and density. The long term goal is to develop a data base that aids archaeological interpretations of lithic provenance, trade and settlement patterns.

Katie’s study lay the groundwork for the three year Biogeochemical Evolution of the Atmosphere (BETA) Project, which investigates relationships between changes in the atmosphere and biosphere at key intervals during Earth’s history. The function of her SURP was to determine locations of Devonian exposures in Iowa that are suitable for sampling, as well as make connections with NASA Goddard Spaceflight Center, where future carbon isotopic analyses of these rocks will occur.

The Devonian Period is notable for the rapid spread of plants into terrestrial environments and the first appearance of forests. Rivers draining the continents transported decaying plant material and related nutrients like nitrogen and phosphorous to the oceans. This fertilization of the oceans may be linked to blooms of productivity that caused anoxic conditions and contributed to extinction during the late Devonian. In addition to oceanic changes, the atmosphere was significantly altered through the reduction of atmospheric CO₂ via photosynthesis. This caused gradual cooling through the period, and contributed to the development of continental ice sheets during the Carboniferous Period.



Wilderness First Aid (WFA)

What’s more fun than being covered in fake blood and pretending you’re dead? Getting wilderness first aid (WFA) certified while you’re doing it! Over January 23rd and 24th, the National Outdoor Leadership School (NOLS) held a WFA course. It taught any and all how to deal with health-related situations that take place in the backcountry, far away from immediate help. Thirty people were enrolled in the weekend class, some coming as far as Madison, WI to get certified. It hosted a variety of ages and skill levels; students, faculty, and even non-UNI civilians. WFA is a good skill to have in any situation. The hands-on course was led by two NOLS instruc-

tors who taught both indoors and outdoors. Yes, outdoors in January. The purpose was to get some kind of real-life experience under our belt when it came to treating our patients. To add to the reality of each situation, they would often incorporate fake wounds into the lesson with rouge and fake blood. During the sixteen-hour course, we learned how to approach a patient, how to check for injury, how to find wounds that might not be immediately visible, in addition to sterilizing open wounds, splinting broken bones, and dealing with non-responsive patients when you might be days away from professional help. The information taught in this course was not

only effective for people who love hiking and backpacking in the wilderness, but for anyone who wants to know how to deal with basic injuries. The certification is effective for two years, but it could become invaluable if you’re faced with an actual life-or-death situation. Hope for the best, but always prepare for the worst.

Bobbi Minard

2015-16 EDMAP Project

UNI earned a USGS EDMAP grant to delineate the surficial geology of the 7.5' Maquoketa Quadrangle. There two goals of this mapping opportunity is to train students in the skills/ joys of geologic mapping and to contribute new local data that are of benefit to society and developing scientific knowledge. Joe Reinders, UNI Geology B.S., Dylan Nielsen, UNI Geography M.S. are the primary students and Blaize Cabell and Riley Mullins (UNI Earth and Environmental Science) students are assisting. Initial field mapping has identified an interesting combination of glacial processes.



(L-R) Riley Mullins, Dylan Nielsen, Joe Reinders & Blaize Cabell.



GRADUATES

Spring 2015

Jack Beaumont – B.A. Earth Science

Brita Berry – B.A. Earth Science & B.A. Environmental Science

Jake Damon-Gilchrist – B.A. Earth Science & B.A. Environmental Science

Adam Gehrts – B.A. Geology

Andrew Gustin – B.A. Earth Science & B.A. Environmental Science

Kent Isaacson – B.A. Earth Science & B.A. Environmental Science

Jessica Patterson – B.A. Earth Science & B.A. History

Roxanne Woodside – B.A. Earth Science & B.A. Environmental Science

Ashley Worthy – B.A. Earth Science & B.A. Environmental Science

Summer 2015

Chad Dentlinger – B.A. Earth Science & B.A. Environmental Science

Ryan Katch – B.A. Earth Science

Michael Stahr – B.A. Earth Science

Fall 2015

Evan Ascherl – B.A. Earth Science Teaching

Andrew Evans – B.A. Earth Science

Joseph Reinders – B.S. Geology

Michael Engemann – B.A. Earth Science

INTERNSHIPS

Tyler Dursky

Earth Science and Environmental Science B.A.
Soaring Tree Top Adventures, Durango, CO
Eco Ranger (Naturalist/Interpreter Guide)
Summer 2015

Ryan Katch

Earth Science B.A.
Osceola, IA
Wildlife Management Intern
Summer 2015

Zachary Creery

Environmental Science B.A.
Eldorado National Forest, CA
Summer 2015

Paige LaPlant

Earth Science and Environmental Science B.A.
Dorothy Pecaut Nature Center
Sioux City, IA
Summer Naturalist/Habitat Management Intern
Summer 2015

SCHOLARSHIPS

Madison Beeler

B.A. Earth Science Teaching
Bill & Teri Brecht Scholarship,
Larry A. Kelsey Memorial
Scholarship, Jessica Allen Terri
Endowed Scholarship, Grace
Ohrman Endowed Scholarship

Brita Berry

B.A. Earth Science &
B.A. Environmental Science
W.A. Tarr Award

Zachary Creery

B.A. Environmental Science
Donald and Marguerite McKay Scholarship

Keith Doore

B.A. Earth Science & B.A. Physics
CHAS STM Scholarship, Physics
STM Scholarship

Taylor Garton

B.A. Earth Science
Earth Science STM Scholarship

James Janssen

B.A. Earth Science
Earth Science STM Scholarship

Caitlin Kelly

B.A. Anthropology,
Earth Science Minor
Clifford McCollum Scholarship Nominee,
Student Opportunities for Academic
Research (SOAR) Award, Summer
Undergraduate Research Program
(SURP) Scholarship

Paige LaPlant

B.A. Earth Science &
B.A. Environmental Science
Earth Science STM Scholarship

Cody McCoy

B.A. Environmental Science
Louise Hearst Speer Memorial Scholarship

Bobbi Minard

B.A. Environmental Science
Charles J. Hearst Scholarship,
C.W. Lantz Scholarship

Riley Mullins

B.A. Earth Science &
B.A. Environmental Science
Student Opportunities for
Academic Research (SOAR) Award

Bradley O'Connell

B.A. Earth Science Teaching
Streitberger/Mohr Science Education Schol-
arship, Grace Ohrman Endowed Scholarship

Kathryn Patrick

B.A. Earth Science & B.A. Environmental
Science
Jan Harken Scholarship, NASA Iowa Space
Grant Consortium, Jessica Allen Terri En-
dowed Scholarship, Summer Undergraduate
Research Program (SURP) Scholarship

Nolan Sagan

B.A. Earth Science & B.A.
Environmental Science
Earth Science STM Scholarship

Robert Spielbauer

B.A. Earth Science, B.A. Environmental
Science & B.A. Biology
Earth Science STM Scholarship, Irene M.
Thompson Award Nominee, C.W. Lantz
Undergraduate Scholarship

Morgan Streff

B.A. Earth Science &
B.A. Environmental Science
Earth Science STM Scholarship

Edward Todd

B.A. Earth Science &
B.A. Environmental Science
Knapp Earth Science Scholarship, Student
First Scholarship Nominee

STUDENT RESEARCH

North Central Geological Society of America
Meeting
Madison Wisconsin
May 19, 2015

Chad J. Dentlinger and Alexa R. C. Sedlacek

*Strontium Isotope Stratigraphy of the Permian-
Triassic Boundary Interval of the Central Taurides,
Turkey*

Seventh Annual American
Chemical Society Undergraduate Research
Conference
November 14, 2015
Davenport, IA

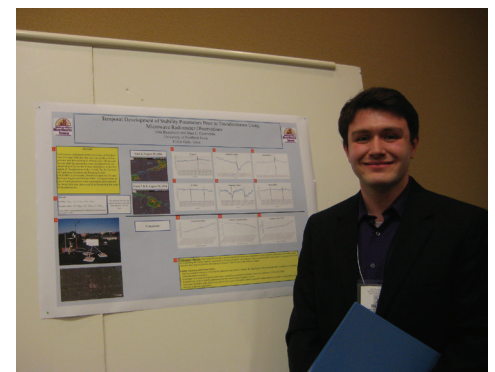
Riley Mullins, Dr. Xinhua Shen, Dr. Hongbo Du, Dr. Ziaul Huque, and Dr. Raghava R. Kommalapati

*Reducing Greenhouse Gas Emissions with
Advanced Nano-engineered Materials*

19th Annual Severe Storms & Doppler
Radar Conference
March 26-28, 2015
Ankeny, IA

John Beaumont and Dr. Alan Czarnetzki

*Temporal Development of Stability Parameters
Prior to Thunderstorms Using Microwave
Radiometer Observations*



127th Annual Iowa Academy of Science
April 17-18, 2015
University of Iowa

Caitlin Kelly and Dr. Chad Heinzl
*Applying Geology to Eastern Iowa's
Archaeological Record*

**Joseph Reinders and
Dr. Chad Heinzl**
*Heavy Metal Concentration in the Northwest
Iowa Drift Plain*

Riley Mullins and Dr. Chad Heinzl
*The Avvoltoio Paleosol, Western Sicily - Using Soil
as a Key to the Past.*

CHAS Summer Undergraduate Research
Symposium
July 31, 2015
University of Northern Iowa

**Kathryn Patrick and Dr. Alexa
Sedlacek**
*Linking Biosphere Changes to Middle-Late
Devonian Carbon Isotope Excursions of Eastern
Iowa: Part One – Understanding Devonian
Conditions and Stratigraphy*

Caitlin Kelly and Dr. Chad Heinzl
*Eastern Iowa Lithics and their Effects on
Oneota Culture*

SEMINARS

Spring 2015

Ryan J. Clark, P.G.
Iowa Geological Survey
*An Introduction to the Northeast Iowa Intrusive
Complex (NEIC) and the Potential for Economic
Mineral Deposits*

Carmen Finken
Education Coordinator, Green
Iowa AmeriCorps
*How YOU can make a difference: Green
Iowa AmeriCorps*

**Dr. Chad Heinzl, Dr. Lee Potter &
Dr. Alexa Sedlacek**
Geology Faculty and Instructors
Department of Earth Science
2015 Earth and Environmental Science Field

*Courses – Big Bend, Texas and Yellowstone and
the Grand Tetons*

Eva Halligan
Program Coordinator, Iowa Academy
of Science

Gaylen Hiesterman – Branch Manager,
Engineering & Environmental Services Divi-
sion, Cardno ATC

Gordon Krueger – Environmental Safety
Specialist, UNI

Alysia Grant Owens – Analyst as
TestAmerica Laboratories Inc.
Department of Earth Science Alumni
*What comes next? Experiences (and Advice)
after graduation*

Fall 2015

**Dr. Chad Heinzl and Students
University of Northern Iowa**
*The Geology and Natural History of
the Greater Yellowstone Ecosystem*

Dr. Huaibao (Paul) Liu
University of Iowa, IIHR, Iowa
Geological Survey
*The Winneshiek Lagerstätte and Decorah
Impact Structure – An unusual setting for
exceptional fossil preservation*

**Dr. Mohammad Iqbal, Sushil Tulad-
har, & Junu Shrestha**
University of Northern Iowa
*Challenges of Hydrologic sampling in a highly
polluted river: A learning experience from Nepal*

Zachary Creery, Environmental
Science Major
Tyler Dursky, Earth and Environmental
Science Major
Paige LaPlant, Earth and Environmental
Science Major
University of Northern Iowa
*Earth and Environmental Science Internship Ex-
periences*

NEWS

from alumni

1970's

BILL BRECHT

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

Museum Director
Lewis & Clark Boat House and
Nature Center

I continue my "retirement" job as Director of the Lewis & Clark Museum, located on the bank of the Missouri River in St. Charles. The river decided to visit the lower level of our building three times this year, most recently just after Christmas when we received over 11 inches of rain. Water stood five feet deep in the building during the crest. The lower level is designed so that water can flow through it without causing too much damage so our main problem is cleanup afterwards. After the river goes down, you get an appreciation for why the Missouri is called the "Big Muddy". My wife Teri (UNI '73) and I enjoyed a visit to campus in October, attending the Scholarship luncheon with Siobahn and Maddie Beeler. We also attended the football game that weekend as guests of the College of Humanities, Arts and Sciences. We had a great time and look forward to doing it again.

JAMES CUDDEBACK

B.A. Earth Science ('70)
Washington, IA

Self-Employed Farmer

Washington Community Schools hired my wife as a lower elementary teacher and myself as an 8th grade earth science teacher. After my first year of teaching, I took a summer class from Dr. Wayne Anderson at the Philmont Boy Scout Ranch in New Mexico. I learned much about earth science from that experience and brought back a trunk full of rocks and minerals to use in my classroom. I taught 3 more years and although I loved teaching and 8th graders, I knew that I wanted something more challenging for an occupation. I was raised on a farm and when my father offered me the opportunity to join him on the farm, I jumped at the chance. I have been farming the home farm located near Washington since 1974. My great grandfather bought the farm in 1905

so we have a Century Farm. This past summer my wife and I visited the farm that my ancestors bought in New York State in 1690. My family has been farming in America for 325 years and I am the 9th generation of American farmer. Our two sons graduated from UNI also, Jeff in 1997 and Jared in 1999. Both of them were business majors and work "town" jobs now but both own farm land and who knows, maybe there will be a 10th generation of American farmer in the family!

I have also been an Iowa Department of Natural Resources Hunter Education Instructor for 35 years so I still get to use my teaching skills to work with young hunters.

BOB LANCASTER

B.A. Earth Science ('73)
Marion, IA

Hello everyone. By the time this is published in 2016, I will have retired from nearly 30 years as a computer consultant. Prior to that I taught high school science for 11 years (Earth Science, Chemistry, Physics and Environmental Science). Twelve years ago, I co-founded the Linn Area Photo Club and currently I am the Vice-President of the largest photography club in Iowa. My photos continue to be published in calendars and occasionally win awards in local, regional and national contests. I have always wanted, and even started planning, retirement on a lake in Colorado. But life got in the way. Instead, I am living on Lake Mac Bride with my significant other, Renee. We each have two bright, healthy grandchildren and most importantly, we have our faith. We plan on travelling both in the U.S. and abroad, primarily Italy. At the top of the travel list for 2016 is a multi-day photography trip to Denali this August.

NORM MEADER

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

Retired Administrative Associate
Department of Geosciences, University
of Arizona

I had another good trip to the Pinacate Volcanic Field in northern Sonora this past February, with good follow-up trips to the Galiuro Mountains Wilderness in the spring

and Organ Pipe National Monument. Plenty of good geology to see. The changes in Arizona's geological landscape through time have been amazing. My good friend Russ Jacobson made his annual pilgrimage to Tucson in late January for the Gem and Mineral Show. He always finds good specimens for his collection and business. I am looking forward to more traveling in the coming year. My increasing age is making me nervous, and I need to be doing all that I can while I can.

MICHAEL ROCHE

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

Manager
Red Iron Construction

Currently managing installation of large industrial and government solar projects.

KENNETH THOMPSON

B.A. Science Teaching ('75)
M.A. Earth Science ('85)
Lavaca, AK

Professor, Earth Science/Physical Sciences
Emporia State University

My wife, Deb (UNI, 1977- Elementary Education) retired in May 2015 after teaching in Green Mountain and Marshalltown, IA and Emporia, KS for a combined 36 years. We celebrated 40 years of marriage in August 2015. Son Tyler is now working as a chemical engineer in the Kansas City area after working in Texas. Besides the usual university responsibilities, another colleague and I have begun fulfilling responsibilities associated with a three year grant.

1980's

KIM (PLOEGER) BUELT

B.A. Earth Science ('89)
M.S. Science Teaching ('06)
Cedar Rapids, IA

High School Associate Principal
Linn-Mar Community Schools

I am currently in my 27th year at Linn-Mar. I taught Earth Science & Chemistry for 18 years & have now been an associate principal for 9 years. My son is a senior at ISU, studying Civil Engineering. I've put my geology studies to use this past year with travels to Rocky Mountain National Park in Colorado & the Red Rock National Park in Arizona. I'm also very excited to dust off my volcanology knowledge as we travel to Hawaii this spring for our 25th anniversary. In our spare time we love to camp, boat and fish.

LISA MARTIN-HANSEN

B.A. Middle School/Junior High School Education
Earth Science minor ('89)
Long Beach, CA

Department Chair, Science Education
California State University

Hello, to the UNI earth science crew. I hope you are all doing well and enjoying the activities in your life. Two years ago, we moved from Atlanta, Georgia to Long Beach, California. My new job is Department Chair of Science Education at California State University, Long Beach. Our department does a lot of different things -- everything from teacher preparation to coursework for those in informal science education who work at museums/aquariums, and support for the sciences in general. In January, I will finish my term as president of the Association for Science Teacher Education and move into the past-president position. As much as I enjoy working with this group, I will be glad to soon be past-president! There will still be responsibility, but less pressure.

My family and I have enjoyed learning more about California geology. I co-taught a geology course this summer so I had a chance to apply my geoscience learning to a California context. With earthquakes, volcanoes, a variety of mountain-forming, petroleum, the Pacific Ocean, hurricanes creeping closer, and water issues, there are many areas to explore!

I wish the best to all of you and hope you have a great 2016!

1990's

DAVID G. DRESSMAN

B.A. Earth Science Teaching ('93) M.A. Education ('00)
Sioux City, IA

Assistant Principal East High School
Sioux City Community School District

I have been in the SCCSD since 1994 teaching geology, earth science and field biology. Last school year, 2014-2015, I accepted the position as attendance support person at EHS. Over the summer the Assistant Principal position opened and I now am the 10-12th grade Assistant Principal at EHS. I am happily married to my high school sweetheart Karen. This June will be our 10 year anniversary and we have 4 wonderful children. Kayla is a senior at the University of Augustana in Sioux Falls, SD; Ben is a sophomore at Morningside College in Sioux City, IA; Anna is a senior at Lawton Bronson High School; and Becca is a sophomore at LBHS. These four keep my wife Karen and I very busy. I try to keep in contact with UNI and I love seeing all the new things going on. Thank you for all you are doing and I hope to be able to stop in sometime soon to visit and meet all the new people. Thanks for making UNI the BEST there is.

CINDY FREIBERG

B.A. Earth Science ('94)
Faribault, MN

Sales and Marketing
Gemini Inc.

It has been a hectic year for Jim and I. We purchased a home near our grandchildren and moved in April. I have a huge garden with wonderful soil from the Des Moines Lobe. We celebrated my parents 60th anniversary in June, family weddings and our own daughter's wedding on the hottest day in August! We made four trips to Hayward, WI with the kids and grandchildren, rock hunting, swimming, snowmobiling, fishing and hiking. Lots of memories were made. Jim and I celebrated our 40th anniversary in November. We can't believe it has gone so fast. Enjoying following the Panthers and Hawkeyes this fall and winter, it was a wild ride! As always if you are traveling up Interstate 35 call and stop by. Keep picking up the rocks and enjoy life. Best wishes.

GAYLEN HIESTERMAN

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

Branch Manager
Cardno ATC

Margaret and I enjoy watching Savoy grow into such a nice young man. In 2015 we enjoyed our trip to Florida to visit Disney, hand feed alligators, hang out at a couple beaches, explore St. Augustine and take an airboat ride. We try to camp several times each year but twice this year we had severe weather which isn't much fun. We look forward to the adventure 2016 has in store for us

2000's

SCOTT BEASON

B.A. Earth Science: Natural History Interpretation ('09)

Park Geologist
Mount Rainier National Park

Hi everyone! It has been a few years since I have provided an update but things are going great for me. I'm still working for Mount Rainier National Park as the Park Geologist, a position I've been in since 2010. I love working in the Pacific Northwest. The last few years have been very interesting in the park since we've had a variety of geologic events... no eruptions, but several floods, debris flows and other geologic events. It definitely keeps me busy though. I'm sending my best wishes to the Earth Science Department and alumni! If you're ever in the Pacific Northwest, look me up!

MOLLY (SCHLUMBOHM) DUNBAR

B.A. Earth Science Interpretive Naturalist ('09)
Boone, IL

Restoration Technician
Forest Preserve District of Kane County, IL

As of July, I am a restoration technician with the Forest Preserve District of Kane County in Illinois. So I am restoring prairie and woodlands, prescribed burning, planting flowers, running chainsaws. Stuff. Also new, I am Molly Dunbar instead of Molly Schlumbohm so that's different but easier to spell. Hope everyone is having a great semester. Looking forward to the newsletter!

MOLLY HANSON

Earth Science ('09)
Des Moines, IA

Naturalist/Environmental Education and Outreach
Madison County Conservation Board

Here are the highlights:

- Heading into my 4th year with Madison County
- Serving as Vice Chair of the Board of Directors for Iowa Rivers Revival
- Ambassador for the Des Moines Young Professionals Connection
- Madison County River Alliance member
- Midfielder for the Des Moines Velociraptors (soccer team)
- Mentor for Mentor Iowa
- Die-hard fan of the Green Bay Packers

MARIA HOEKSTRA

B.A. Earth Science Teaching ('09)
Cedar Falls, IA

8TH grade Earth Science Teacher
Cedar Falls Community School District

My family and I live right here in Cedar Falls. I am in my 7th year of teaching and thoroughly enjoy my time with my 8th graders at Holmes Jr. High. In an attempt to pay back the teachers who graciously welcomed me into their classrooms while I was completing my degree, I have been able to host many Earth Science Teaching majors in my classroom who are in their 2nd or 3rd level of field experience through the College of Ed. It's been nice hearing about everything that has changed at Latham and comforting to hear many things are the same.

On a more personal level, I have a daughter (Adaline Kay) who is in kindergarten here in Cedar Falls, and my husband works as a software developer in the area. We recently moved to a new house and are in the process of doing extensive renovations to the main floor. Hopefully by the time this newsletter is published it will be DONE!

SCOTT MENSEN

B.A. Earth Science ('04)
Boynton Beach, FL

Lab Manager
Universal Engineering Sciences, Inc.

I've been with Universal Engineering for the last 11 years. We are a geotechnical engineering consultant, but my expertise is in construction materials testing, building inspection, and environmental engineering. I recently passed the ASBOG Exam in October and became a licensed Professional Geologist in the State of Florida. When will Iowa join the PG community? Our office was part of the Miami Tunnel from Dodge Island to Watson Island at the Port of Miami. It was easily the biggest project I have been a part of. As for my personal life, I recently became engaged to my beautiful fiancée, Andrea, and we are set to get married in June 2017. Life is going pretty good right now. Go PANTHERS!

NICK PAGE

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

Environmental Specialist Senior
Iowa DNR

I'm currently in my 13th year working for the DNR. I continue to work in the Emissions Inventory section of the Iowa DNR - Air Quality Bureau. I've spent most of my time in the last couple years working to migrate Iowa's air emissions data from an older legacy database to a new reporting system that we plan to have implemented in the next few months to a year.

AMBER WOLF

B.A. Earth Science ('01)
Okoboji, IA

Environmental Specialist
Department of Natural Resources

I have just begun my 8th year of working for the Iowa Department of Natural Resources, and I am starting my 6th year at the field office in Spencer as an Environmental Specialist. I continue to enforce Iowa's regulations regarding air quality and water quality and perform various duties in relation to environmental emergency response. My husband, Andy, and I have two sons, Lincoln (6) and Reid (3). We still reside in Okoboji, where summers are never quite long enough.

Hope all is well at UNI – I really need to visit campus sometime. It's been too long!

2010's

COLLIN BARKER

B.A. Geology ('14)
Minneapolis, MN

Substitute Teacher
Teachers on Call & Spyhouse Coffee

It has been over a year now since I graduated and I am now living in Minneapolis with my wife of six months. I am eager to begin my career in geology or environmental work although I am finding it extremely difficult to find employers who are willing to hire someone who doesn't have previous work experience. In the meantime, I am currently working in specialty coffee and as a substitute teacher.

CODY MIRELES

B.A. Geology ('13)
Spring, TX

Chemistry Teacher
Klein Collins High School

After graduating in 2013, my fiancé and I moved to South Korea where we taught English at public schools in a town called Sunchang. We taught there for one year and upon moving back to the States, we moved to Houston, Texas. I am now in my second year teaching chemistry at Klein Collins High School.

AARON STOLLEY

B.A. Geology ('14)
Tempe, AZ 85281

Water Resources Specialist II/Field
Services Hydrology Division
Arizona Department of Water Resources

I moved to Arizona in July 2015, just a few months after graduation, to follow my girlfriend on her pursuit to get back to school and earn her undergrad degree. I was reluctant to leave friends and family, but it was a decision that was made easily since I really had nothing else holding me to Iowa. I really wasn't having luck with my job search and thought it might be easier in Arizona. I had an interview lined up right away when I moved here, but it didn't pan out. I ended up getting a job doing landscaping for a property company in Phoenix. I worked for 5 months while looking for jobs in my degree field. I found an opening online for the ADWR and applied. The whole process from applying to being hired only took a mere 3 weeks. A large part of this job is field work, which I grew to love while at UNI. My experience at Western Michigan University's Hydrogeology Field Camp taught me some valuable skills and pushed me toward this career. I have already been working here for a month and time is flying by. They always say time flies when you're having fun. I am very lucky to have found this job and I absolutely love what I am doing.



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