New EDS System for Scanning Electron Microscope

Thanks to a generous donation from emerita faculty member and former Associate Dean of the Graduate School, Dr. Carla Montgomery, the department acquired a new Energy Dispersive Spectrometer (EDS) for its scanning electron microscope (SEM).

The new detector is orders of magnitude faster than the previous unit and the acquisition engine allows for better imaging than that provided by the SEM alone. The instrument is one of the work horses of the department and is used by faculty, undergraduate and graduate students to image and analyze everything from microfossils to petrographic thin sections. Students and faculty from engineering and physics are also frequent users of the SEM, and help to fund its operation and maintenance through user fees.

Mark Frank Honored with New University Award

In the fall of 2016 NIU created a new, university-wide, Distinguished Graduate Faculty Award. The award annually recognizes two faculty for outstanding scholarly achievement and contributions to graduate education at NIU. Recipients receive $2,000 and are recognized during the December graduate school commencement ceremony, where they assist the President and Dean of the Graduate School with the distribution of diplomas to the graduating students. Mark Frank was one of the inaugural recipients of the award. Mark received high praise from colleagues and students who prepared his nomination package. Josh Ehlich, Dr. Frank’s Ph.D. student, wrote that Mark “always puts graduate students first, and does everything in his power to ensure our success.” Department Chair Mark Fischer noted that Dr. Frank is responsible for teaching the department’s highly regarded GEOL 501 Foundations of Graduate Research course, in which students learn to develop and write research proposals. After taking this course, graduate students in the department have won nearly $70,000 of competitive, external funding since 2014. In his letter supporting Mark’s nomination, Ross Powell noted that in addition to being a recognized expert in his field, Mark is a respected teacher and mentor.
Alumnus Leads Field Trip

You might not know it, but more than a decade ago, alumnus Richard Lassin ('73) discovered an enormous mineral deposit in Michigan's Uber Peninsula. In June, Richard led a two-day field trip to what is now Aquila Resources Inc.’s Back Forty Project, as well as several other sites in the region. The field trip was attended by Joshua Ehlich (Ph.D. student), Josh Schwartz (M.S. student and lab manager) and his daughter Wendy, Kevin Voelz (M.S. student), Dr. Sheldon Turner (Triton College) and two undergraduate students from Triton College. Housing on the beautiful Menominee River was generously provided by Aquila Resources. Now in the permitting stage, the Back Forty Project is a volcanogenic massive sulfide (VMS) deposit with considerable resources of gold, zinc, copper, and lead. Current resource estimates suggest the mine will have a life of 16 years, and will provide hundreds of jobs and $20 million per year in tax revenue to the state of Michigan.

Trip participants were first given a tour of Native American burial grounds on the property (these will not be disturbed by mining), and a general overview of the Back Forty Project. Richard then retraced the steps he took in making the discovery, interpreting data from one water well and one outcrop, and then securing mineral rights and defining the economics of the deposit. Participants were able to observe active coring and communicate directly with the senior geologists at Aquila Resources about the project. Richard guided students in orienteering the property, measuring strike and dip of structural features, identifying and interpreting slickensides, identifying gossan mineralization, and making rough calculations of a deposit’s size and economic value. The day was finished with a tour of the nearby Chalk Hill hydroelectric dam operated by WE Energies.

On Wednesday, June 7, Richard led the group to the exploration office of the Eagle Mine, a subsidiary of London Mining, in Ishpeming, MI to learn about their newly discovered Eagle Nest deposit. Students were able to examine newly split core, were given a presentation on the new discovery by Eagle Exploration Manager Bob Mahin and were each given massive-sulfide-mineralized core samples. On the way to Ishpeming, the group stopped at the Republic Mine for a brief history on Michigan iron mining and to collect stunning samples of specular hematite/banded iron formation. On the return trip from Ishpeming, participants were able to see the Jasper Knob banded iron formation; a complexly folded and faulted iron formation that proved too hard for their rock hammers.

All participants had a wonderful time and thanked Richard, Aquila Resources Inc., Eagle Mine, and WE Energies for their time and hospitality.
Research Experience for Undergraduates

In the spring of 2016, Associate Professor Melissa Lenczewski received word that she had won roughly $400,000 to study Water Quality and Tourism in the Riviera Maya, Mexico. The funding came in the form of an NSF-REU (Research Experience for Undergraduates) grant that will enable Lenczewski and NEIU colleague Ken Voglesonger to engage promising Latinx students in the geosciences. The summer of 2017 marked the first field season for the project, and culminated in amazing student presentations at NIU’s summer research symposium.

Why the Riviera Maya? The Yucatán Peninsula, including the tourism center of Cancún, is considered a groundwater-dependent ecosystem, completely reliant on aquifers for its supply of fresh water. The principal fractured karst limestone aquifer is characterized by rapid transport of microbial and chemical contaminants from the surface into the aquifers below, and is an ideal setting to study the interaction between rapid development and groundwater resources. Over the months since being notified of the award, Lenczewski and Voglesonger recruited a group of six undergraduate students from across the country to join in their REU studying geochemistry, geophysics and geomicrobiology in the Riviera Maya. Individualized student projects ranged from aquifer contamination to groundwater flow, wastewater treatment, and public health impacts.

The REU students came to DeKalb from Chaffey College and Humboldt State University (California); Harold Washington College and Northeastern Illinois University (Illinois); and San Antonio College and Lamar University (Texas). They came from diverse educational backgrounds and most had little prior experience with integrative, applied geoscience. After spending two introductory weeks at NIU working with their faculty mentors to develop their projects and research plans, the students dove into fieldwork in Mexico for four weeks, alternating their time collecting samples and analyzing samples in the laboratory at the Yucatán Center for Scientific Research (CICY). Students spent the final two weeks of the program at NIU analyzing data and developing posters to summarize their research. Five of the six posters were selected for national conferences, and several of the students are now considering graduate study in geoscience – an option that most had not previously considered.

Faculty and alumni involved in the REU include Lenczewski (NIU), Voglesonger (NEIU), Tomoyuki Shibata (NIU), Jim Wilson (NIU), Laura Sanders (NEIU), Phil Carpenter (NIU), Rosa Leal-Bautista (CICY, Ph.D. ’05), Luis Marin (Ph.D. ’90), Kristin Huffine (NIU), and Moria Nagy (Rock Valley College).

Do you know a promising undergraduate student in a STEM major? Tell them to visit the Institute for the Study of Environment, Sustainability and Energy to learn more about the REU program.
Faculty Spotlight: Nicole LaDue

In 2013 the department was lucky to entice Dr. Nicole LaDue to join the faculty. She was hired on a joint appointment with the college’s Center for Secondary Science and Mathematics Education (CSSME), and is an expert in geoscience education and spatial cognition. In between redesigning our introductory geology courses, mentoring graduate students and building collaborations across campus, she found a few minutes to answer our questions.

Q. Tell us about your educational background. From where did you get your degrees and what kind of work were you doing before coming to NIU?
A. I started out as a geology major and math minor at SUNY Albany, field tripping around the Berkshires, Catskills, and Adirondacks. After a brief time as a geology graduate student at Cornell, I earned a Master of Arts in Teaching and taught high school earth science in the Hudson Valley for six years. From there, I was awarded an Albert Einstein Distinguished Educator Fellowship to serve the Geosciences Directorate at the National Science Foundation for two years. My experiences at NSF opened my eyes to the world of discipline-based education research, where I could combine my passion for geology and educational psychology. I spent four years in the Geocognition Research Lab at Michigan State University on a University Distinguished Graduate Fellowship, earning my Ph.D. in 2013.

Q. What are your research interests?
A. I am particularly interested in how spatial thinking influences learning in geology. Geologists have to work with complex diagrams, mentally manipulate three-dimensional structures, and consider processes that occur on extreme spatial and temporal scales. Statistically, spatial thinking skills are a strong predictor of future science career success, so my interests lie in how to best train spatial thinking in the classroom. I am also interested in how we can diversify the geosciences. We are the least diverse science field and yet we have above average job growth and meaningful career opportunities.

Q. Talk a bit about your work since arriving at NIU. What would you say was your biggest accomplishment, the biggest hurdle you overcame, or the most fun you’ve had?
A. Since arriving at NIU in 2013, I have participated as a Principal Investigator on three NSF grants. Two projects included academic community workshops to promote discipline-based education research and diversity in the geosciences. The third project is currently active and is an interdisciplinary team of geoscientists, education researchers, and cognitive psychologists, focused on researching spatial thinking in the geosciences. After four years of hard work establishing a geoscience education research lab at NIU, I am excited about having the first graduate students in my lab: Bailey (Zo) Kregger and Justin Moore. Their work expands the scope of the lab’s research to include studies on spatial problems associated with stratigraphy and the Augmented Reality Sandbox. Zo and I also just analyzed data from our Introductory Geology course, where we transformed the curriculum to increase students’ engagement. We found the new curriculum led to significant gains in students’ conceptual knowledge of geology and motivation for science.

GEOL 120 students in Dr. LaDue’s class work with a vice and spaghetti model of an earthquake asperity. Lab manager Josh Schwartz helped to design the devices, and constructed them in his home workshop.
Q. What do you like to do when you’re not being a professor?
A. When I’m not in Davis Hall, I can be found taking walks with my 1-year-old daughter Theia, husband Sheldon, and dog Gimli. I also have played with the NIU Community Steelband. NIU is lucky to have a world-class steel pan program, so check out a concert when you’re in DeKalb!!

Q. What do you expect to be working on over the next year? What do you hope to accomplish with this work?
A. Over the next year, I will be publishing research on using classroom response systems (aka clickers) to promote spatial thinking and diagram comprehension in geology. I hope this work will be adopted by other faculty members to help students overcome the spatial hurdle associated with understanding basic geology concepts.

The image below displays data from introductory geology. When first presented with this image, students were told that the white X marks the location of the currently active volcanic caldera and that the plate moved southwest over the hotspot. The question we posed asked students to click or touch where the next hotspot will form if the plate starts moving north. Even after watching an animation and discussing hotspot formation, we found over 10 percent of students would switch from the correct location south of the X to the wrong location north of the X. This is an example of a spatial reference frame problem that students frequently encounter in geology.

Sigma Gamma Epsilon News

The department chapter of Sigma Gamma Epsilon (SGE) started the 2016-2017 academic year with our annual department kickball game and cookout. Throughout the year they conducted activities for the Boy Scouts of America, helped to staff the department booth in the Convocation Center at NIU’s annual STEMfest event in October, and encouraged extracurricular socializing at a weekly coffee hour before every department colloquium. These latter events have been instrumental in furthering informal interactions between faculty, students, staff and visiting speakers. Undergraduate students have particularly enjoyed the networking opportunities and the chance to get to know our speakers and to explore with them, the possibility of graduate research at their home institution.

For the 2017-2018 academic year SGE will be selling pint glasses for a fundraiser. Purchase of a pint glass will get you free coffee at our weekly coffee hours as well as cool pint glass to drink water or whatever other liquid you decide to drink in your cool new glass. If you’d like to purchase a glass, send an e-mail to askgeology@niu.edu.

The chapter would like to thank their faculty advisor, Dr. Justin Dodd and the department Office Manager, Nina Slack, for all they do to help the chapter. SGE also would like to thank Rebecca Tarbutton (M.S. ’16) for all she did to balance the chapter’s books and make sure their financial system was up to date.
Undergraduate Student Spotlight: Seth Coursey

In the spring of 2017, Seth Coursey was awarded an Ira Edgar Odom scholarship, the department's Outstanding Undergraduate Senior award, and was also recognized with a Dean's Award. We thought you'd like to get to know this promising student a little bit more.

**Q.** Tell us a bit about yourself and how you landed in geology and environmental geosciences. Did you always know you wanted to earn a geology degree, or was there something else in mind when you first started out in college?

**A.** Well, I come from community college and my goal at the time was to go into nursing. I enjoyed the learning and science aspect of it, but as I was about to get my Associate's degree, I realized that it wasn't the career for me. Thankfully, due to my love for the outdoors and all things science, I took additional courses such as environmental science, geology and biology and found them intriguing, as well as satisfying. Honestly though, at the time a geology degree didn't even cross my mind. It wasn't until after I graduated and took additional math and environmental courses that a geology degree finally became a possibility.

**Q.** We hear you've been doing some research in Dr. Frank's experimental mineralogy lab. What kind of work have you been doing? What do you find interesting about working in the lab?

**A.** I've been doing undergraduate research with Dr. Frank for two semesters, going onto a third this fall. In the lab we use high temperature/high pressure furnaces to run experiments with a predetermined geochemistry at set temperatures and pressures to determine the behavior of particular metals we are investigating. For most of my time working with Dr. Frank, we have been running experiments involving Mississippi Valley Type deposits. Specifically, we have been testing partition coefficients between Zn and dolomite. Recently we have transitioned into Au:Cu porphyry deposits and the effects that sulfur and oxygen concentrations have on the behavior of metals. My main intrigue is the chemistry behind it. Using chemistry and its application to geology, we are able to create a real world application for geochemistry in a way that is useful and valuable to society, no matter the current political climate.

**Q.** I understand you're almost finished with your B.S. degree. What are your plans after graduation? Were there any particular experiences in the program that you think helped you prepare for the job market and life after NIU?

**A.** After graduation, I intend to be a slightly less poor college student, and pursue my master's degree. I've really enjoyed my experience working with Dr. Frank and I would like to do work very similar to that. Other highlights and experiences certainly involve fieldwork; things like field camp, our field trips to Baraboo and the Upper Peninsula, as well as fieldwork in the Gypsum Valley area of southwestern Colorado. All were very rewarding and I feel captured the essence of what most people envision when they first think of traditional geology. They definitely helped to integrate and solidify much of the classroom work, and they helped me identify what kind of work I really enjoy and want to be involved with.

**Q.** You have won a number of awards in the department, so obviously, you're an accomplished and respected student. Do you...
have any advice for students who are just starting in the program? What can they do to be successful?

A. Haha, the struggle is real for everyone. I think one of the most important reasons for my success is pursuing the coursework and additional opportunities that interested me most, such as undergraduate research and fieldwork in Gypsum Valley, Colorado with Dr. Fischer and Lilly Lueck, another undergraduate student in the department. I started in the environmental geoscience emphasis, but inevitably, following my motto, I quickly altered course to an emphasis more geared to those applications. I also have grown accustomed to routines and schedules, which allow me to stay ahead of my work, typically leaving me plenty of time for homework, studying and other college demands. At the end of the day, the professors are there to help and teach you - don't be afraid to ask questions, don't be afraid to be wrong and always put your best foot forward.

“Don’t be afraid to ask questions, don’t be afraid to be wrong, and always put your best foot forward.”

Website Updated

After more than a year of waiting and lots of pleading, our request to have the department website updated to NIU’s new look and format was finally granted and our new webpage debuted in the fall of 2017. The layout is much cleaner, and we hope much more accessible and easily navigated than the previous site, which was going on a decade old. We are still wrestling with how to maintain the site and update the information on a regular basis, but with university support, we hope that obstacle will be easily overcome.

Please take some time to visit the new site and send us your feedback at askgeology@niu.edu. We are still working through some adjustments of the layout and content, so expect some ongoing changes in the coming months.

We have yet to repost our colloquium schedule, so we’re particularly interested in how many of you use that resource and whether you think we need to include it on the new site.

If you weren’t aware of it, we do maintain an active Facebook page that you can find by clicking on the About tab of the new site. We also recently created an Instagram page for the department, which you can connect to from the same About the Department page. If you want the most up-to-date information on all we’re doing, the Facebook and Instagram pages are probably the best and easiest way to stay informed.
In Memoriam - Dr. Lyle McGinnis

On April 19, 2017 we lost Dr. Lyle McGinnis, a world-renowned polar scientist and geophysicist who could easily be called the father of NIU’s Antarctic research program. McGinnis arrived at NIU in 1967 after working on groundwater quality issues in Kabul, Afghanistan. In the succeeding 16 years, before leaving NIU to become the Chair of Geology at LSU, McGinnis spearheaded efforts in Antarctic research that paved the way for all subsequent Antarctic drilling projects.

As a manager of the Antarctic Dry Valleys Drilling Project in the 1970’s, Lyle made a name for himself as an inventive pioneer in logistics. Board of Trustees Professor Ross Powell noted that this was a time when research stations and facilities were incredibly basic, and air support was the norm for Antarctic research expeditions. Against incredible odds, McGinnis won funding to develop and outfit over-ice traverse containers at NIU, and to ship them to Antarctica, where they had to be pulled across great stretches of ice with tractors. Powell described this endeavor as beyond audacious, and expressed disbelief that anyone could actually do it with the technology available at the time.

In all, McGinnis spent 14 polar summers in Antarctica between 1969 and 1985. His contributions to polar science were recognized with an NSF Antarctic Service Medal in 1960, and McGinnis Peak (84°32' S 177°52' W), a 4,170' mountain in the Transantarctic Mountains, was named for him in the late 1950s. McGinnis’ legacy will live on in the department, and his warmth and generosity will be greatly missed.

Reed Scherer’s Publication Makes a Splash

In the fall of 2016 Board of Trustees Professor Reed Scherer published with colleagues from UMass and Penn State, a controversial paper in *Nature Communications*. The paper tackled a divisive problem from 1984—namely—how did marine diatoms make it into Pliocene rocks exposed more than a mile above sea level in the Transantarctic Mountains?

Research to date has been roughly split into two camps, each proposing a different explanation for the diatoms’ odd location, and each with different implications for the behavior of the Antarctic ice sheet. Dynamicists argued that the ice sheet had collapsed in the Pliocene, bringing the ocean much closer to the Transantarctic range, and that subsequent deformation and re-advance of the ice had placed the diatoms in their current position. Stabilists argued that the ice sheet did not collapse, and that strong winds carried the diatoms from a distant ocean to the mountains.

Scherer’s paper uses new ice sheet models to postulate that only moderate Pliocene warming, like that we see today, could have led to the retreat of ice from the Aurora and Wilkes basins, forming excellent places for diatoms to thrive and accumulate. Further glacial retreat then led to isostatic rebound that exposed these deposits to wind erosion, leading to their redeposition in the Transantarctic Mountains.

How’s that for a compromise?
Congratulations August 2016 - May 2017 Graduates!

B.S. degree graduates in blue, M.S. degree graduates in green, Ph.D. graduates in yellow.

Erik Battersby  James Benco  Jacob Bergeron  Tanner Clausen  Julie Daniels  Charlie Duval  Meghanne Findlay  Eldora Holder

Steve Kramp  Daniel Large  Elaine Lord  Lisa Matson  Charlie Oliver  Chad Stauffer  Jorge Villalobos  Kevin Voelz

Colleen Wallin  Tirzah Abbott  Jason Coenen  Sonny Divita  Jacob Feller  Carrie Fortney  Michael Grzybowski  Hal Hacket

Xai Her  Kristen Hill  Cory Hunter  Katelyn Kane  Audrina Lehman  Matthew Mann  Vitaliy Morozov  Katherine Quesnell

Justin Rosenblume  Rebecca Tarbutton  Nick Williams  Joshua Zodarecky  Chris Greer  Tim Hodson

Field camp students examine the contact between the Mowry and Frontier Formations in the field area for the Alkali Anticline mapping project.
Graduate Student Spotlight: Garima Lohani

Garima Lohani is starting the second year of her M.S. program and is well-known for her willingness to take on leadership roles in our many student volunteer activities. She is a longtime member of the department’s student advisory committee, which meets monthly with the department chair and works to collaboratively improve the experience of all students here in the department. She graciously agreed to a brief interview just before leaving on a weeklong field trip to New Mexico.

Q. Tell us a little about your undergraduate institution. Did you have any special experiences there that nurtured your interest in graduate school? What was your most memorable part of your undergraduate training?

A. I received my bachelor’s in geology with a minor in chemistry from Black Hills State University in 2014. BHSU is a small state university nestled in the northern black hills of South Dakota, in a beautiful city called Spearfish. BHSU is a liberal arts university that was founded in 1883 and until today graduates the most number of teachers in the state of South Dakota. The department of natural sciences at BHSU is actively involved with the Sanford underground Research Facility (SURF) which used to be the old Homestake gold mine located in Lead, South Dakota. As an undergraduate, I had the opportunity to visit the lab and tour some of the facilities.

One special experience at BHSU that first got me thinking about graduate school was the first time I took a volcanology course. I have always found volcanoes very fascinating, and sometimes dangerous, I believe that they are nature’s personalized spectacular fireworks! I could talk about volcanoes all day long, but I should get back to the subject of my special moment. So, while taking volcanology and advanced volcanology, I was able to learn multiple applications of chemistry and physics in volcanological research. The idea of being able to apply multiple scientific approaches to understand volcanic processes really fascinated me and that’s when I immediately knew that I needed to pursue a master’s degree in geology and focus on volcanology as a field of study. In addition to the volcanology courses, I was fortunate to have Dr. Abigail Domagall, who is a volcanologist, as my undergraduate advisor. Her research experience and her passion for volcanoes also played a role in encouraging and inspiring me to pursue a master’s degree.

Finally, one of my most memorable experiences as an undergraduate was being able to work as a research assistant for the chemistry department under Dr. Katrina Jensen, then associate professor of chemistry. I worked on synthesizing an aromatic compound that could be further used in purification methods to filter out other impurities in a solution. Although not directly related to volcanology, this experience helped me learn more about laboratory techniques and research analysis tools I am hoping to apply to my research as a graduate student and later in life.

Q. What can you tell us about your life at NIU thus far? With whom are you working? What has been the most interesting or challenging thing you’ve faced in your research?

A. I have been at NIU for a year now and I really enjoy being a graduate student here. As an international student, I really appreciate the support they provide to the diverse community of NIU, which I believe has helped many students make this place their home away from home. As a graduate student in the geology department, in just the last year, I have learned so much from the courses I have taken and from my experience as a teaching assistant. I have also been involved with the university’s Sigma Gamma Epsilon honor society, which has given me an opportunity to help organize events in and outside of the department. I think being at NIU has given me a platform to grow academically as well as professionally.

For my graduate research, I am currently working with Dr. Jim Walker, on understanding the effect of the viscosity of magma on the eruption style of a volcano located in Nicaragua. So far, I have experienced some challenges in my research, but I have been able to overcome them with the help of my advisor who has always been very supportive. One such challenge I can think of is the ability to obtain
funding to conduct research. I was planning to travel to Nicaragua personally to collect samples for my project. Unfortunately, I was not able to secure the funding to do so. Thankfully Dr. Walker helped me obtain samples by reaching out to the geology department at Virginia Tech. I received my samples from Virginia Tech this summer, just in time for me to conduct my experiment this fall.

Q. What are your plans after you graduate? Have you had any special experiences that have helped you prepare for life after NIU?

A. After I graduate from NIU, I plan on working for a year or two and then maybe go back to school for a Ph.D. degree in volcanology. Over the summer, I did an internship with an environmental consultancy in which I was able to learn various field techniques while performing water, soil and sediment sampling. I think this experience will help me advance along my path toward a career of a geologist. As for my plans to get a Ph.D., I think a master’s degree from NIU will prepare me for my upcoming challenges I will face as a Ph.D. candidate.

Second Annual End of the Year Celebration

On May 4, 2017 the department held its second annual end of the year celebration to recognize student, faculty and staff achievements, and to award scholarships to many of our deserving students.

Assistant Professor Nathan Stansell was selected by the undergraduate students as the most outstanding professor in the department, while Jim Walker received the same award from the graduate students. M.S. student Amber Sanderson was awarded the Carla Montgomery Graduate Scholarship in Geochemistry, M.S. student Marley Rock was awarded the Ira Edgar Odom Scholarship, and Ph.D. student Peter Mortensen was awarded the Brian Fugiel Scholarship. The faculty selected M.S. student George Reo as the 2016-2017 the Most Outstanding Graduate Student. Undergraduate student Seth Coursey received the Dean’s Award and was also selected by the faculty as the Most Outstanding Undergraduate Senior. Undergraduate Kaelyn Quinlan received the John R. Young Scholarship and Collin Andrews received the Carla Montgomery Undergraduate Scholarship in Geology.

Field Trip Fun

While driving for the April 2017 version of Mark Fischer's GEOL 335 Dynamics and Structure of the Earth field trip to the Baraboo, Wisconsin area, M.S. student David Canova learned a little about driving 12 passenger vans. Attempting a quick turn-around through a hay-covered and waterlogged shoulder, David helped the group learn a real-world application of concepts like stress and friction! Luckily a local farmer came by and applied a tow rope to help the group on their way.
Where Are They Now?

Andrew Greenhagen graduated with his B.S. degree in 2007, and his M.S. degree in 2010. Since then he's been on a mission to clean up and protect water in Illinois and the surrounding region. We caught up with him for a brief conversation about his life and work since graduation, as well as the path that led him to NIU in the first place.

Q. You have a fairly long history with the department, earning both a B.S. and M.S. degree. Would you mind recounting your path through these programs? What experiences had the most lasting impression on you? Research, coursework, or something else?

A. I came to NIU as a transfer student after earning my A.S. from Illinois Central College and Black Hawk College in west-central Illinois. While earning my bachelor's degree, I found myself drawn to the work of Dr. Melissa Lenczewski. She and I spoke about research opportunities, and I soon enrolled for graduate school at NIU where I wrote my thesis on the ability of the shallow subsurface to remove pharmaceuticals from water. Looking back, I think I can honestly say that the most lasting impressions were made by the people around me in the geology and geography departments. NIU geology had outstanding faculty and staff, and I was blessed to study with an exceptional group of fellow graduate students.

Q. Where are you working now? What kind of activities fill your day? How do you think your time in the department prepared you for your current career?

A. I work for the United States Environmental Protection Agency in Chicago in the Water Division Underground Injection Control Program. Our program is tasked with protecting underground sources of drinking water under the Safe Drinking Water Act. Generally, I write permits for injection wells, inspect facilities, and take enforcement actions. While many think of EPA as a scientific agency, which it is, EPA is primarily a regulatory agency. I work at the nexus of science and policy; nearly equal portions of my time are devoted to regulations and law as compared to science.

In contrast to my thesis research that focused on the top two meters of northern Illinois, my current work in Illinois is related to geologic carbon sequestration in the Mt. Simon at depths of up to 7,000 feet. Decatur, Illinois is home to the nation's first and only Class VI geologic sequestration injection well. Our office in Chicago was responsible for this first-of-a-kind permit, and I was asked to be the permit writer for this project. The well is permitted to inject 1.1 million metric tons of carbon dioxide per year, which is equivalent to the emissions of 232,000 cars.
In addition to my general geoscience foundation from NIU, the most direct preparation came with the environmental field camp and the arrival of the department's Geoprobe. Operating the Geoprobe and completing an associated course on drilling methods have proven extremely valuable for me.

Q. You've maintained a strong relationship with the department since graduating. What compels you to continue to stay connected and give back?
A. My wife Sarah (NIU B.S. 2010, D.P.T. 2013) and I owe a large number of our career successes (and finding each other!) to NIU. As a student, I was fortunate to meet and interact with a large number of geoscience professionals who gave me an informed perspective on life after graduation. It's great to be able to return that service now.

Thank You Donors!

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How to Support the Department

Alumni and friends of the department often ask how they can best support our students and the department in general. What is your greatest need? or What is the most immediate need? are what we hear. Our answer to those questions is that we encourage donors to give in a way that makes them feel most connected to their gift, and toward the causes that they feel strongly about. The department typically puts our needs into four broad categories: (1) Student scholarships, (2) Field trips, (3) Laboratory equipment/infrastructure, and (4) Teaching resources. If you check out our new website under the Funding tab, you'll see we have eight major funds that we use to support students. If you want to help individual students in a direct way, you should donate to these funds, or create a new one that directs funds to be used in a manner that is important to you.

If you want to help the department in a more general way, for example, by directing your funds toward the purchase of new analytical or teaching laboratory equipment, you can indicate this by including a comment in the “special instructions” box of the online donation page you reach after clicking on the Donate tab in the upper right corner of the new website. Regardless of how much or how you donate, we are always grateful for your support, and hope we continue to produce high-quality students and scientific contributions that make you proud to be part of the NIU Geology and Environmental Geosciences extended family.

Go Huskies!
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