President Leath searching for and finding fossils

Dean Beate Schmittmann with geology pick in hand scouring for belemnites and having success!

The completed Smith Lodge

Jerry Thiel, construction engineer, outlining progress to President Leath, Dean Schmittman, and Janet Leath

Construction progress at camp

The Leaths having a “light” lunch at Dirty Annie’s
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Greetings from the Chairs

Welcome to the 2014 edition of *The Varve*. As you may surmise from the dual pictures above, the Chair’s torch has been passed and greetings come from both the former chair, Neal Iverson, and the new chair, Bill Simpkins. The handoff actually occurred on July 1 without much fanfare. Neal is quite happy that Bill generously agreed to carry it for the next three years. Bill reports that he has already experienced many of the job’s challenges and rewards, but he remains upbeat about his ability to carry the department forward into the future.

As you will experience in the ensuing pages, this is truly an exciting time for the Geology Program. We are receiving unprecedented financial support from our alumni and new faculty positions from the College of Liberal Arts and Sciences. The Carl F. Vondra Field Station is undergoing a transformative renovation, thanks to the generosity of Tom and Evonne Smith, Gary and Sandra Johnson, among many others. This gift from the Smiths has also allowed us to hire a new Field Camp Director, Dr. Aaron Wood. Along with Aaron, we will welcome three new faculty to our program in Fall 2015! Our major numbers (86) are at all-time highs, commensurate with growth in the university enrollment and geology employment opportunities. The undergraduate Geology Club and Geology Graduate Student Organization are very active in setting up their own field trips and mineral/pizza sales. Graduate students were active in applying for grants from professional societies in support of their research and they collectively received more than $25K, which we believe is an all-time high. Oil and gas companies have returned to campus to recruit students and contribute financial support to the department’s mission. We continue to teach a large number of students in the College and, according to our teaching evaluations, do it very well. Our research portfolio is growing and two assistant professors, in particular, are getting noticed in the media for unique research. In August, Al Wanamaker’s blog describing his recent field work in northern Norway, creatively entitled “Dead Clam’s Talking,” appeared in Discover Magazine on-line. More recently, Franek Hasiuk’s GeoFabLab was featured on the front pages of the Iowa Board of Regents and GSA web sites. In summary, the Geology Program is on the rise, and it is a good time to be a geoscientist at Iowa State University.

We are truly grateful to all of you who continue to support the department in many ways, from financial contributions to teaching at field camp to hiring our graduates. Your generosity motivates our faculty, staff, and students to achieve the highest levels of success. We invite you to visit us and, in particular, to take part in the ISU Field Camp Reunion (July 3-6, 2015). Details have been sent in a separate mailing. You will see first-hand the impact of your support on students and also have time with old friends, current and former professors, Dean Beate Schmittmann of the LAS College, and hopefully ISU President Steven Leath and Mrs. Leath. We also encourage you to follow departmental news and events at http://www.ge-at.iastate.edu. Thank you again for your interest and support, and we wish you the best for the coming year.

With gratitude and best wishes,

Former Smith Family Foundation Departmental Chair in Geology

Smith Family Foundation Departmental Chair in Geology

Brittany Grosskopf, Diego Valderrama and Diego Munoz searching for brachiopods at the Rockford Fossil Park, IA

Geology 102 class at the old Rockford Brick and Tile Company

Geology 102 students sorting through brachiopods at Rockford Fossil Park, IA
University and Department News

Iowa State University is growing. When Neal started his first semester as chair three years ago, student enrollment at ISU was under 30,000. Our most recent count shows that we now have 34,732 students – and we can feel it. The campus is bursting at the seams and it is much more difficult to get across campus without the aid of downfield blocking. Ames’ five-minute “rush hour” seems to have extended to at least 15 minutes. Are we complaining? No. We have 75 geology majors and 11 Earth Science majors – a 38% increase over 2011 numbers and the largest major count in the 25 years that Bill has been at Iowa State. We also have 18 graduate students in residence, with 10 of those as PhD students. Enrollment growth and its associated tuition revenue for some 8,126 students in the college are the major source of money for LAS (84%) and effectively offset the decline in revenue that might have occurred due to tuition-rate freezes imposed during the past three years. ISU administrators think that enrollment will eventually level off at ~35,000 students, due to flattening of high school graduation rates, tight classroom space, and other finite resources on campus.

The Department has benefited directly from generosity from the College of Liberal Arts and Sciences (LAS). First, LAS Dean Beate Schmittmann provided an additional salary increment this year to all tenure-track faculty in the Department. This additional increment was in response to a recent ISU Institutional Research survey that showed our salaries were equal to about 81 percent of colleagues at peer institutions. We were certainly aware that we were woefully underpaid by comparison to our colleagues in the other sciences at ISU; this raise puts us much closer to equal footing with them. Second, in addition to allowing a search for a Field Camp Director, the Dean allowed us to fill a tenure-track environmental geochemistry position vital to the strategic mission of the department. We hired Betsy Swanner Smith, a post-doctoral researcher who received her PhD at the University of Colorado in 2011. She will begin in fall 2015 after finishing her post-doctoral appointment at the University of Tübingen in Germany. Her research investigates relationships between microbial processes and nutrient cycling, which will position her well to collaborate with environmental geologists and hydrologists in our department, as well as with faculty in other departments. Among other courses, she will teach Environmental Geochemistry – a course that has been in the catalog but untaught in our department for seven years. We enthusiastically welcome Betsy and her family to the department and Ames! Third, LAS approved tenure-track faculty searches for positions that will also start in Fall 2015. One of these will be a hire in structural geology/tectonics, thus filling the void to be left by Carl Jacobson’s retirement next summer. The second hire will be a physical geographer who studies interacting Earth surface processes over the wide range of spatial scales relevant to environmental sustainability and its relationship to climate change. This hire is part of a sustainability focus area (cluster) hire that includes a new position in our Meteorology Program in 2016 and three positions in other departments. The hire was made possible by the Strategic Research Initiative (SRI), a special program initiated by Dean Schmittmann to enhance interdepartmental collaboration and research productivity. The department played a pivotal role in crafting a persuasive, successful proposal to the Dean.

The expansion of our faculty numbers reflects the Dean’s recognition of our high productivity as a department, both in teaching and research. Relative to the size of our budget, we continue to teach more students than any of the other science departments in LAS, and that teaching, through ISU’s budget model, helps bankroll the college. Our major classes are now crowded, but faculty have done an outstanding job adapting to student numbers that in many cases are more than twice as large as 10 years ago. It is not a surprise, then, that two of our most dedicated undergraduate advisors and teachers received university-wide recognition this year. Professor Cinzia Cervato was named a Morrill Professor for her contributions to teaching and learning in undergraduate programs on campus and nationally. Senior Lecturer, Jane Dawson, received the ISU Award for Academic Advising Impact, for her years of advising 100s of geology majors. Despite our large teaching commitments, our faculty continue to receive external grant funding comparable to that of most other science departments in LAS (relative to the size of our budget), including chemistry and physics. A group of faculty led by climate modeler, Bill Gutowski, and Kristie Franz, Bill Simpkins, and Al Wanamaker from the department, received a nearly $300K grant from the college under the SRI program. This group, along with colleagues in English, Civil Engineering, and Economics, is investigating the use of Iterative Participatory Modeling (IPM) and Agent-Based Modeling (ABM) to combine the actions of human “agents” into hydrologic and climate models. The grant is allowing the group to perform “proof-of-concept” work on this topic preliminary to submitting larger proposals to NSF and elsewhere.

Another exciting development for the department is that, after a long absence, oil and gas companies have returned to interview our students on-site in Science 1. Due mostly to the efforts of Assistant Professor Franek Hasiuk, representatives from ExxonMobil and Apache Corporation visited us this year looking for summer interns, which appears to be the preferred mode of initial hiring in the present job market. As of this writing, two of our graduate students have received internship offers. Students are also experiencing job success at some of the off-site AAGP Student Expos. In addition, interest in our students may lead to financial support of our program. Apache Corporation has indicated that they would like to support some aspects of our program financially and recently agreed to fund some new rock cabinets and shelving in the “Bone Room” to support our program in sedimentary and petroleum geology. In total, the return of these companies for on-site interviews suggests that industry has recognized that our program can produce students of a caliber equal to that of many of the larger and more well-known geology departments. This is good news for the department!
Field Camp News

Led by field camp director, Carl Jacobson, and co-teachers Jane Dawson and Mark Mathison from ISU and Chris Fielding, Tracy Frank, Dick Kettler, and Ross Secord from the University of Nebraska-Lincoln, a superb group of 36 students experienced field camp this summer: 20 from Iowa State, 10 from the University of Nebraska, Lincoln, and six from other schools across the country. This number is similar to those in the previous four years, but 50% larger than the average for the 15 years prior to that, again reflecting the increases in geology and Earth science majors in our department. Three dozen students is about the limit of what we can or want to supervise at the camp; more than that number decreases the intimacy that is such an important part of the field camp experience. Alumnus Erik Kvale of Devon Energy and his colleague Ben Burke of Noble Energy again graciously volunteered their time to teach and supervise the Greybull Sandstone oil exploration project. The exercise is a very important part of the curriculum and a student favorite and we are extremely grateful for their willingness to lead that exercise.

Next year’s students will have a completely different visual and living experience at the Carl F. Vondra Geology Field Station. We’ve reported previously the fabulous news that Tom and Evonne Smith had pledged $1.8 million to complete the renovation of the camp. Construction is now well under way (see photos elsewhere in the Varve). The “classic” dormitory buildings and communal shower facilities that many of you called home in previous summers are gone! The new facilities include two dormitory buildings and communal shower facilities that many of you called home in previous summers are gone! The new facilities include two dormitory buildings, each with six bedrooms that will house up to four students each. Every bedroom will have its own sink, shower, and toilet – quite a change from the early days! A third new classroom/lab/laboratory facility will host a full-size classroom on one side of the building and a coin-operated laundry, two showers, and two bathrooms on the other side. The new classroom will be more convenient and better for teaching and student work (complete with computer lab and microscopes) than the dining hall in Smith Lodge, which is also the main eating area in addition to being a current classroom. Several upgrades to Smith Lodge are also part of the project. Chief among them is an expansion of the magnificent deck that now adorns the south side of the lodge – it will be extended around the west and north sides of the building.

The gift from the Smiths is much more than just buildings, however, with two other very important elements. First, it created an endowment to fund future maintenance costs, which ensures that the camp will be maintained in first-class condition well into the future. Second, it provides the initial salary for a Field Camp Director, who will serve as the lead instructor for our summer field course and will be tasked with promoting and overseeing use of the facility by other academic groups and industry. Eventually, the Director will be supported by revenues generated from these outside users, along with university funds for on-campus and on-line teaching during the academic year.

We have now interviewed candidates for this position and have chosen Dr. Aaron Wood, now at the University of Florida, as our Field Camp Director. We are very excited about Aaron and his wife Carly joining us in January. All together, the three parts of the Smith gift are transforming the field camp experience. The new facilities, guided by a full-time director, will allow us to provide the best field experience possible for the students. In addition, we anticipate strong interest in the facility from outside groups, which will bring national and even international attention to the department and Iowa State University as a whole. Dean Schmittmann and President Leath both recognized this aspect of the camp when Bill Simpkins and Mark Mathison toured the site with them in September. They both believe that this facility will put ISU “on the map” with similar types of facilities elsewhere. In
addition to thanking Tom and Evonne Smith for making this field camp transformation possible, we also want to acknowledge an extremely generous supporting gift from Gary Johnson (BS, 1964; MS, 1967; PhD, 1971) and his wife, Sandra, which allowed us to increase the scope of the project beyond the original proposal. Finally, a list of important contributors would be incomplete without acknowledging the role of Professor Emeritus Carl Vondra. The strength of the camp and the generous support from alumni are the direct result of Carl’s four-decade commitment to the field camp course and the facility.

Alumni Gatherings and Honors
We were pleased to have hosted a gathering at Pint’s Pub in Denver, Colorado at the GSA Annual Meeting last fall. We had a great turnout of 17 alumni and friends and 14 faculty, staff, students, and friends from the department. The group at AAPG in Houston was a bit more intimate, with about a dozen total for our table at the All-Alumni Reception. We look forward to seeing many of you this year at AAPG in Denver.

Geology alumnus Lee Backsen of Houston, Texas (BS, 1961; MS, 1963) was recently honored with the Department’s Distinguished Alumni Award at the LAS Alumni Banquet and Awards Ceremony on October 9, 2014. Lee is a native Iowan, originally from Glasgow, Iowa. Since graduation, Lee has enjoyed a long and distinguished career in the oil industry, including senior management positions in companies such Burlington Resources, UMC Petroleum Corporation, and General Atlantic Gulf Coast. He has demonstrated exceptional commitment to the profession through a number of important service positions in the American Association of Petroleum Geologists. In his retirement, Lee continues to consult for the oil and gas industry on prospect generation and evaluation. Interestingly, his MS work 50 years ago involved some of the first subsurface investigations of the Ames aquifer in the area of Hilton Coliseum and Jack Trice stadium. During his visit to the department, Bill brought out Lee’s 1963 MS thesis and they discussed how that work has contributed significantly to the geological story supporting Bill’s current groundwater model of the Ames aquifer. We give our hearty congratulations to Lee and his wife Alice for this award. We enjoyed our visit with them and are indeed pleased and honored to have Lee as a graduate of our department.

Alumni Support
Alumni support through charitable giving benefits our students and faculty research by providing student scholarships for field camp, field-trip support, funds for graduate student recruiting, and additional resources for faculty research. We continue to be the beneficiaries of your generous support at many levels in in many areas, as evidenced by the list of alumni contributors at the end of this issue. With the Smith Foundation gift in place, the immediate needs for the additional renovation of the field camp renovation should decrease; thus, we ask that you also consider some of the other listed categories that support the department’s activities when you contemplate a gift to the department this year.

The results of your excellent support have had direct effects on the program. Last year, we mentioned that the Quentin Schmidt Memorial Field Trip Fund, which helps to reduce the cost of field trips for students, was still a bit short of the value required to endow it, at which point it could generate interest and become self-sustaining. You stepped up and we nearly made the endowment-level goal, but contributions to lift the fund to the endowment-level are still needed. With your help, we were able to recruit the types of outstanding graduate students that are vital to the teaching, research, and reputation of the Department. This year, the Bruce Bowen Graduate Fellowship, the Smith Family Foundation Fund, and the Georgia and Carl Vondra Graduate Fellowship ensured successful offers to one PhD candidate and one MS candidate for $16,000 above their normal stipends during their first two years. An additional $12,000 of funding from these sources is being carried over from three PhD students from last year. These increments were critical to “closing the deal” for all these students in today’s very competitive graduate student market. Unfortunately, our Department still lags behind most geoscience departments at comparable universities, which have endowed funds (> $1 million) in place expressly for the purpose of augmenting stipends. We see such an endowment as a long-term goal. Finally, there are equipment needs. In last year’s Varve, we mentioned the opportunity to upgrade our stable-isotope laboratory with a new, specially configured mass spectrometer for “clumped-isotope” analysis. This capability would be useful for estimating past ocean temperatures for climate change research as well as elucidating the thermal history of sedimentary basins. We would be one of the few places in the world to have such a state-of-the-art facility. Leveraging future grant proposals for such equipment with sizeable alumni funds would send a strong signal to our College and to the university that we are serious about expanding our research capabilities to be competitive with the bigger geoscience departments and committed to innovative and cutting-edge science. Please contact Bill if you are interested in any or all of these opportunities to enhance the Geology Program.
Joe Bauman  
BS 2008; JBauman@huntoil.com

I continue to work in the Williston Basin with Hunt Oil Company in Dallas, Texas. Last year, I reported how my wife, Sandy, and I had purchased a home and had been busy remodeling. Well, I’m pretty sure I could build a house from scratch now. Whoever came up with the phrase “the joys of home ownership” was a sadistic one. In our experience, a more appropriate phrase about home ownership might be “the light at the end of the tunnel is flickering …”! All in all though, life’s still good down here in Texas except they don’t serve much pork here and the sweetcorn typically isn’t as good as what you can get at Hy-Vee in Iowa!

Bjorn Brooks  
PhD 2009; bjorn@climatemodeling.org

Bjorn is working as a visiting faculty member in Earth Sciences at Saint Francis Xavier University in Nova Scotia, continuing his work on long term drivers of forest ecosystem change and large scale monitoring and modeling of carbon exchanges. Over the past year, Bjorn collaborated with colleagues to submit a patent on a new carbon capture and storage monitoring technology. He has also worked with his new community to install a new automated weather station, as well as volunteering as an adult learning tutor, swim coach for his local swim club, and handy-man for his local animal humane society. His job ends at Saint Francis Xavier University this year and Bjorn will start work at the U.S. Forest Service in Asheville, NC where he will work on determining new measures of forest resilience.

Humberto Carvajal  
MS 2007; carvajah@umail.iu.edu

I am still working at CoreLab in Houston, focusing more on geochemical assessments of unconventional plays around the world (shale-gas and shale-oil plays). I am overseeing dozens of projects, which makes my life very hectic!! I found a club to play soccer with regularly (after not doing so for eight months) and I am also training for the Houston marathon next year (or 2016 perhaps). Life is the same, and I am becoming more accustomed to Houston’s lifestyle (it will be two years this coming December), especially the hot summers!! I have been married for six years, but there are no kids on the horizon … I am planning to visit Ames … one of these days. I miss it a lot!

Mitchell Cline  
BS 2009, MS 2011; mitchellcline5@gmail.com

This year provided quite the change for the Cline family when my wife (Kelsey) was awarded a radiology residency at the Auburn University Veterinary School in July. After a year in Chicago working for the environmental consulting firm Natural Resource Technology, I moved south with Kelsey and accepted a geologist position with the environmental engineering firm CH2M HILL in Montgomery, AL. I’m excited for this opportunity because I am finally able to do some hard rock geology! The main focus of my work with CH2M HILL concerns the investigation and remediation of groundwater contamination at NASA complexes in Alabama and California, which are pretty spectacular locations compared to my old Superfund sites in Chicago. My love of the Cyclones is already widely acknowledged in the office, and I believe my passion is giving the Alabama/Auburn fans a run for their money! Other than keeping up with the ‘Clones, I spend most of my time supervising our small, yet energetic 200 (Stewie, Bellatix, and Gimli).

Jim Crowther  
BS 1956; jimnhats@gmail.com

Jim Crowther reports that he is alive and kicking and living in Arizona! The two amigos have fallen on hard times. Dave Schacht (BS 1956) no longer visits in the winter or travels to Mammoth Lakes, CA, for golf. This requires that Jim plays golf throughout the “delightful” Arizona summer (which ends in November). He enjoys his great life with four married children and 14 grandkids, all living in Phoenix and Scottsdale.

Wen Deng  
PhD 2010; wendeng@mst.edu

I have just finished a postdoctoral project at the Jackson School at the University of Texas at Austin and ended my Geology journey. Now, I return to my Master’s major-Civil Engineering background and recently became an assistant professor in the Department of Civil, Architectural and Environmental Engineering at the Missouri University of Science and Technology (formerly University of Missouri-Rolla). My research direction will be in the subsurface two-phase flow related to energy recovery and environmental remediation, bio-mediated soil mechanics and geophysics, enhanced geothermal systems, and carbon sequestration. Fortunately, I don’t need to teach this semester, but I will teach Fundamentals of Geotechnical Engineering and Soil Mechanics in the coming spring semester. Hopefully, I will do a good role as an instructor! I will also try to recruit two PhD students for the spring semester.

Larry Fellows  
BS 1955; rockpix@comcast.net

I left Iowa State in 1956 just a short time after the department moved into the “new” geology building. All of us new geology grads were naive and excited as we prepared to take off on...
our careers and go our separate ways. In retrospect, Chalmer Roy gave some excellent guidance that prepared me very well for the journey, although it didn’t seem that exciting at the time. Many of us began as geologists with oil companies. My first job was with the Carter Oil Company for $500 per month. Getting a $41 per month increase before reporting to work was an added pleasure. Making that much money seemed unreal at the time. (That’s about what young people with no education or skills think they should be paid per WEEK now working at McDonalds!) The year 2014 was an incredibly long time in the future. But now here we are - descending toward our final destination after having made a number of intermediate stops along the way, and hoping the descent is slow and gradual.

There’s nothing much of significance to report on here. I still lead geology tours on occasion, mostly for non-geologists. If any Varve readers are planning to travel to the Tucson area or southeastern Arizona, I’d be happy to point them toward interesting geologic, historic, or other points of interest. I’d also welcome comments/words of wisdom from former classmates via email.

Ray Ethington
BS 1951, MS 1955; EthingtonR@missouri.edu

My wife, Leslie, and I continue to cherish the kindness of the faculty in our couple of days in Ames this past year at the time I was recognized by the Department and by Iowa State as a “Distinguished alumnus.” We thoroughly enjoyed talking with individual members of the faculty and revisiting some of the places on the campus where I began working toward what I became. I left confident that the department of Chalmer Roy, Keith Hussey, and Leo Thomas would still be directing young people in the same way although people, the methods, and the subject matter have been modified over six decades. Meanwhile, my collaborators and I continue to revise a manuscript dealing with conodonts from the Lehman, Watson Ranch, and Crystal Peak Formations which underlie the widespread Eureka Sandstone in the Utah/Nevada border region. Our original intent was to identify a horizon that could be used as a local boundary between the Sauk and Tipppecanoe sequences. Additional collections made this year to fine-tune our data caused us to widen the object of the project; we hope it is finished soon. Work continues on my collections of conodonts from the Midwest, Rocky Mountains, and Great Basin as time and commitment permit. In mid-September, Dave Clark, a colleague of 60 years, and I will rendezvous briefly near the foot of the Oquirrh Mountains in central Utah and revisit an unfinished project begun years ago. We hope to find Lower Ordovician conodonts about 30 miles west of the Wasatch Front where no Ordovician rocks have been found. This is not likely to make headlines anywhere unless two octogenarians are unable to survive another trip to the desert, in which case the chorus of “we told them not to go there again” will be deafening. And yes, 2014 has provided numerous opportunities to rain on the parade of people who asked for confirmation that they had found dinosaur bones or fossil eggs in Boone County, Missouri!

Sarah Feiner
BS 2011; Sfeiner1@binghamton.edu

I graduated this year with a Masters in geology from Binghamton University, NY. Upon graduating, I got a job with Rachel Lishansky (MS 2011) at Fluid Inclusions Technologies! I’ve only been here since the beginning of August but I really like Tulsa and my job is pretty awesome!

Tracy Frank
BS 1989; tfrank2@unl.edu

Tracy once again visited Wyoming over the summer as one of the field camp instructors. She is now the Chair of the Department of Earth and Atmospheric Sciences at the University of Nebraska.

Greg Guyer
MS 2001; gguyer@lgc.com

I have stopped traveling (thank goodness) as I moved into a position as an onsite consultant to Anadarko Petroleum Corporation in Denver. This role allows me to focus on supporting one client and assisting them in the adoption, training and mentoring of Halliburton/Landmark Graphics Geological and Geophysical interpretation software “DecisionSpace Geosciences.” I have been in this role for about a year and a half now. Earlier this spring, I was able to complete the research and classification of several decapod crustaceans (Astacidea, Stenochiridae) from the Gypsum Springs Formation (Jurassic) of Wyoming, USA.” It appeared in the Bulletin of the Mizunami Fossil Museum (volume 40, p. 1-11). I have been busy assisting the Boy Scouts as a Merit badge counselor and volunteering at Dinosaur Ridge in Morrison, Colorado. I am also an assistant editor for the Rocky Mountain Association of Geologists OUTCROP, monthly publication, which gives me a great opportunity to catch up on industry news and events taking place in and around the Rockies. My wife Kristi is still enjoying working for HP and loves the freedom of being able to work from home. I love spending time with my son Ben who has now taken up golf and is on his high school golf team, so we get out to a play a few rounds here and there. Ben started playing the bass guitar last summer and his instructors are from Ames and graduated from Iowa State as well. His ‘80s cover band got the awesome opportunity to play at Red Rocks
Amphitheater this summer. He also has some lacrosse buddies whose parents are Iowa Staters as well and have a food truck that they brought out to RAGBRAI this summer and served up some wonderful cheesesteaks and pizzas.

**Gary Hauser**

**BS 1961; annagary@heartofiowa.net**

Four years as a seismologist on oil exploration reflection crews in the US, Libya, Colombia, and off both shores of central America were followed by a year of teaching high school science. Then in 1966 my wife, Annamaria, and I joined our family's retail farm equipment dealership in Whitten, IA. I continued in that business until 2007 when I closed it and then worked for another seven years as a salesman for the firm that bought my inventory, retiring at the end of March, 2014. At age 74 there is way too much yet to do. We are traveling (again) but now for pleasure, visiting daughters' families in Kansas City and in Indio, CA (winters). We've attended a couple Field Camp reunions and enjoyed them very much – go if you can when there is the opportunity!

What is retirement like? A chance to improve piano and organ skills, do woodworking projects (not flying lawn geese), photography, work on my squash and golf games, learn some food science and be a better cook, and join Annamaria in community service that I haven't had sufficient time for until now. I recommend it!

**Martin Helmke**

**PhD 2003; MHelmke@wcupa.edu**

I am living in West Chester, Pennsylvania with my wife, Vicky, and our 5-year-old daughter Meghan. I am now the Chair of the Department of Geology and Astronomy at West Chester University of Pennsylvania, where I manage 15 faculty, 120 undergraduates, and 35 graduate students. I was elected to serve on the Board of the Pennsylvania Council of Professional Geologists this year as a licensed PG. Current research interests include groundwater and soil contamination, hydrodynamic heat transport through fractured media, and emergency risk management of natural disasters. On the side, I'm a member of the Chester County HazMat Team, the Trench Rescue Manager for a regional task force, and a Rescue Specialist for the Pennsylvania Co. 2 USAR team. I no longer fly radio-controlled aircraft, but I do pilot an instrumented robot into hazardous atmospheres.

My true passion, of course, is to embark on geoadventures with Vicky and Meghan. I thank ISU every day for giving me the opportunity to turn my love of geology into a successful career and a way of life.

**John Hooper**

**BS 1974, MS 1978; johnmhooper@gmail.com**

I formed PetroSEIS eight years ago as a consulting business handling clients rock physics, geophysical inversion and interpretation needs. I'm currently the President of the Geophysical Society of Oklahoma City chapter of the Society of Exploration Geophysicists. I find that being active in the professional societies is a great way to keep current on new technology and obtain the continuing education credits necessary to maintain my professional license.

My true passion, of course, is to embark on geoadventures with Vicky and Meghan. I thank ISU every day for giving me the opportunity to turn my love of geology into a successful career and a way of life.

**Gary D. Johnson**

**BS 1964, MS 1967, PhD 71; Gary.D.Johnson@dartmouth.edu**

Recently, after I retired from active university teaching, several of my graduate students asked if I would write down some personal thoughts and observations. I did that, but not exactly with a sense of looking at a career in retrospect.

After 42 years at a private college in New England, I suspect that I may now have the license to weigh in on some of the changes that I have observed over the years. These changes manifest themselves in many ways – some academic, some non-academic, but clearly part of a significant change in the big picture.

During these years, there has been no watershed moment, but as I recall, there have been a few significant transitions. When the students you teach are now younger than your own children – that is a major transition. When the students you teach increasingly have had little or no experience in life aside from the perpetual classroom – that is a major transition. When students you teach have never had the experience of earning a buck, reporting for work and working for someone or some company or organization – that is a major transition. And finally, when the students you teach have never experienced the joy of creating something with ones own hands, formulating a design and translating that into something that one can touch – that is a major transition.

Several years ago, I read a very
illuminating book by Matthew B. Crawford (Shop Class as Soulcraft – an inquiry into the value of work [2009, Penguin]) that addresses the loss of middle school and high school vocational courses that teach life skills to young students in a way that enables conceptual designs to be translated into creative projects requiring manual skills, the outcome of which is an object. Be it a bookshelf, a table, a piece of pottery, or a simple drawing, many secondary schools are now opting for enhancing computer skills and ‘college prep’ courses instead of the manual trades with the resultant phase out of shop classes. Crawford’s arguments are that both types of courses should be taught to all students. After all, there are life skills involved here. (The author, by the way, has a PhD, teaches college, and owns and operates his own motorcycle repair shop.)

Although in a somewhat different vein, an experience that I had this past Winter Term while teaching a first-year seminar to some sixteen students, brought many of the points that I raise above into startling clarity. The course, focusing on post-glacial New England, dealt with many diverse topics that consider how the New England landscape has evolved during the Holocene, as well as how human activities have subsequently impacted a myriad of issues during historic times. During one session dealing with tilling the land, and the establishment of European-style agriculture, I asked of the class, “How many of you have ever been on a farm?” Not one person raised their hand! Mind you, I asked how many have been on a farm, not worked on one! Not only was this a surprise and obviously a disappointing response, but it brought into focus what I have begun to see as a trend – many of our students are becoming less connected and less engaged to the ‘real’ world away from academics.

As I look back on my non-academic experiences, both short- and long-term, were developed amongst people who

... the loss of middle school and high school vocational courses that teach life skills to young students in a way that enables conceptual designs to be translated into creative projects requiring manual skills, the outcome of which is an object. Be it a bookshelf, a table, a piece of pottery, or a simple drawing, many secondary schools are now opting for enhancing computer skills and ‘college prep’ courses instead of the manual trades with the resultant phase out of shop classes. Crawford’s arguments are that both types of courses should be taught to all students. After all, there are life skills involved here. (The author, by the way, has a PhD, teaches college, and owns and operates his own motorcycle repair shop.)

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I and several other faculty that teach large introductory courses with field trips have upon occasion even seen students refusing to leave the side of the road in order to inspect a road cut only 20 feet away. The reason? Someone spotted a garter snake.

While many of these things may be expected, the general lack of diverse, non-academic life experiences in some of our undergraduates is increasingly obvious – and troublesome.

As a faculty member in an institution of higher education, the academic experience for many of us has been a decades long slog through a myriad of classroom experiences, both structured and unstructured, with opportunities for strictly guided and eventually independent research, with a final opportunity to show some degree of professional aptitude by submitting a research product before landing our first job. That job, all too often, remains within the confines of an educational institution. Yes, by that time, we professional “students” continue with that newly acquired educator’s mantra, while passing along an ivory tower approach to all things important.

As a child of the ’50s, and having begun my university education in 1960, I was fortunate to experience a quite different style of secondary education from what has evolved in recent years. Additionally, my academic profession has represented only one of many stops along the way. Although it represents the bulk of this career, it is by no means all I have done through the years.

Those unplanned and unpredictable career opportunities are an important aspect of who we are, with the diversity of those experiences being a very positive addition to one’s life in ways that are hard to define.

As I look back on my non-academic life, I find that many of these past experiences are some of the ones that I hold most dear. From them, friendships, both short- and long-term, were developed amongst people who had never thought of higher education as something that was possible for them. In some cases, even a high school diploma was something to wish for, not actually hold.

Although many of us could create a list of transformative events that have affected our personal lives, I think a brief personal segue into that world beyond the ivory towers might suffice.

Have you ever thought about those guys that spend those 100° summer days slopping hot tar on the flat roofs of large warehouses? I did that.

How about the air conditioning contractor who hires someone to haul batts of insulation while crawling through ductwork in a building under construction? Or the guy that drives those delivery trucks bringing building materials to a job site. Yes, been there as well.

Working on an assembly line can be interesting – and mindless – but the people you meet are genuine. One of my summer jobs involved operating a labeling machine that was part of the final assembly line in a paint manufacturing facility in southern California. Good pay for the time, but the hours were rough: 4pm to 1am!

Perhaps a bit more exciting, but much more dangerous was operating a sheet metal forming roller die that churned out those long metal slats that you see on the sides of livestock trailers. Again, good pay, with the job also allowing me to be trained as a welder – a possible career option, it seemed at the time.

For four years every March and April during my undergraduate years, I was employed in a small four-man operation whose sole purpose was to inseminate turkeys. We moved from farm to farm and inseminated thousands of turkeys over that one-month period. The fruits of our labors were enjoyed during Thanksgiving the following fall. And while this was going on every spring, I found employment as a waiter for those same four years as an undergraduate – food provided.

Then, during graduate school, there was the employment by two different oil companies in their Gulf
Coast, Rocky Mountain or Alaskan districts, and experiencing all the joys of sitting wells, collecting drill cuttings and writing reports under unrelenting deadlines. Time is money and mistakes can cost millions. It's breathtaking, and not because of the scenery!

Consultancies, both domestic and foreign, can be quite rewarding, with overseas consultancies being a particular challenge: time in the Saharan wastes of central Libya scouting for Miocene shoreline facies; an initial foray into the Ethiopian border regions of northern Kenya where little knowledge of the geological context of the region existed; as well as geological reconnaissance trips in India, Pakistan, Afghanistan, Iran and portions of eastern Europe. In several of those instances, long-term research projects resulted.

And recently, I have had the opportunity to participate in the production of a “Hollywood” film “Disappearances” starring Kris Kristofferson, Genevieve Bujold, Gary Farmer, Charlie McDermott, William Sanderson and Luis Guzman. My Deluxe A400 Phaeton was included in the movie. More information about the movie and my car is on the Geology alumni web page.

While none of these life experiences and research projects define who I am, my secondary school education as well as those all-important summer jobs during my pre-college years opened my eyes to the world. Similarly, those summer jobs during college, the additional jobs during the regular academic year, and my non-academic education while in graduate school continued to contribute to who I am.

While perhaps an unusual situation at the time, my graduate studies supervisor told me up front upon entering graduate school that he did not want to see me for three months every year. “Find a job that pays, not an internship with no pay. Work for your keep.” This advice served me well with many opportunities that followed, including subsequent job offers and consultancies. My advisor perhaps risked his research funding, but actually suffered nothing from this advice to the graduate student members of his research group.

Several of my own graduate students did similar things, including one who spent an entire year while in the employ of an oil company that subsequently funded what became the bulk of his PhD research.

While my comments may strike you as a bit of an extended ‘swan song,’ it is heartfelt. My concerns are real. The increased emphasis on academics for highly talented people is a bit troublesome. I think all need to take a step back and combine academics with a continuing exposure to the ‘real’ world.

Many of you who read this have long since been launched into the workforce. Some of you are still in the educational grind. Some of you have come from family settings in which the (non-academic) work ethic has already been strongly instilled.

Some advice: While still a student, try earning a dollar, learn what it means to report to work, work with your hands, and be responsible for some of your own finances. Nothing is too menial. Broaden your experiences. Many of us have come from backgrounds of relative privilege, myself included, but that doesn’t preclude a gentle nudge from our parents during our pre-college and college years to experience and learn from the world at large. And make sure that most of these experiences are funded from your own hard work and not from that of your parents!

**David Pals**

MS 2002; david.w.pals@gmail.com

At the end of 2013, I returned to the U.S. from Fiji after serving as senior project manager for Lion One (a Canadian mining company). I had been overseeing a project on the Tuvatu gold telluride deposit, where one of Paul Spry’s former students (Nancy Scherbarth, MS 2002) had worked for her Master’s degree. This year I got married and just recently I accepted a position as a geologist with the Bureau of Land Management Locatable Minerals Program. I will be based out of the Moab, Utah office, and will in part, be working on the Lisbon Valley copper deposit.

**Tim Ryan**

MS 1982; TIM_2007RYAN@comcast.net

I have lived in The Woodlands, Texas with my wife Diane since 1998. I have been working for a software company in Seattle, but I am currently looking to get back into oil and gas exploration in Houston. In September 2013, we made our annual western trip, where we visited National Parks of Utah (Arches, Canyonlands, Zion, Bryce Canyon and Capitol Reef). We were there during the 2013 floods in Colorado and unfortunately got caught in a flash flood in the canyon of Capitol Reef Park. It was a bit unnerving, but we made it to...
safety by driving through some pretty deep water. It was a “September to Remember.” We also went to the Denver Rock and Mineral Show.

Dylan Shoemaker  
BS 2010; dtshoemaker@gmail.com

I am currently living in Mabalane, Mozambique, where I teach 8th grade chemistry in Portuguese, a language I couldn’t speak two years ago. I also just coordinated and realized a Science and Technology Fair for my province (Gaza), and will subsequently be assisting in the National Fair. By the time you read this, I will have completed my Peace Corps service, after which time I hope to attain a teaching position in Earth science in the northwest U.S., or in south-east Asia in an American International School. Last year, I climbed Mt. Kilimanjaro (see photo), which with the exception of Yellowstone, was the first volcano I’d ever seen/been on!

David E. Simon  
MS 1968, PhD, 1972; desconsulting@sbcglobal.net

I have continued to be active in Rietveld refinement modeling of X-ray diffraction data for several clients throughout the year. A significant number of samples are geologic samples for the oil industry, especially shales. This year, I was an invited speaker at the 18th Norwegian X-ray Conference, 1-3 September 2014 at Grinstad, Norway. The topic was on Rietveld modeling of X-ray diffraction data through the use of “Phase Filters,” which are especially useful for analyzing numerous similar types of samples.

Beth Spear  
MS 2003; beth_spear@hotmail.com

This year I will be teaching my 11th year at Westosha Central High School, Salem, WI. I still teach Earth science and astronomy; however this will be my second year teaching chemistry rather than biology. I really enjoy teaching chemistry, but the Earth science and astronomy courses are still my passion. During our spring break, I treated my mom, nephew and nieces to a trip to Disney World. All the kids wanted to do was go back to the hotel and swim! We had princess time at the Cinderella Castle and my nephew trained as a Jedi (I was very jealous!). We also found out on the Star Tours ride my nephew is rebel spy! Thankfully, we all escaped the clutches of Lord Vader. During our summer break, I visited Costa Rica and Nicaragua with another teacher and some of our students on an EF Tour. For me the highlight of the tour was the three volcanoes we visited. Also our river raft guide Walter will not be forgotten anytime soon. Professionally, I was very proud to be awarded the 2014 Outstanding Earth Science Teacher in Wisconsin by the National Association of Geoscience Teachers. I’m sure the credit for that goes to the excellent education I received from Iowa State!

Jeff Steadman  
MS 2010; j.stead.85@hotmail.com

Jeff recently completed his PhD in economic geology at the Centre for Ore Deposits and Exploration Science (CODES), University of Tasmania, where he is now employed as a post-doctoral researcher using pyrite geochemistry as a vector toward volcanic-hosted massive sulfide and orogenic gold deposits. A highlight of his PhD thesis was the discovery of gold-rich diagenetic pyrite nodules in several carbonaceous shale units at the Golden Mile gold deposit in Kalgoorlie, Western Australia, which is one of the world’s three largest Archean gold deposits. These ancient pyrite nodules formed before the ore bodies, and have faithfully preserved their original texture and geochemistry in spite of the widespread hydrothermal alteration in the general area. Jeff and co-authors expect to have their research published in Economic Geology later this year or early next year.

Jeff continues to travel, camp, hike, and swim as much as possible. He is now also looking forward to the Australasian summer for 2014.

James A Sturm  
BS 1996, james.sturm@usma.edu

I am a Major in the army and am happy to report that I have started teaching at West Point in the Department of Geography and Environmental Engineering as a Geography Instructor. I am excited to teach four classes for the fall semester in Physical Geography. My wife, Audrey, and I moved to New York this summer from El Paso, TX with our son Henry (age 2), where Audrey will be studying at SUNY New Paltz in accounting.

We also want to announce that we are expecting a baby girl in January!

Mike Sweat  
BS 1980, MS 1985; sweatmj@gmail.com

I retired from the USGS on 31 July after 29½ years, and started a job with the Michigan Department of Environmental Quality in August. This all came about because of an early-retirement authority at USGS, which allowed me to take the DEQ position and not lose benefits with the Federal Government. This represents something of a career change, as I’m the chief of the Petroleum and Minerals Geology unit within the Office of Oil, Gas, and Minerals. I’ve gone from hydrogeologic research to regulation of extractive industries. My wife, Kat, and I are hopeful that we can make the field camp reunion next July as I’m already missing Wyoming.

However, the attraction of having both kids and our grandkids living nearby was too much to overcome, especially for Kat, so we’re most likely at a permanent address, finally.
David Uhlir  
PhD 1987; duhlir@gmail.com  
I am still at Cisco Systems, Inc. Within the past year, my role has expanded from product management to leading a software engineering group. My wife, Mary Kraus, continues as Associate Dean for the College of Natural Sciences at the University of Colorado at Boulder. Mary and I visited our younger daughter, Katherine in London during a May vacation. Katherine is an English major at Washington & Lee University. Our older daughter, Christina, graduated magna cum laude from the University of Colorado and now works for a software company in Boulder. Her senior thesis is “Synthesis of Well-Controlled Nanogels via Block Copolymer Self-Assembly: A Systematic Characterization of the Properties and Potential Applications.” The apples have fallen far from the sed/strat parental trees.

Lowell Wille  
MS 1984; lowellwille@msn.com  
It has been an eventful year for my family. In 2013, my employer, The Shaw Group, was acquired by Chicago Bridge & Iron, which resulted in me relocating to Baton Rouge, LA last July. I have been through several acquisitions and company relocations before, but it never seems to get easier. On the up side, this time it was just my wife, Janet, and me, so there was less stuff to move. The down side was we moved in the middle of summer. I had worked on a levee project in New Orleans a few years ago and did Hurricane Katrina reconstruction, so I knew what to expect. It’s still going to take some time to get used to the heat and humidity. My work involves project and construction management.

This fall our daughter started a MS degree at Yale to be a nurse practitioner. She was a surgical nurse at Johns Hopkins for several years and wanted to get some work experience before getting her Master’s degree. We are very proud of her. The problem is she keeps moving north and we move south. Janet and I hope this is our last move before we retire, when we plan on moving back to the Midwest to be closer to family.

Meaghan (McLoughlin) Zeiner  
BS 2002; mmzeiner@gmail.com  
Meaghan spent five years working as a “geomorphic processor” (aka heavy equipment operator for a local excavating company) before the birth of their daughter, Caitlin. After Caitlin’s arrival, Meaghan planted a garden far too big to be worked on by one person and immediately began losing the battle against weeds. Chris works for the McHenry County Conservation District as a restoration technician, and spends his days restoring and maintaining the native prairies, savannahs, and wetlands in McHenry County, IL. During their time in Illinois, they have accumulated a small herd of animals, including, but not limited to: two dogs, three cats, three horses, a miniature horse, and a small colony of barn mice! When not wrangling an exuberant five year old child, Meaghan can be found peddling her produce and wares at local art and farm markets, or canning and pickling anything that stops moving long enough to shove into a jar. In her free time, she is rumored to roam the formerly glaciated landscape of northern Illinois and southern Wisconsin on the back of her trusty steed, Pokey. To maintain her geologist street credibility, Meaghan makes an annual spring pilgrimage into the fields to harvest the stones heaved forth from the cold womb of the Frost Goddess! The Zeiner family spends a good deal of time outdoors, cycling and hiking as time and farm chores allow. Against all better judgment, Meaghan is currently training to compete in the 2014 Chicago Marathon. Last summer, the Zeiners spent time in Great Smoky Mountain National Park, and they look forward to returning to points west for the 2015 field camp reunion.
Five from Liberal Arts and Sciences win ISU’s highest faculty awards

Five professors from the College of Liberal Arts and Sciences now have new titles after being awarded Iowa State University’s highest faculty honors.

Steve Rodermel, genetics, development and cell biology, was named a Distinguished Professor in Liberal Arts and Sciences, and Gloria Jones-Johnson, sociology, was named a University Professor. In addition, Cinzia Cervato, geological and atmospheric sciences, Donald Simonson, music and theatre, and Robert Stephenson, statistics, were named Morrill Professors.

The Morrill Professorship, first awarded in 2013, recognizes faculty members whose professional work has demonstrated outstanding success in teaching and learning in undergraduate, graduate and/or Extension/outreach programs that is reflected by a national or international reputation in the nominee’s discipline.

Cinzia Cervato has won numerous ISU and LAS teaching awards and accolades including the 2014 Wilbur L. Layton Faculty Recognition Award from the Division of Student Affairs at ISU. A member of the ISU faculty since 2001, she has investigated better ways to educate students to become familiar with science and its role in society. She also has developed and implemented virtual reality and web-based learning activities with funding from the National Science Foundation. Cervato is ISU’s Faculty Fellow for Early Career Faculty Development for 2013-2015, and she is the former chair of the advisory board for ISU’s Center for Excellence in Learning and Teaching.

Cervato exemplifies the spirit of her Morrill Professorship through her active scholarship of learning and teaching in the geosciences, the bold use of active learning tools in large lecture courses, award-winning teaching and service to Iowa State. She created the Tall Grass Prairie Project, which uses sustainability as a vehicle for multidisciplinary teaching.

ISU trial jury reaches a verdict of …

The jury again said “guilty.”
For the second year in a row, a jury of Iowa State students returned a guilty verdict in a Dec. 5 reenactment of a landmark trial in Bill Simpkins’ hydrogeology course.

For 11 years Bill’s students have been reenacting a 1986 Massachusetts environmental trial that resulted in a 1995 book and a 1998 John Travolta film with the same name, “A Civil Action.” The trial was brought by Woburn, Mass., residents who charged that three companies had allowed chemicals to leak into the groundwater and contaminate their drinking water.

“Overall, I was again surprised by the verdict,” Simpkins said. “The teams this year were evenly matched and both did a good job of presenting evidence and casting doubt on each other’s testimony.”

Besides being an excellent, science-based learning exercise, students have fun by dressing for their parts. I’ve seen them as gussied-up lawyers and pocket protector-wearing scientific witnesses. The tally now after 11 years: plaintiffs 7, defendants 4. You can see a related article in the spring 2013 edition of LAS’ Link magazine. The “trial” was held in Morrill Hall, where I worked and many large bats lived two decades ago before the building was beautifully restored.

Description of the trial by Steve Jones, LAS Communications Director, on his blog site http://www.las.iastate.edu/isu-trial-jury-reaches-a-verdict-of/ January 18, 2014 from the College of Liberal Arts and Sciences Newsletter – January 18, 2014)
Finding alumni to feature has been one of my favorite parts of the whole VISIONS Across America project.

Case in point: Many months ago, I was searching the alumni database for unique stories to tell in Utah. When I found Kathie Taylor and Rob Andress (MS 1999), a couple in Salt Lake City, Jim and I got really excited. My research showed that Kathie was a wildlife biologist and ecological consultant and that Rob was a hydrogeologist. Wow – a double whammy in one of the most beautiful states in the country.

“Finding” them turned out to be a two-part process. Kathie quickly returned my email, and we scheduled a morning meeting (with breakfast!) at their home in late September. But the directions she sent to their home left us a little confused once we were actually in the car and trying to drive there.

“Take the 6200 South exit from I-215,” her directions began. “Follow the signs for Big Cottonwood Canyon. From the mouth of the canyon, we are 8.2 miles up and across a creek. We don’t have a ‘real’ address, so it’s a bit tricky to find. Call me and I’ll be at the road to meet you.”

It turns out that I had to call more than once, because Jim and I were never really sure we were going the right way or were even in the right canyon. But Kathie assured us that we couldn’t get lost, and she gave us a landmark to watch for: big green Dumpsters. We drove up and up and up. Happily, we found her.

She opened the gate that led us up a private road to a cabin, one of about 25 homes on the mountain. We were greeted by Rob, who had started a fire in the wood stove, and by a small, enthusiastic dog named Crawford. The cabin smelled fantastic – like wood and coffee and something delicious baking in the oven.

While breakfast was cooking, Rob and Kathie gave us a tour of the two-story cabin they’ve lived in since 2001. The bedroom is downstairs; kitchen, living room, and office space (above) is on the main floor. The cabin is small, cozy, and efficient.

Rob and Kathie are one of a handful of homeowners in their neighborhood that live there year-round. The rest are summer homes.

At 7,400 feet, winter comes early here, and the Wasatch Mountains get a lot of snowfall – three feet in three days once – but Kathie is unfazed. She grew up in northwest Ontario, Canada, the daughter of parents who ran a fishing camp.

“My dad gave me the genes to be on the path I’m on,” Kathie says.

She was “destined” to go to Iowa State, too. Her father, a Creston native, attended Iowa State, as did her sister and some cousins.

Kathie was an undergraduate when she met Rob, a grad student. Kathie was doing fieldwork on a forestry project and Rob was writing his thesis. They met through mutual friends. Following graduation in 1999 – Kathie with a bachelor’s degree in animal ecology and Rob with a master’s in geology and water resources – Rob began to apply for jobs in Utah.

Kathie wasn’t so sure about that. “I thought, ‘UTAH? They don’t even serve real beer in Utah!’”

She’s since become a convert. “Salt Lake City is a hub for lots of things around it. There’s lots of things to do, recreation-wise,” she says. “There are a lot of out-of-the-way places – probably 50 places for every national park and other areas you’ve heard of.”

The couple climb, hike, bike, camp, ski, river raft, and backpack. High-end ski resorts are located within a couple of miles of their cabin.

Rob owns his own hydrogeology firm, Gradient LLC. Kathie owns an ecological consultant company called Argenta Ecological. They share an office in the cabin, but for weeks and even months at a time they’re on the road, working for federal agencies (U.S. Fish
and Wildlife Service, Bureau of Reclamation, etc.) and with non-profits.

“We call ourselves ‘conservation gypsies,’” Kathie says.

Rob explains that they bid jobs separately but try to team up to do the work, often traveling to Nevada and Arizona. Much of the work has been in the area of habitat restoration for endangered desert fishes and invertebrates.

After breakfast and a brisk walk to the top of the mountain (see photo at top), Rob and Jim climbed into our rental car and Kathie and I followed in her truck. Our destination was the Provo River in the Heber Valley, south of Salt Lake City.

With Kathie in the driver’s seat and Crawford on my lap, we went up and over the mountains, past the ski resorts and through a landscape Kathie calls “an island in a sea of desert.”

We arrived at the Provo River and began to scout for photo-shoot locations. Kathie explained that she did one of her first jobs in this area – tagging Columbia spotted frogs. (“Such a great job! I used to come here every day and catch frogs,” she said.)

She had no qualms about wading waist-deep into a wetland adjacent to the river, fully dressed. Rob held Jim’s portrait light so it didn’t fall in the water, and I held on to the dog. We attracted a lot of attention. Afterwards, Jim photographed Rob watching birds, a slightly drier pursuit.

During my research phase I had learned that Kathie and Rob both do site assessment and design, and Rob does construction oversight, restoring springs and their outflow channels. Kathie also conducts wildlife surveys but has “morphed into a bit of a GIS Jack-of-all-trades.” (“I make a lot of maps and do spatial analysis for listed/sensitive species and for threatened landscapes,” she explained in an email.) They also do some writing, technical reports and management recommendations mostly, and at the time of our visit Kathie was in the final stages of writing a book about a place in Nevada called Ash Meadows that has a very high rate of endemic fish, plants, and insects. It’s also a place where Rob has done restoration work.

Spending the day with Kathie and Rob – seeing where they live and visiting one of the places they’ve actually worked – just reinforced the coolness of my job (meeting awesome people in awesome places) and the truly amazing variety of lives being led by Iowa State alumni. I mean, seriously, here we are in a pond in Utah. I could not have imagined this when we started this project.

So when we’re finished with the photo shoot and Kathie is covered up to her waist with pond “detritus” (and no spare clothes to change into), she suggests that we all go out for a late lunch at this Latin American restaurant nearby.

Really? “It’s OK,” she laughed. “They have a patio.”

We spent the next hour on a sun-warmed deck somewhere near Provo, Utah, eating our combined weight in salsa.

And wouldn’t you know it? The next day it snowed.
Departmental field trips and activities

Mowry Shale at Goose Egg Anticline. Western rattlesnake for scale

Geoff Gadd (MS student) occupying the booth at the Annual GSA meeting in Denver, Colorado

Franek Hasiuk playing with his relative gravimeter

MS Student John Hoyt enjoying his peanut butter sandwich in his field area north of Yuma, Arizona

Geology 315 (Mineralogy) field trip to collect geodes in the Mississippian Warsaw Formation, Hamilton, Illinois

Geology 507 participants on an outcrop of iron formation

Franek Hasiuk and Serg Ishutov (PhD student) at the Smithsonian Institute with a dino femur

Meteorology/Geology 112 Earth Wind and Fire Learning Community field trip march at Lake Cairo, Iowa

ISU students Janie Larson (center) and Zach Praim (right) and Rhode Island student Rob Hollis (left) enjoying Sunday at Shell Creek
MS student and field camp TA John Hoyt fishing for trout in Shell Creek.


Geology field camp breakfast at Colter Bay, Teton National Park.

Geology 507 field trip to the Quincy copper mine, Houghton, Michigan.

Geology 507 participants in front of the Quincy copper mine, Houghton, Michigan.

PhD students Andy Fornadel (now graduated) and Josh O’Brien standing in front of the largest piece of native copper extracted from Lake Superior.

Geology 507 participants on an outcrop of iron formation, Marinette, Michigan.
Awards & Publications

**GEOLOGY STUDENT AWARDS**
*(Presented at the 2014 Spring Banquet)*

**Kevin Connolly Field Camp Scholarship**
- Ian McBrearty
- Nell Bender
- Dana Korneisel
- Artur Pacyga

**Huedepohl Geology Field Camp Scholarship**
- Nathan Irmiter
- Zachary Praim

**Carolyn Jones-Eiler Summer Field Camp Scholarship**
- Kendall Gustafson
- Danial Shafris
- Garrett Westland

**Jon Peckenaugh Memorial Scholarship**
- Eric Tinnereim
- Katie Treiber
- Kris McDuffy
- Bryan Luce

**Beck Family Scholarship**
- Janie Larson

**Peter Johnson Memorial Scholarship**
- Caitlin Weber
- Dillon Nolan

**Rodney Gardner Scholarship**
- Erik Day
- Romina Vidal
- Ian McBrearty

**Outstanding Undergraduate Award**
- Ian McBrearty

**GRADUATE AWARDS**
*(Presented at the 2014 Spring Banquet)*

**Outstanding Teaching Assistant Award**
- Nick Hamden
- Natalie Thompson

**John Lemish Award**
- John Hoyt
- Andy Fornadel
- Ning Zhang

**Graduate Student Seminar Top Paper Awards**
- Andy Fornadel

**Runner-up Paper Award**
- Maddie Mette
- Josh O’Brien

**Pick-of-the-Year Award**
- Ning Zhang

**Outstanding Contributions Award**
- Maddie Mette
- Diana Thatcher

**OTHER UNDERGRADUATE AND GRADUATE STUDENT AWARDS**

**David Dziubanski**
Award for Outstanding Research/Creativity by Graduate Students (Research Excellence Award), ISU Graduate College, Fall 2013

**Sergey Ishutov**
3D Printing porosity models for petrophysical research. Geological Society of America Student Research Grant, $2,500

**Sergey Ishutov**
3D Printing porosity models for petrophysical research. AAPG Grants-in-Aid award in the name of Muruk Family, $3,000

**Sergey Ishutov**
3D Printing porosity models for petrophysical research. Society of Petrophysicists and Well Log Analysts Vicki King Memorial Scholarship, $3,000

**Sergey Ishutov**
3D Printing porosity models for petrophysical research. Society of Petrophysicists and Well Log Analysts Research Grant, $3,000

**Deserae Jennings**
American Federation of Mineralological Societies, $4,000

**Deserae Jennings**
Building a foraminifera farm to better understand Cenozoic glaciations. Geological Society of America Student Research Grant, $1,500

**Madelyn Mette**

**Madelyn Mette**
Investigating shell-growth response to marine hydrographic variability in coastal northern Norway. Geological Society of America Student Research Grant, $900

**Reba McCracken**
Origin of drumlins at Múlajökull, Iceland: Field measurements and model results. Geological Society of America Student Research Grant, $1,500

**Josh O’Brien**
American Federation of Mineralological Societies, $4,000

**Diana Thatcher**
Developing a decadal-scale stalagmite record of hydroclimate and atmospheric variability for western Iberia (Portugal) during the late Holocene. Geological Society of America Student Research Grant, $1,500

**Ning Zhang**
Runner-up, Best Poster Award at American Association of Petroleum Geologists Student Expo, Laramie, Wyoming, $600

Franek Hasiuk and Serg Ishutov at the Smithsonian Institute with the world’s largest 3D printed fossil (a whale from Chile)
GRADUATING STUDENTS
Fall 2013- Summer 2014
Undergraduate Students
Fall 2013
Chelsa Anderson
Luke Forsberg
Jeff Jennings
Jasmine Moertle
Steven Roth
Spring 2014
Eric Fagre
Melisa Fuerst
Nathaniel Gilbert
Robert Horn
Morgan Kemper
Firdaus Ridzuan
Florianne Rivera Hernandez
Jason Saar
Summer 2014
Christopher Beaver
Sarah Broer
Nathan Irmiter
Kristopher McDuffy
Bennett Pauley
Eric Tvinnevaim
Garrett Westland
Graduate Students
Spring 2014
Sarah Day (MS)
Alex Morrison (MS)
Summer 2014
Samantha Bristol (MS)
Andrew Fornadel (PhD)
CURRENT GRADUATE STUDENTS AND THEIR RESEARCH PROJECTS
Bowman, Angela
Investigating evapotranspiration dynamics and the hydrologic response of Midwest watersheds (Franz); PhD
Dziubanski, David
Data assimilation of satellite-based snow observations for improved modeling of Midwest watersheds (Franz); PhD
Frank, Kate
The geology of the Stollberg lead-zinc-silver ore field, Sweden (Spry); MS
Gadd, Geoff
Magnetic fabric signature of crevasse-fill ridges at Múlajökull, Iceland (Iverson); MS
Hamden, Nick
Simulations of strong ground motion from the March 2011 9.0 Tohoku, Japan earthquake using FINSIM (Beresnev); MS
Hoyt, John
Tectonic significance of low-angle normal faults in the Picacho area of southeasternmost California (Jacobson, Harding); MS
Ishtov, Sergey
Combining CT and 3D printing to reproduce porous reservoir rocks (Hasiuk); PhD
Jennings, Deserae
Building a foramanifera farm to better understand Cenozoic glaciations (Hasiuk); MS
McCracken, Reba
Origin of drumlins at Múlajökull, Iceland: Field measurements and model results (Iverson); PhD
McFadden, Scott
The genetic relationship of nodular sillimanite rocks to metamorphosed Cu-Zn deposits, Colorado (Spry); MS
Mette, Madelyn
Investigating ocean-atmosphere interactions and climate variability in the North Atlantic: Insights from Arctica islandica shell growth and geochemistry proxy records from coastal northern Norway (Wanamaker); PhD
Nesterovich, Anna
A diatom based sea-ice proxy for the Bering Sea (Caissie); PhD
O’Brien, Josh
Trace and major element studies of oxides and silicates as guides in the exploration for metamorphosed ore deposits (Spry); PhD
Rizuan, Firdaus
The Iowa Pore Index test as a means to grade aggregates for road construction (Hasiuk); MS
Smokovitz, Jake
Estimation of groundwater and nutrient fluxes to Deer and Pokegama Lakes, Itasca County, Minnesota for a lake diagnostic and feasibility Study (Simpkins); MS
Thatcher, Diana
Developing a decadal-scale stalagmite record of hydroclimate and atmospheric variability for western Iberia (Portugal) during the late Holocene (Wanamaker); MS
Thompson, Natalie
Chukchi Sea ice processes since the Last Glacial Maximum based on diatoms, sedimentology, and seismic data (Caissie); PhD
Vaughn, Derrick
Proxy-model comparisons of productivity and sea ice extent in the Chukchi Sea during the Last Glacial Maximum and deglaciation (Caissie); MS
Witt, Alyssa
Estimation of groundwater recharge in aquitards overlying sand and gravel aquifers at two sites in Minnesota (Simpkins); MS
Young, Nathan
Application of watershed hydrologic models to assess the health and future nutrient load of the Iowa Great Lakes (Simpkins); PhD
Zhang, Ning
Investigation of fracture systems in the Mowry Shale, Bighorn Basin, Wyoming: Implications for unconventional energy resources (Jacobson); MS

Reba McCracken, collecting a till sample in the forefield of the Icelandic glacier, Múlajökull, for consolidation testing
FACULTY AND STUDENT PUBLICATIONS, 2013

High-intermediate sulfidation epithermal Pb-Zn-Cu-Au-Te mineralization at western Milos Island, Greece: Mineralogical and geological constraints on ore formation in a shallow submarine setting. Ore Geology Reviews, 53, p. 159-180

Variations in the Cordilleran magmatic arc: trace element geochemical evidence from zircons. Geology, 41, p. 223-226

Beresnev, I., 2013.
Reflections on frequency dependence in earthquake-source inversions. Natural Hazards 66, 1287-1291

Quadratite, AgCdAsS3: Chemical composition, crystal structure and OD character. American Mineralogist, 98, p. 242-247

Structural role of tellurium in the minerals of the pearceite-polybasite group. Mineralogical Magazine, 77, p. 419-428

Possibility space for GIS suitability analysis. Proceedings of IS&GT/SPIE Electronic Imaging, International Society for Optics and Photonics, 9017. 8 pp.

Butler, P. G., A.D. Wanamaker, Jr., J.D. Scourse, C.A. Richardson, and D.R. Reynolds, 2013
Variability of marine climate on the North Icelandic Shelf in a 1357-year proxy archive based on growth increments in the bivalve Arctica islandica. Palaeogeography, Palaeoclimatology, Palaeoecology, 373, 141-151

Turning the tables on pre-service teachers who don’t like science: a reflective writing assignment. In the Trenches, April issue, 7-9

The Big Crunch: a hybrid solution to Earth and Space science instruction for elementary education majors. Journal of Geoscience Education 61, 173-186

Reconstructions of surface ocean conditions from the northeastern Atlantic and Nordic seas during the last millennium. The Holocene, 23(7), 921-935. **cited in IPCC, 2013**

A stalagmite record of Holocene Indonesian-Australian summer monsoon variability from the Australian tropics. Quaternary Science Reviews, 78, 155-168

The influence of temperature and seawater carbonate saturation state on 13C-18O bond ordering in bivalve mollusks. Biogeosciences, 10, 4591-4606


Speciation of aqueous tellurium (IV) in hydrothermal solutions and vapors and the role of oxidized tellurium species in gold metallogenesis. Geochimica et Cosmochimica Acta, 120, p. 298-325


Marquardt, K.E., M.L. Rankin, and W.W. Simpkins, 2013. Town meets gown: Creating a collaborative process for expanding a university’s recycling program while supporting a city’s waste diversion efforts. Sustainability: The Journal of Record, 6(9), 104-114.


NEW FACULTY RESEARCH GRANTS IN 2013

Cervato, C., Collaborative Research: Google Earth for Onsite and Distance Education (GEODE), NSF-TUES Tier III proposal, 2013-2017, $30,000.

Cervato, C., 1-AMASE – An Initiative for Science Education. ISU LAS SRI project, 2013-2016, $86,530.

Cervato, C., REAP Summer Internship Program, 2013, $2,600.

Franz, C. (PI), W. Simpkins (co-PI), O. Acar (co-PI), Impacts of Extended Drought Conditions and Global Warming on Groundwater Resources in Iowa and the Upper Midwest, Center for Global and Regional Environmental Research (CGRER), University of Iowa, 2013-2014, $29,548.

Franz, C. and eight others, Integrating Project Knowledge, Land Use Scenarios, and InVEST Modeling: the Next Step in Developing a Payment for Ecosystem Services scheme for the Big Creek watershed, Leopold Center for Sustainable Agriculture, 2013-2016, $121,366.

Gutowski, W. (PI), C. Franz, (co-PI), W. Simpkins (co-PI), A. Wanamaker (co-PI), and three others, Water and Climate Change (WACC): Building a Community Consensus for a Sustainable Future for Iowa and the World, College of Liberal Arts and Sciences, 2013-2016, $299,553.


Hasiuk, F., Acquisition of Magnetic Susceptibility Meter and Gamma Ray Detector for an Undergraduate Sedimentary Geology Course. LASCAC, Iowa State, 2013, $15,685.
Faculty & Staff Notes

Igor Beresnev, Professor

I taught my regularly scheduled classes last year. In the fall, it was
the lecture part of Geol 201 Geology for Engineers and Environmental
Scientists, a large introductory
course of approximately 200
students. In the spring, I offered Geol
457/557 Exploration Seismology,
and Mteor 432 Instrumentation
and Measurements. Exploration
Seismology introduces the students
to the main physical concepts and
ideas of modern seismic exploration,
for both shallow engineering/
environmental applications and
depth prospecting for oil and gas.
Instrumentation and Measurements
is taken by the meteorology seniors.
Primarily due to the efforts of David
Flory, who teaches the lab portion
of this class, it was significantly
enhanced by the recent acquisition
of several modern weather stations,
which have become integrated into
the body of the course and provide very
useful hands-on experience.

On the research front, I have largely
completed a series of investigations
conducted as an excursion into the
area of elastic-wave propagation in
porous media saturated with one or
two fluids, which kept me busy for
the last three years and also was the
main subject of my sabbatical in spring
2013. The article “Compressional-
wave propagation in porous media
saturated with two fluids” came out
in the January/February 2014 issue
of Geophysics. This paper contained
two main contributions. First, it showed
that an experimentally compliant
theoretical model for the wave-
propagation speed can be constructed
without resorting to the difficult-
to-measure “bulk” (that is, “dry”)
parameters of the saturated rock but
solely through the velocities in the
constituent grain and fluid phases. In
principle, this allows a much easier
prediction of the seismic velocities at
different levels of saturation, say, by oil
and water. Second, calculations led to
the conclusion that an account for the
surface tension between the two fluid
phases (e.g., oil/gas and water) has no
effect on the wave velocity. A practical
consequence of this fact is that the
presence of oil cannot be detected
from the velocity measurements
simply based on the existence of a
fluid-fluid interface, if the velocities in
the pure fluid phases are similar.

Another study from the same realm
of rock physics is currently in review
in Water Resources Research. It
revisits the meaning of “tortuosity,” a
controversial parameter that in rock
physics is vaguely used to characterize
the complexity of the porous space.
It is also a crucial defining parameter
in the classic Biot theory of elastic-
wave propagation in saturated porous
media. The point of that study is that
tortuosity is inherently unmeasurable,
and, hence, the Biot theory is
fundamentally incomplete. I should
say that there is much resistance in
the rock-physics community to the
acceptance of the latter idea.

Some of you may remember from
my previous Varve writings over
the years that a significant line of
my investigations, since the early
2000s, has been the use of acoustic
stimulation for the enhanced oil
recovery. After some key theoretical
and laboratory findings were
published, my collaborator Dennis
Vigil (Department Chemical-
Engineering) and I have been trying
to secure funding (through NSF,
primarily) for a “capstone” experiment
in which we could test the idea of the
controlled and predictable stimulation
on a real sample of a porous rock.
We have not been successful so far
in this quest for funding but remain
optimistic and hopeful that the final
brick in the foundation of a possible
technology can still be laid.

In the meantime, I have initiated re-
orienting the mainstream of my research
in a different direction, the physics of an
earthquake source, in which I was more
active in the 1990s but not in the past
decade. This field is fascinating, thought
provoking, and fraught with potential
practically important discoveries,
providing the source of inspiration and
motivation for the switch.
My both children (both ISU
graduates) now live in the Seattle
area. My son has a BS degree in
Michael Burkart, Affiliate Professor (retired)

I have successfully resisted permanent retirement for another year. Part of the appeal of partial retirement is the office space the Department provides me. However, this may change now that the roof leaks have been fixed making the office more desirable for one of the new faculty. I hope to justify the new Chair’s generosity by continuing my research and outreach on the topic of nutrients in Iowa’s ground and surface waters. I am working with staff at the Des Moines Waterworks, the Iowa Soybean Association and other non-profit groups to understand how to limit the loss of nutrients from intensively managed agricultural landscapes. Each year it seems Iowa streams provide novel information about the magnitude and timing of nitrate discharged from our highly engineered landscapes. This year we found that late summer precipitation on Des Moines Lobe soils can mobilize excess nitrate even during periods of nitrogen demand by corn and soybean crops. We are trying to understand if this is a response to increased subsurface drainage infrastructure or changes in crop management.

I am excited and flattered to be included as part of this department, albeit peripherally, as it attracts new bright faculty and students who work in challenging and exciting disciplines. My association with GEAT provides Judy and me with social and intellectual contacts that continue to keep us young. Our travels this last year included participation in the Turkish wedding of a former graduate student at Akdeniz University that I mentored during my work with two colleagues in Antalya. We also visited some young friends in Denmark and made frequent trips to Pensacola, West Palm Beach, Vail, and even one to Kohala to check on relatives. This next year we will host some long-time friends from the Netherlands for a few weeks in the Rockies. I expect to help everyone sleep by explaining the surrounding geology.

Beth Caissie, Assistant Professor

The Marine Sediments Lab at ISU is hopping! With three graduate students and several undergrads all doing their own work, plus my ongoing research, we’ve had to order a new microscope to be able to keep up with the demand. My lab group has been measuring grain size, counting diatoms, and analyzing nitrogen and carbon isotopes from several intervals when climate warmed in the Bering Sea. Master’s student, Derrick Vaughn has focused on Marine Isotope Stage 5, 125 thousand years ago, while PhD student, Natalie Thompson has been working on Marine Isotope Stage 11, 400 thousand years ago. A terrific undergraduate, Dana Korneisel, has worked in my lab for the past two years. She has mastered the identification of several dozen diatoms – no small feat! And she is now counting diatoms in cores that record what happened at the end of the last glaciation.

We’ve also continued our work trying to find a signature for sea ice in marine sediments. PhD student, Anna Nesterovich has been tirelessly counting our Bering and Chukchi seas database and has also started to work on samples of sea ice (melted and filtered at sea). She has been looking for diatoms with an affinity for different types of sea ice and has also worked hard to iron out our taxonomic questions. Recent graduate, Sarah Broer also played a role in taxonomically problematic diatoms last year. Her SEM images of one sea-ice-related diatom led to a short response to an article published in Micropaleontology.

My own writing has focused on Marine Isotope Stage 11, both a manuscript that I’m working on with colleagues at Williams College and UMass Amherst, and a proposal that will be resubmitted to NSF in a few weeks. I have also continued my international collaborations with the Past Global Changes (PAGES) Sea Ice Proxies group, which met on the German coast of the North Sea this summer. I was amazed to be the only American in the room and have really enjoyed working on a compilation paper of sea ice extent over the Holocene with this group.

This fall, I am teaching Marine Micropaleontology for the first time, though I plan to offer it every other fall. The course attracted Geology and Ecology, Evolution and Organismal Biology students. In the spring, I will teach the large Environmental Geology class and to co-teach Historical Geology with Franek Hasiuk.

This December, Derek and I will be presenting at the American Geophysical Union’s Fall Meeting. I’ll be talking about a comparison between our diatom-based sea ice proxy and a molecular biomarker proxy.

Settling into the Midwest included for me this summer a trip to South Dakota and my first look at the Badlands and Black Hills. I hope to explore Iowa’s Lakes Region sometime soon, possibly to check out the Iowa Lakeside Lab. They like diatoms, too! My wife continues to report on agriculture for Iowa Public Radio and our son, Elias, is now in 4th grade and loves playing soccer with the Ames Soccer Club (and hanging out with Al’s kids).

Cinzia Cervato, Morrill Professor

My thirteenth year at ISU was without a doubt the most eventful. The fall semester was very busy with one section of Geology 100, co-teaching Geology/Astronomy 106 for elementary education majors and
overseeing the lab sections, in addition to working with Dave Flory on our orientation course and Earth Wind & Fire learning community. My new duties at the Office of the Provost had a steep learning curve, since I never held an administrative appointment before. I enjoy my position of Faculty Fellow for Early Career Faculty Development tremendously. The staff and the Provost are very supportive of my work, and I have started several new projects to help new faculty be successful at ISU as well as providing and assessing professional development for tenure-track and non-tenure-eligible faculty alike. I met more people at ISU since last summer than I had in the preceding 12 years.

As I was walking to my office early in the morning of Friday 20 December, I was feeling very fortunate to have a job I love and a wonderful family, and was looking forward to our vacation in the Yucatan. I had a long list of tasks to work on: submit final grades, work on three proposals, make revisions to two manuscripts, call some colleagues, attend two meetings. Instead, I had a massive brain-stem hemorrhagic stroke in the parking lot by Science II, and spent the next six weeks at the hospital, fighting for my life. The solidarity network that was set in motion after this happened was unexpected and incredibly heartwarming. The support that the department, the ISU community, and our church provided my family and me during the first difficult months was tremendous, and we couldn’t have made it without them. In early March, after I regained the use of my left eye, I returned to work part-time, and since May I work full time from my office in Morrill Hall. The stroke has left me with several significant disabilities, but I returned to my classes at the beginning of the fall semester. I thought about it long and hard, and decided that I wouldn’t know if I did not try it. So far, so good! I am not going to be defeated by the stroke, even if my changed life is hard to accept. After this unexpected event, Francesca and Ian matured very quickly and are my invaluable helpers around the house. Paul has taken over the care of the house and of the kids with his usual humor and good nature, and given up traveling for work without the slightest complaint.

This unusual year has also unexpectedly brought me some good news: President Leath promoted me to Morrill Professor for my work with students, teaching, and scholarship; I received the 2014 Wilbur L. Layton Faculty Recognition Award from the Division of Student Affairs; and the 2014 Exemplary Reviewer Award from the National Association of Geoscience Teachers.

We spent most of the summer in Ames, but couldn’t resist trying to travel in spite of the challenges. We all flew to Seattle and boarded a cruise ship to Alaska in early July. In early August we drove to Montana via Yellowstone, and I attended a workshop on undergraduate research. Both trips were very pleasant and successful. Francesca just started her junior year at Ames High, drives her own car, and is thinking about college. She sings in the choir, is in two student clubs, and is taking several AP classes. Ian is now a third grader, still loving math and reading, making friends, playing soccer and chess, improving his swimming style, and playing the piano to make his mother happy.

I don’t know what the next year will be like. I have learned to be patient, to appreciate progress even when it is minuscule, and that only by being persistent, and not giving up in the face of what might seem like insurmountable challenges, I can hope to return to a life that will
allow me to travel and enjoy again life as I knew it. If you want to follow my progress, I have a blog on Caring Bridge. The encouragement of friends and colleagues from all over the world gives me an extra boost to carry on. It will be nice to hear from you.

Jane (Pedrick) Dawson, Senior Lecturer

Hello again! I am pleased to report that we had a great class of engaged, well-behaved students at field camp this year, which made it a very enjoyable experience. This was the last class to live in the old barracks and use porta-potties – truly the end of an era! No bears this year, and I for one did not miss them!

I have settled in to teaching Geol 101 (Environmental Geology) and Geol 315 (Mineralogy) in the fall semester. I had 360 students in Geol 101 last fall semester, but at this writing, it appears that the enrollment in this class will be down this fall. We are seeing decreased enrollments in some of our 100-level large intro service classes, and we suspect some of this may be due to students choosing to take online courses rather than face-to-face courses. The enrollment in mineralogy continues to be strong, bolstered by our growing numbers of undergraduate majors, as well as engineering students who take it as a technical elective. I enjoy teaching mineralogy very much and look forward to it every year.

Last spring, I taught the igneous petrology portion of Geol 365 (Igneous and Metamorphic Petrology) for the second time. I love teaching this class, but am still grappling with how to fit in all the important stuff in only 14 lectures! I also taught my usual two sections of Geol 100, and was ably assisted by TA’s Geoff Gadd and Ning Zhang.

Bob and I had an unexpected opportunity fall into our laps this spring, and we took it. Our neighbors in Nevada moved to Ames and we bought their acreage. We are keeping our current property, so the two properties combined total 3.4 acres. We are in the midst of some major remodeling projects on the “new” house (a 1 ½ story 1921 farm house), and it will be several months before we can think about moving in. Finally having a garage and a sewing room will be wonderful! We have been working hard to clear brush, weeds, trees, etc., and it will take us years to get gardens established and the yard in a state that I can tolerate, but hopefully it will be worth it! Our first piece of furniture we bought for the new house? No, not a sofa or a table, but a lighted curio cabinet to display Bob’s trilobite collection. Glad we’ve got our priorities straight!

We hope to see many of you at the alumni reunion at field camp next summer. It is always a great time! Come check out the fabulous new facilities and meet the new field camp director!

Kristie Franz, Associate Professor

Hello alumni! My group has experienced progress and change over the past year, but many things remain the same. Angela Bowman and David Dziubanski continue to pursue their graduate degrees in Geology. Angela has completed a couple manuscripts on her work examining satellite data applications in hydrologic prediction models. Through Angela’s work and work that Ryan Spies completed last summer, we are finding some interesting limitations and possibilities for the data and the models that are currently used operationally. David completed his MS in geology last winter. In his work, we found that satellite-based snow water equivalent observations have potential for modeling spring runoff in the Midwest. Because of the topography and forest cover, these data are generally regarded as problematic in the West where snow is vital for water supply prediction. For better or worse, we don’t have that problem in Iowa. These projects are leading to some exciting conclusions and I see this area of study continuing to be a major part of my research in the coming years.

Over the past year, my on-campus collaborations have grown through some fun new projects. Bill Simpkins and I, along with our post-doc Ozlem Acar, are assessing groundwater changes that may occur in Iowa under future extreme dry and wet scenarios. Bill Gutowski, Bill Simpkins, Al Wanamaker, and I, and other ISU faculty from Engineering, English and Economics, are building a model of the Squaw Creek watershed that will simulate not only the natural processes, but human processes as well. The idea is to understand how people influence the watershed and how the watershed influences people. David has stayed on to complete a PhD on this project. Finally, Bill Gallus and I just started a project combining advanced precipitation forecasting with advanced hydrologic modeling to improve precipitation and flood prediction. We are co-advising a PhD new student, Brad Carlberg, on this project.

For those of you keeping up on my personal updates – Elia is 3.25 years old and Max is 22 months now. They are doing great. Even at such a tender young age, they are becoming expert conspirators and are continually finding new ways to give me and my husband a hard time. Also, if you recall, a little over a year ago the well at our house went dry due to the 2012-2013 drought. We had to decide whether to put in a new one or try to wait it out. Conjuring up all my hydro-intuition, I ultimately determined that we should put it in (actually my husband said we should). Turns out, the new well was the right decision. A year’s worth of data show that the groundwater didn’t recharge significantly until this past July, after we had a bunch of heavy rains. We would have been rationing for a long time had we not put in the new well. Because of the rain, however, our water was cloudy for a couple months. With the raised water table, we were likely getting water through new parts of the aquifer that hadn’t been pumped before, and, therefore, the sediment in them was being mobilized. This is interesting from a hydrologic perspective, but not so from a homeowner’s perspective. Stay tuned next year for more hydro-stories. Hopefully they will be about something other than my house.
DeAnn Frisk, Administrative Specialist

Greetings! It’s been another busy year – some things just never change. I can’t believe we are preparing to send out another issue of the ‘Varve.

Of course, the university continues the trend of implementing new/updated software that requires extensive training. I should assume this is a normal event and never be surprised with all the required training sessions. This year the Human Resources department updated the software to use in the ISU hiring process. After three two-hour sessions, I still don’t feel competent to use it but I am starting to use the system! We will have three searches going on this year so all aspects of that will make sure that I have plenty to do.

Health-wise, Steve has had a much better year. He is still working full-time and trying to figure out the best time to retire. Currently, he is thinking next spring might work out the best. Of course, until he actually gives his notice I won’t know for sure! As I’ve said before, I have no plans to retire.

Last year we took a short vacation to Las Vegas over Thanksgiving break. We hadn’t been there for a while and enjoyed our time there. We also have been camping over long weekends and during our week off this summer. We’ve stayed mostly in Iowa and have traveled to several parks that were new to us. We enjoy the break from our busy schedules. Stop by and say “Hi” when you are in Ames and on campus!

Franek Hasiuk, Assistant Professor

The last year was a busy one for my research program. Down on the Foram Farm, MS student Deserae Jennings and I welcomed foraminifera from around the world (for example: Qatar, Dominican Republic, Scotland) into several small tanks in the basement of Science I. Deserae will be taking these specimens as well as others and growing them in differing water temperatures and chemistries to see how it affects their shell chemistry. We have brought forams back to Iowa because foram shell chemistry is the most commonly analyzed archive of deep-time paleoclimate, yet remarkably few culturing studies have been done that assess how seawater temperature affects their shell chemistry.

In the Geological Fabrication Laboratory (GeoFabLab, for short), I have been working with Chris Harding, PhD student Sergey Ishutov, and undergraduates (Artur Pacyga, Anh Tran) to apply 3D printing to problems in geoscience teaching and research. On the research side, we have been CT scanning porous reservoir-type sedimentary rocks and attempting to 3D print them. Because the pores are so small, we have had to magnify the models we print. Currently, we have gotten down to about 5x magnification but we are pushing smaller every day. A chance encounter at AAPG landed me and Serg an invitation to present at NSF on “3D Printing in the Geosciences” over the summer. Serg completed an internship with ExxonMobil Upstream Research this summer in Houston. On the education front, we have been busy making the models any geoscience educator would need to teach their class: touchable topography, flexible fossils, many mineral models, permeable porosity, etc. The goal is to make these models freely available through the Internet to reduce the cost of geoscience education worldwide.

This fall, I welcomed a new MS student to my group, Firdaus Ridzuan, who will be studying the Iowa Pore Index test, which is part of how the Iowa DOT grades aggregates for road construction. The test gives an idea of the macropore-to-micropore ratio in the rock, which is indicative of susceptibility to freeze-thaw-damage. This very Iowa-relevant problem complements the petroleum-related pore systems research that is exemplified by Serg’s work.

I have mentored a group of students who started an ISU Student Chapter of the American Association of Petroleum Geologists. These same students ventured to AAPG Student Expos in Houston, Tulsa and Laramie, Wyoming.

In fall 2013, I taught Sedimentary Geology (Geol 368) for the first time. We had time to spend a Saturday at Ledges State Park as well another Saturday doing core- and log-based exercises. In spring 2014, I launched Petroleum Geology (Geol 444/544), a course not seen in the department for some time. The 21 students covered the basics of petroleum geology as well as some history of the business. In lab, they used industry-standard software to work through petroleum geology mini-projects.

My wife, Britta, continues to compete in triathlons as well as lifeguard for Ames Parks & Recreation. Lena started 1st grade this year and Lucas is in preschool. We have all truly appreciated the high-quality Ames Public Schools! Biscuit celebrated dog years 84-91 according...
to Lena. At meal time, he is still as energetic as a puppy.

Neal Iverson, Professor

This year involved a major transition for me. I stepped down as chair of the department on June 30 and began a one-year faculty professional development assignment (i.e., sabbatical leave). Although the chair job was satisfying in many ways, I confess that I feel a bit like a fish that has climbed out of the frying pan, reattached its head, gills, and fins, and is buoyantly swimming again in the sea. Goals for the leave include submitting some manuscripts backlogged during my chairmanship, writing some NSF proposals, and making some progress on a theory of drumlin formation. The leave will include a three-month, core-research Fulbright during spring semester at the Norwegian University of Science and Technology in Trondheim, where I hope to both work hard and with Kathy cross-country ski hard.

This summer in late July and August I again supervised a research team during a three-week field stint in the central highlands of Iceland, where we are studying subglacially developed landforms recently exposed by the retreating surge-type glacier, Múlajökull. My graduate advisees, Reba McCracken and Geoff Gadd, conducted research there on the formation of drumlins and crevasse-fill ridges, respectively, and both finished the field season with ample data to process and interpret. They were assisted in this work by ISU geology major, Ian McBrearty, and three undergraduates from the University of Wisconsin-Milwaukee, where my former advisee, Tom Hooyer (PhD, 1999), is coPI of the NSF grant that funds the project. His graduate advisee, Libby Woodford, joined us to study fluted moraine in the glacier forefield. ISU post-doc, Luke Zoet, helped supervise the work on drumlins and consistently won at cards during rainy days. Our team was joined by three Scandinavian colleagues who provided logistical support and expertise on the local till stratigraphy. It was a great field experience, although my tolerances for digging in hard till, being wet, and sleeping on the ground are waning as my age waxes.

Luke Zoet continued to spearhead our experimental work on glacier sliding using the ISU Sliding Simulator, which operates in the walk-in freezer of my lab. Our data demonstrate for the first time so-called rate-weakening behavior during glacier slip: the tendency for glacier beds to become slipperier the faster a glacier slides, resulting in a feedback that can promote unusually rapid glacier flow. One of the grant proposals that I will write this fall will be aimed at extending our current NSF support for this project. Luke deserves hearty congratulations for being offered a tenure-track faculty position in geomorphology at the University of Wisconsin-Madison, where he will begin in the fall of 2015.

Carl Jacobson, Professor

There are two big issues in my life right now. First, on July 29, I was helping a number of faculty, staff, and students do some moving in the department, when all of a sudden I fainted and fell to the floor. Bill Simpkins and Franek Hasiuk rushed me to Mary Greeley Medical Center. After some initial tests at Mary Greeley I was transferred to the University of Iowa Hospital, where I spent 10 days. It turned out that two of the arteries that deliver blood to my brain, the left and right internal carotids, were 90% clogged. The blockages are not due to conventional plaque/hardening of the arteries. Rather, I have what are called “dissections,” places where the inner lining of the arteries has torn away from the outer layers forming pockets and baffles that restrict the flow of blood. Carotid dissections can be treated with stents, but the neurologists who were caring for me advised against that; in their view letting the damaged areas heal on their own is safer and just as effective. Full recovery generally takes about a year, but there’s a 3-6 month period during which I will need to take it easy in order to avoid a relapse. This means no physical activity more strenuous than walking, no lifting of objects heavier than five pounds, no travel, etc. As many of you can guess, this is not easy for me. Particularly disappointing is that I was supposed to spend five weeks this fall at Stanford University working with my collaborator Marty Grove. That’s out for now, as is my normal winter field season in the Southwest. Still, I’m very fortunate that my wakeup call was just a fainting event rather than something much worse.

The second important piece of news is that I will retire at the end of this academic year. I’ll be 61 at the time, so my departure will be a tad early, but not by much. Carol will continue to work for a few more years. Her job commonly takes her to the East, and with our sons in New York City and Washington, DC, respectively, we’ll be moving to that part of the world. It will be exciting to begin this new phase of our lives, although we’re torn about leaving Ames, which has been a great place to live. It will also be tough to leave the department, which has been my home for 35 years. It’s doubly disappointing because I will be exiting at a time when the department is getting strong support from the College and has good opportunity for growth. In any case, it’s been great to get to know so many of you and I hope to stay in touch through e-mail, GSA meetings, and/or alumni reunions.

I also regret that I will be departing just as the field camp renovation is coming to completion. This is going to be an amazing facility and I’d like to once again thank Tom and Evonne Smith and all the other alumni who made it possible. Hopefully I can continue to participate in camp even when I’m no longer an active faculty member.

After retiring I plan to continue my research in California and Arizona. There’s lots of data left to analyze and manuscripts to write. I’m also looking forward to getting back to good health so that I can return to the field.

Best wishes for the coming year and I look forward to writing to you next year as an emeritus professor.
Mark Mathison, Teaching Laboratory Coordinator

Field camp had an interesting phenomenon this year; we had to turn away some outside students because we had so many apply to come to camp! This year we had thirty-six students, twenty from Iowa State, ten from Nebraska, and six from other universities. We are currently capping numbers at thirty-six because larger numbers make logistics difficult. Erik Kvale was out this summer to continue his Greybull Sandstone exercise, which is a favorite project of the students. Carl Jacobson and Jane Dawson were also at camp to help with its operations, while John Hoyt was the TA. Construction continues on the new facility at a fast pace. We are looking to take the key for the new building around the first of the year. When all the work is done, camp will be a world-class facility!

Work in Egypt is still on hold for now. I hope that this important project will be able to start again in the next few years. I also helped Tom Bown with his field class in Wyoming this summer. It was great to spend time with him and reminisce over past adventures.

I recently bought a house. It is within walking distance of the football stadium. Now on to the joys of home ownership again!

Bill Simpkins, Professor and Chair

The Hydrogeology Research Group (a.k.a. Team Hydro) enjoyed a busy year. Last fall, I presented Adam Davison’s MS thesis work at the GSA Annual Meeting in Denver, Colorado on human enteric viruses in the South Skunk River and Ames aquifer. The talk was entitled: Good or Bad News? A Dose of Human Enteric Virus Tracer May Protect Your Municipal Drinking Water Supply. I also presented alternate versions of the talk – Occurrence of Human Enteric Viruses in an Alluvial Aquifer: Induced Infiltration, Leaky Sewers, or Both? – in March at the Iowa Groundwater and Public Health Symposium (along with Adam) and Udden Geology Club at Augustana College and in August 2014 at the International Emerging Contaminants Conference (EmCon) in Iowa City.

The manuscript is being sent to Environmental Science and Technology. In December 2014, Alex Morrison defended his MS thesis on agricultural drainage effects on hydrology in the South Fork watershed. His attempt to implement a 3-D watershed hydrologic model, HydroGeoSphere, was ultimately unsuccessful due to the model’s rather unpredictable behavior. Fortunately, he had sampled and analyzed stable isotopes (in Al Wanamaker’s lab) and parlayed that work into a very nice discussion of the effects of the drought on isotopic composition of precipitation, groundwater, tile drainage water, and surface water. We plan to send this to Hydrological Processes. Alex is now employed with the Minnesota Pollution Control Agency in Minneapolis. With Kristie Franz’s leadership, we finished the final contract report Hydrologic Impacts of Tile Drainage for the Iowa Economic Development Authority. Fortunately, the HydroGeoSphere model is working for simulating climate change effects in the South Fork (Iowa River) watershed on the project I have with Kristie and post-doc Ozlem Acar.

I welcomed two graduate students this fall. Alyssa Witt comes to us directly from Minnesota State University-Mankato. She will do her MS research on a new aquitard recharge project funded by the U.S. Geological Survey’s Minnesota Water Science Center and the Minnesota DNR. Two sites in Minnesota – one in the Des Moines Lobe and one in the Superior Lobe – with till overlying a sand and gravel aquifer will be chosen this spring. We will be taking till core and anticipate using isotopes extensively while also performing a long-term pumping test. The major stumbling block on this project appears to be the reluctance to redirect the funds to a professor living in Iowa. Go figure. My other new PhD student, Nathan Young, comes to us fresh from a completed MS at Wright State University under the tutelage of my colleague, Bob Ritzi. Nathan will likely work on the groundwater story at the Iowa Great Lakes, implementing a watershed-scale groundwater/surface water model to understand nutrient fluxes and effects of climate change. Assuming the Iowa DNR funds the study, it will be a great project and an important one for all of Iowa. As a final note, former undergraduate research assistants Jamie Harrington and Kim Scherber are now graduate students in hydrogeology at Kansas State University and in groundwater hydrology in Civil and Environmental Engineering at the University of Wisconsin-Madison, respectively.

I was pleased last spring to be nominated as an Outstanding Faculty Member by a former student and selected by his Phi Kappa Theta fraternity at ISU. I taught 20 students (18 undergraduate and two graduate students) in Hydrogeology last fall. The plaintiffs won the annual Civil Action Mock Trial (http://www.las.iastate.edu/isu-trial-jury-reaches-a-verdict-of/) which gives them a 7-4 lead. This fall, that number increased to an all-time high – 32 students (30 undergraduate and two graduate students). In the spring, I taught Applied Groundwater Flow Modeling to a great class of 10 students. I also taught Energy and the Environment to 210 students, featuring guest lectures by faculty members Franek Hasiuk and Al Wanamaker and ISU’s Director of Sustainability, Merry Rankin. The class was dominated by the students in the College of Engineering (59%), with 39% majoring in Mechanical Engineering alone. Many want to work for Halliburton or in renewable energy. Sadly, after 11 years, I will hand this course off to one of my colleagues next spring, due to being chosen as chair of the department (see earlier article). In addition to departmental service, I also completed my final year on the College’s Promotion and Tenure Committee and my second year as a GSA Councilor.

In family news, Scott is doing well in his PhD program in Bioinformatics and Computational Biology at the University of Minnesota. Daughter Kelsey is now working for Great River Greening, an environmental non-profit also in the Twin Cities. Cathy and I toured Italy in late May and early June and saw all the highlights, including Pompeii,
and then spent a weekend in Door County, WI in July. As the new chair of the department, I invite you to visit us whether you are a hydrogeologist or not! Please stop in if you are in the area!

Paul Spry, Professor

This was a busy year with two of my graduate students finishing (Samantha Bristol and Andy Fornadel) and two of them (Kate Frank and Josh O’Brien) well on their way to finishing. Samantha Bristol completed her Master’s research project on the origin of the Stanos copper-bismuth-gold deposit, northern Greece in May and is now a Production Enhancement Engineer for Halliburton in Casper, Wyoming. Andy Fornadel completed his NSF supported research project on the geochemistry of stable tellurium isotopes on tellurium-bearing minerals in ore deposits during the summer. He prepared three journal articles for his dissertation, one of which was published earlier in the year with two others submitted in the fall. With PhD in hand, Andy began a one-year appointment as visiting assistant professor at Bucknell University, in Pennsylvania. During the summer, Kate Frank (MS student) and Josh O’Brien (PhD student) worked on their respective projects on the metamorphosed massive zinc-lead deposits in the Stollberg ore field, Sweden. Kate is evaluating the genetic relationship among deposits in the ore field and also using the trace element composition of magnetite as a potential guide to ore, whereas Josh is using the trace and major element compositions of garnet and biotite as indicators to mineralization. Both of them presented the results of the Swedish study at the Society of Economic Geologists conference in Keystone, Colorado in September. In addition, Josh prepared three papers on the main part of his PhD dissertation on the use of galinite as an exploration guide to massive sulfide deposits. Two papers were accepted for publication and the other one is in review. Josh and Andy presented the results of their research in January at the Society of Economic Geologists meeting in Whistler, British Columbia, which I also attended.

This year, I received a grant from the government of South Australia to evaluate the composition of silicates, sulfides, and spatially associated with copper-lead-zinc mineralization in the Kanmantoo Group, South Australia. Undergraduate student, Chris Beaver, journeyed to Australia to collect samples under the guidance of Ross Both (University of Adelaide), and Joe Ogierman (Reliance Resources). I plan to get a new graduate student involved in this project in 2015.

I continue my work with Panos Voudouris (University of Athens) and Vasilios Mellos (Aristotle University of Thessaloniki) on the geology and geochemistry of ore deposits in Greece, and with Sarah Hayes (University of Alaska-Fairbanks) on the mineralogy and chemistry of tellurium in the hypogene and supergene environments.

In Fall 2013, I taught Geol 316 Optical Mineralogy, Geol 105 Gems and Gemstones, and Geol 507 Midwestern Geology Field Trip, and continued to team teach Geol 365 Igneous and Metamorphic Petrology with Jane Dawson, in the spring semester. Last year’s Geol 507 field trip went to the Upper Peninsula of Michigan where we visited the Quincy copper mine, the famous A.E. Seaman mineral museum at Houghton, iron mines in the Ishpeming area; and the Back Forty Cu-Zn deposit (see photos elsewhere in the Varve).

In November 2013, I went to New Zealand and Australia to give two short courses, one at the 26th International Applied Geochemistry Short Course on Application of Indicator Methods to Mineral Exploration in Rotorua, New Zealand (see photo above), and to the Australian Institute of Geoscientists in Adelaide, Australia. This was especially enjoyable as my 8 year old son, Ian, got to travel with me on the trip.

Please continue to keep in touch by phone at (515) 294-9637, by e-mail (pgspry@iastate.edu), or just drop by.

Carl Vondra, Distinguished Professor Emeritus

Georgia and I just returned from a three week trip to Wyoming, Montana and Colorado in time to attend the homecoming football game with Toledo. We briefly stopped at the field station to see the progress in the construction of the new student quarters and lecture hall. Then we visited our son, Charles, and his family in Livingston, Montana. From there we drove to Vail, Colorado to spend a week with our daughters, Cynthia, and Carla and Carla’s husband. For me, the visit to Vail brought back memories of my days studying the Minturn and Maroon Formations along the margin of the Central Colorado Basin for Amoco back in the early 60’s. I am still volunteering to teach courses for Iowa State’s Osher Lifelong Learning Institute (formerly the College for Seniors). Last spring, I taught a course concerning the geology of the Rio Grande Rift and associated features. This coming winter and spring I will teach courses entitled, “Oil and Gas Upstream Operations” and “Fire and Ice – the Geology of the Cascades.” In the fifteen years that I have volunteered for OLLI, I have had full classes. It is amazing how much interest there is among retirees to learn about geology.

I still make it to my office in the Science Building on most days and I attend most seminars. I have also presented lectures concerning such topics as Hydraulic Fracturing and the Athabasca Tar Sands to several organizations. Georgia and I continue to travel. In July, we took a trip to Eastern Europe. We spent five days in Budapest, then from there took a Viking river boat excursion down the Danube River to the Black Sea. We had a great time. Both Georgia and I are in good health and our children are doing well. We hope this issue of the Varve finds you and your families in good health and prospering.
Alan Wanamaker, Jr., Assistant Professor

Our big news in the Stable Isotope Paleo Environments Research Group (SIPERG) came in early June 2014. The National Science Foundation (NSF) awarded us funds to continue our climate-based research in northern Norway (Project title - Collaborative research: Exploring the role of oceanic and atmospheric forcing on Arctic marine climate from newly developed annual shell-based records in coastal Norway). It took a bit of persistence to get this project funded, but it certainly was worth all the work. With support from NSF, a large group of us (11 in total) from ISU and Bates College in Maine headed to the small island of Ingøya, Norway for eight days. This year, Madelyn Mette (ISU PhD student), Aubrey Foulk (ISU undergraduate), Dan Frost (high school teacher from Maine) and freelance photjournalist Randall Hyman (randalhyman.com), along with co-investigators from Maine and Norway, accompanied me to Norway. Randall Hyman published three blog articles in Discover Magazine entitled “Dead Clams Talking,” to help disseminate this research to the greater public. The links to these articles and other news can be found at our SIPERG web site (http://www.public.iastate.edu/~siperg/). Maddie is in her fourth year as a PhD student and she is preparing the first manuscript on the Norway project, which will be the basis of her dissertation. Maddie was also awarded a “best poster” distinction at the 2014 Connaught Summer Institute in Arctic Science for her research in northern Norway.

After the 2014 spring semester finished, I helped with a summer school in Wales, UK and participated on a research cruise associated with the ARAMACC project (Annually Resolved Archives of Marine Climate Change; aramac.com). I serve as the Visiting Researcher for this large EU-funded Marie Curie Initial Training Network. This research cruise took us to the Outer Hebrides of NW Scotland, including the incredible island of St. Kilda, which is a World Heritage site. The weather was oddly beautiful and the seas were flat. Following this amazing trip, I met colleague Rhawn Denniston (Cornell College, Mt. Vernon, Iowa) in Portugal to service instruments monitoring temperature, humidity, and pressure inside and outside our study site. This involved confronting my fears of giant spiders as we squeezed our way into several caves with openings much smaller than me. As part of her MS thesis, graduate student Diana Thatcher has sampled several stalagmites from this region to document and characterize late Holocene climate and hydroclimate from the Iberian Peninsula. Diana just began her second year and she has produced several highly resolved isotope profiles from these speleothems.

As always, I am very thankful to Suzy Ankerstjerne (Manager of the stable isotope lab), and Mark Mathison (technical guru) for their hard work and dedication to the SIPERG mission. They keep things running smoothly in the basement of Science I.

My teaching duties last year included Introduction to Oceanography, Stable Isotopes in the Environment (upper undergraduate/graduate), and a new course (Principles of Radiometric Dating), which also serves upper undergraduate and graduate students. The new course was both exciting and challenging. In the end, it was very satisfying to develop this course; I learned about many new geologic systems and techniques associated with using radiogenic isotopes. I think the students learned a lot, too.

My family (Ellen, Jayna, and Jack) and I are well. Ellen continues to work for the newly renovated Ames Public Library as an information specialist. This is seems to be her most satisfying and rewarding job yet! Jack is a 5th grader in the new Edwards Elementary building and Jayna is an 8th grader at Ames Middle School. Jayna is now taller than her mother and Jack routinely crushes me in chess! It is fun to watch them grow. I look forward to seeing folks whenever you are in Ames, so please feel free to stop in and chat. I wish you and yours a safe, fun, and healthy year. I hope to see you at the field camp reunion in Wyoming in the summer of 2015.

Lucas Zoet, Postdoctoral Research Associate

This fall marks my two-year anniversary as a postdoc in the department. This upcoming year will be my last at ISU, as I’ve accepted a position as an Assistant Professor of Geoscience at the University of Wisconsin-Madison, where I’ll be continuing my work on glaciology and glacial geomorphology. I’ve been hard at work conducting experiments and making modifications to the lab apparatus in order to run new types of experiments. In addition to research, I’ve been teaching at Iowa State. During the fall 2014 semester I am teaching Surficial Processes, which has been a fun challenge. The class has conducted several field exercises and are planning a weekend long trip to the Twin Cities to investigate some interesting geomorphic deposits. I’m also conducting an independent study with a student on potential causes for the strengthening at the ice-bed interface of Antarctic glaciers. This independent study has a large experimental component.

Over the past year, I’ve run experiments sliding ice over soft bed samples in the ISU ring-shear apparatus. We have manipulated the ring shear’s configuration to slide ice over deformable till rather than a rigid bed. We hope to investigate sliding rules for deformable beds and any potential implications for the formation of subglacial landforms. We have a manuscript submitted now pertaining to the first batch of experiments conducted on rigid beds, and hope to see it published soon. In addition to this laboratory work, I accompanied a group of scientists led by Neal Iverson to the glacier Múlajökull in the central highlands of Iceland in order to study a recently exposed field of drumlins. We collected a wide variety of data that compliments the data gathered last season in hopes of answering the long-standing glacial geology question of how drumlins form.
Beck Family Scholarship: Established by Jim and Denise Beck to help the department recruit the best undergraduate students, with particular emphasis on providing assistance for students to attend field camp.

Bruce Bowen Graduate Fellowship: This fund was established by Bruce Bowen (BS 1967, MS 1970, PhD 1974) in 2012 to support graduate students enrolled in the geology program.

Carolyn Eiler-Jones Scholarship: Established in the memory of Carolyn Eiler-Jones (BS 1973) by her family, this fund provides a scholarship for an undergraduate student to attend the summer field camp.

Geology Alumni Development Fund: Established by Geology alumni, this fund provides support for travel and other expenses associated with development activities.

Geology Development Fund: This fund is unrestricted. Generally, it has been used to support purchase and maintenance of equipment used in research and teaching, and to cover start-up funds for new professors.

Geology Field Camp Fund: This fund allows improvements in the facilities at the Wyoming Field Station.

Georgia L. and Carl F. Vondra Graduate Fellowship: Established in 2000 in honor of the distinguished contributions of Carl Vondra to the Department of Geological and Atmospheric Sciences. This fellowship is to attract an outstanding incoming graduate student by providing a fellowship above and beyond the stipend the student will already receive from a research or teaching assistantship.

Hueyepohl Geology Field Camp Scholarship: Established in 2004 by Bradley Huedepohl (MS, 1956) to provide a scholarship for an undergraduate to attend the ISU summer field camp.

John Lemish Memorial Scholarship: Established by Dr. Ramon Bisque (PhD 1959) in 1989 in honor of John Lemish (Professor Emeritus) and was called the John Lemish Award for Earth Science.

Provides a cash award to one or more outstanding graduate students with demonstrated research ability.

Jon Martin Peckenaugh Geology Field Camp Scholarship (2702869): Established in 2010 in the memory of Jon M. Peckenaugh (BS 1970, MS 1973) by his family, to provide a scholarship for an undergraduate geology, environmental science, or Earth science major to attend the Carl Vondra Field Camp.

Kevin Connolly Geology Field Camp Scholarship: Established by Kevin Connolly (BA 1987) in 2008 to provide Geology or Earth Science majors with a scholarship to attend the Carl Vondra Field Camp.

O’Brien-Lonsdale Endowment Fund: This fund will establish an endowed chair in geology.

Peter R. Johnson Memorial Scholarship: Established in the memory of Peter R. Johnson (BS 1977) by his family, this fund provides a scholarship for an undergraduate student to attend the summer field camp.

Quentin Schmidt Memorial Field Trip Fund: This fund furnishes financial support for class and departmental field trips.

Rodney D. Gardner Memorial Scholarship: Established in 1993 by the children of Rodney D. Gardner (BS 1962), this fund furnishes a scholarship to an undergraduate student on the basis of scholarship and financial need.

Tom & Evonne Smith Field Station Maintenance Fund: These funds will be used to support long-term maintenance of the facilities at the summer field station.

Tom & Evonne Smith Field Station Staff Support Fund: Established in 2013 to support a staff position at the summer field station.

Tom & Evonne Smith Field Station Improvements Fund: Established in 2013 to be used for capital improvements to the summer field station.

This poem is from the early ’70s, and forms part of a collection of handwritten poems found at Field Camp last year hidden away in some drawers and even walls! Happy reading!

Field Camp
The moon still rises over the red cliff
The evening sun still lights it golden
At noon the sun casts cottonwood shadows down by the swimming hole
in the willows
Even though all is silent there.

The breeze blows the sand bit by bit
And the creek moves the cobbles one by one
Soon all footsteps will be gone from the beach.

The buildings stand shuttered and dark
And patient, Waiting for laughter, loud words and the stomp of booted feet.

At night no laughter of returning friends is heard along the road
As stars wheel overhead with no one there to marvel at their brightness.

The desert will continue unchanged, indifferent
Displaying its colors to no one
The wind will softly erase tire track and boot mark as if no one had ever been there.

Frustration, sweat, tears mean nothing now
All is silent
No one wanders in Alkali anticline
And Sheep Mountain will renew her secrets for different faces next year.

Betty Ann Clark (August 1973)
Alumni Contributions to Geological Sciences: Iowa State University

I wish to support programs in Geological Sciences at ISU. Enclosed is my gift of:

_____ $1000  _____ $250  _____ $100  _____ $50  Other $________________

Please specify the Geological Sciences fund that should receive your gift:

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I will request that my employer match my gift (if appropriate) to the same fund noted above. My employer is

________________________________________________________________________

For gifts of $100 and above you may choose to receive a 6" x 8" (landscape) plaque cut from a plank saved during the demolition of the renowned field camp “5-Holer.” The plaque contains a metal plate with the inscription “Iowa State University, Carl F. Vondra Geology Field Station, From the “5-Holer” - In use 1958-2004, Certified Authentic by: [Carl Vondra’s signature]. For gifts of $200 and above you may choose the 6" x 15" (portrait) version.

Your check, made payable to the ISU Foundation, is tax deductible. Please include the fund number on your check, and return it with this form to: Dr. William Simpkins, Chair, Dept. of Geological & Atmospheric Sciences, 253 Science I, Iowa State University, Ames, IA 50011-3212

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Diana Thatcher (MS student) with one of her stalagmites from Portugal
High resolution sampling of Diana Thatcher’s stalagmite
Field camp group photo on the Greybull Sandstone along the northeast side of Sheep Mountain. Industry guest instructors Ben Burke and Erik Kvale at the left and right ends, respectively, of the front row.