

The Contact

Newsletter
for alumni of the
geology program at
Illinois State University

APRIL 2003

Message from the chairperson

Greetings from the Department of Geography-Geology! I am pleased to announce this year's Geology newsletter is now off the presses. I am happy to report that everyone here is alive and well. As a group and individually we have enjoyed another extremely productive year. Personally, I took sabbatical leave last spring, and did my best to remain out of the picture, which you may expect was not an easy thing for me to do.



In the last issue of the *Contact* I reported that the single most important challenge that our department will face over the next several years is to successfully navigate the turnover among our faculty. Boy, was I wrong. Our faculty turnover has proceeded flawlessly. Each of our new colleagues has hit the ground running and each has been making steady and important contributions to our mission.

A much bigger problem, one that was barely on the horizon last year at this time, is the state budgetary crisis. Last December I added the word "rescission" to my vocabulary, and the word has enjoyed regular usage ever since. Like all public colleges and universities in Illinois, Illinois State University this year is faced with meeting our obligations to our students and faculty with a lot less money than we need. In the past year we have endured two temporary rescissions and one permanent rescission to our operating budget, which amounts to cutting about \$25,000 at the department level. Overall, Illinois State was faced with a budget cut of about 10 percent in general revenue funds. Specifically, we have taken modest hits to our travel and equipment budgets, we have had to defer searching to fill a vacant faculty line, we have lost all money to hire temporary faculty, and all of us have had to go without an annual raise. To make matters worse, our central administration is in transition as well. In my three years as chair, I have served under three different deans, three different provosts, and now two different presidents. Fortunately, a new

provost has just joined Illinois State University, and searches for a permanent dean and president are being initiated.

Despite the bleak budget outlook, faculty and student morale is high. We have been able to make up for our budget shortfalls through external funding for research projects and your generous donations to the Powell Fund. Much has been accomplished during the past year. We have filled Sam Boateng's line with Eric Peterson. Eric is a hydrogeologist who recently completed his Ph.D. at the University of Missouri. We also have made much needed improvements to our graduate curriculum, our level of external funding has increased substantially, we have added research and instructional equipment, our publication rate for faculty and

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Stan Paxton delivers Foster Lecture



Photo courtesy of Oklahoma State University School of Geology.

The 2002 John W. Foster Memorial Lecture, "What Price Water," was given by Dr. Stan Paxton B.S. '74. The Foster Lecture is given annually in tribute to John Foster, a member of the Illinois State University Geology faculty from 1982-1995. Stan is an assistant professor at Oklahoma State University. Like John, Stan had extensive industry experience before beginning his career in academia in 1999. Stan's research interests include sedimentology, petroleum geology, and hydrogeology, and involve an integrated, regional approach to solving geologic problems.

students has increased, the quality of these publications has improved, and our programs continue to attract high-quality students.

An important sign that our department has reached a new level occurred to me in July. July is typically a very quiet time in the department. Most students are recovering from field camp and working off campus somewhere. July is the time when abstracts for the fall Geological Society of America meeting (this year the meeting was held in Denver) are due. This year in July the department was buzzing with student power and energy, as all six faculty members and six students worked to put the finishing touches on their research and submit abstracts for presentations at the meeting. All of the student abstracts were related to work completed in collaboration with the scientists at the Illinois State Geological Survey (more on this in a later section). In early October, as the final posters were being pulled together, the plotter ran non-stop for about two weeks. Overall, 20 Illinois State faculty and students attended the meeting. We certainly were well represented, and we projected a strong image.

On a personal note, I now find myself at the midway point of my five-year term as department chair. Time sure flies when you are having fun. The kids keep getting older, and their consequent demands on my time keep increasing. I would not change that for the world. Thus the Heart Mountain problem remains unsolved, but progress is being made. I hope that my latest contribution finds its way into print in *Geology* later in the year. Two other papers are in the works: one on the emplacement rate of the upper plate, the second on the scientific context of the last 10 years of research. In the meantime, I look forward to working with students to advance the understanding of geology in LaSalle County, and to explore the use and utility of the various new methods of 3-D geologic mapping.

I hope that for each of you 2003 is prosperous and that you and your family enjoy good health. I invite you to visit the department the next time that you are in town so you can meet some of our new colleagues. I also encourage your feedback about the happenings in the Geology program. Please feel free to contact me at dhmalon@ilstu.edu or (309) 438-2692. If you haven't looked lately, please visit our departmental Web site at <http://www.geo.ilstu.edu/>. It was fully revised a year ago, and it is updated regularly, and includes numerous photographs of our recent field trips.



Dave Malone

Welcome to Eric Peterson

By Eric Peterson

Let me take a moment to introduce myself to the Illinois State University Geology alums. I am a hydrogeologist with interests in karst aquifer systems and in surface water and groundwater interaction. My path into geology began as a drilling assistant for an environmental consulting firm, and I have been hooked ever since.



I arrived at Illinois State University after completing my Ph.D. at the University of Missouri in Columbia in May 2002. Following the dissertation defense in May, my family, including my wife, my 5-year-old daughter, my 6-month-old son, and our dog, made the move to Bloomington-Normal. Everyone is getting settled and is enjoying the area.

The summer was spent preparing for the fall semester. Developing a course in engineering geology for the first time has been interesting and insightful to say the least. I am also teaching a large section of principles of geology. In the upcoming semester, I am looking forward to teaching the groundwater modeling courses, the groundwater course, and a hydrology course.

Although I feel I am working at a snail's pace, I have seen some results. I have submitted one paper for publication, and I am in the process of submitting a second for publication from my dissertation work. I also have had the chance to get started on a research project examining the factors that control the interaction of surface water and groundwater. A second project is set to begin in the spring semester that examines the effectiveness of wetlands in the removal of the hormone 17 b-estradiol. Both projects have been developed in conjunction with graduate students, and I am excited about these projects because of the students' interests and commitment.

The faculty, staff, and students have made the transition rather easy for me, and I appreciate that. With the first semester over, I have had a wonderful time, and I look forward to future experiences.

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Cooperative efforts expand with the Illinois State Geological Survey

Last year, Illinois State University and the Illinois State Geological Survey, funded by the Illinois Board of Higher Education, began a cooperative effort to simultaneously learn more about the geology of Illinois and train students in the latest methodologies and conceptual frameworks.

In 2001-2002, two projects were initiated. The first involved a seismic study of part of the Mahomet Aquifer near Allerton State Park in Illinois. During the course of the year, about 15 students were involved in some capacity. Six of those students spent six weeks in the field gathering and interpreting seismic data. The second project involved a geochemical reconnaissance of stream sediments in Central Illinois. Six students participated in that project. The results of their work were presented at the Denver GSA meeting in October. In addition to providing student support, funds for the project were used to build a seismic processing laboratory in Felmley Hall, which is equipped with the latest software. Four of our graduate students are using this lab as part of their thesis research.

These projects were expanded in 2002-2003. The seismic project now has three components: a follow-up project at Allerton Park, a new study area on part of the Mahomet Aquifer near Fisher, Illinois, and a new project in LaSalle County on the Ticona bedrock valley. The surficial geology of LaSalle County, supported by grants from the U.S. Geological Survey, has been the focus of research by Illinois State University students for several years. The study of the Ticona bedrock valley will combine the surface and subsurface efforts to produce detailed 3-D geologic maps.

Emeritus faculty update

Bob Corbett continues to remain active in his retirement. He still serves on the executive committee at AIPG, teaches Foundations of Inquiry, a general education course required of all freshmen, and pursues his research on groundwater chemistry in Oklahoma.

Jim Kirchner has sold his house in Illinois, and now is a full-time resident of Michigan. He recently purchased a motor home and as I write is taking a tour of Florida. Way to go, Dr. K.!

Drs. Hart and Searight continue to enjoy retirement in Normal and Lawrence, Kansas, respectively.

The next geology alumni picnic will be in 2004. We hope to hold such an event in alternate years in May.

Powell Fund update

By David Malone

As in past years, your generous donations to the Powell Fund have helped alleviate pressing budgetary concerns. This past year, the Powell Fund was used to pay for vehicles used on the spring break trip, to pay for the registration fees for 10 students who attended the Tri-State Field Conference in Iowa in early October, and for 15 students to attend the Geological Society of America Meeting in Denver in late October. The Powell fund will continue to be used exclusively for student-related activities.

On behalf of my colleagues, I would like to thank those of you who were able to make donations to the Powell Fund despite the sluggish economy.

Donors to the Powell Fund this past year were:

James J. Mackay	Drs. Elizabeth and Andrew King
Dr. Jim and Diane Carter	Paula C. and Albert Garcia
Dr. David and Dawn Malone	John H. and Mary J. Traub
Edward C. Smith	Dominion matching gift program (John Traub)
John R. and Constance A. O'Gorman	Captain David P. and Linda L. Elbow
Harold A. and Cheryl A. Orndorff	John Taylor
Dr. Stanley and Mary L. Paxton	NCS Pearson matching gift program (John Taylor)
Robert F. Sloan	Raytheon matching gifts program (donor unnamed)
Charles R. and Cheryl K. Wiles	John C. Grabs
William E. and Laurie Shields	

Collectively, these individuals contributed \$3,000, which was a little less than expenses. The Powell Fund has a balance of about \$13,000. Over the next several years, I would like for the balance in the Powell Fund to double so that we can begin a scholarship program to attract incoming students. We also would like to develop a separate scholarship program to help advanced students pay for field camp. Last year, tuition and fees for field camp amounted to more than \$2,500. I will provide more information about this next year.

As I am sure that you have heard by now, the University is in the midst of a new comprehensive campaign, called *Redefining "normal": The Campaign for Illinois State University*. The University hopes to raise \$88 million by December 2004. This is the first campaign for Illinois State. To date, we have raised more than \$63 million.

Undergraduate program update

By David Malone

For the first time in many years, the undergraduate program made it through the year without any substantial changes to the curriculum. The revisions to the curriculum implemented over the past several years are working well.

Welcome to new alumni

Our major count is still between 25-30, which is about half of what is optimal, and eight students joined this list of Illinois State University geology alumni, which is approaching 450 members. They are Melinda Buyck, David Carstens, Diane Lamb, Brian Mumm, Jennifer Murphey, Anthony Swierczek, Tim Walls, Bryce Willems, and Jim Tate.

Student honors

We may be small in terms of numbers, but we are strong in terms of achievement. Both Jennifer Murphey and Diane Lamb were selected as recipients of NAGT Field Camp Scholarships. These \$500 awards are given annually to about 35 students nationwide, and we were the only university in the nation to have two students win the awards.

Jennifer's record also led to her selection as recipient of the 2002 Austin Weeks Scholarship, which is provided by monies from the American Association of Petroleum Geologists through our student chapter. This \$500 scholarship is given to a deserving student engaged in a research project that involves sedimentology, stratigraphy, paleontology, or structural geology.

June Clevy was selected as the 2002 Lathrop Award winner. The Lathrop Award is given annually to the top student each in Geography and Geology

Summer field camp out west

Field camp this past summer was much as it was last year. This is the second year of the new schedule, and we have begun to settle in to our new digs and new routine. I taught the first half with Dr. Fisher (NIU) in Wyoming. Dr. King and Dr. Stoddard (NIU) taught the second half in South Dakota. Dr. Nelson was on duty for both parts of camp. After

11 years, Stoddard has decided to stop teaching field camp in order to pursue other interests. This year, nine students from Illinois State University and two from NIU participated. The weather was a major issue. During the first week in Wyoming, we were treated with two howling blizzards (Yes, I never changed out of my shorts, but I did put on a

heavier coat and my fishing gloves.). One was at Steamboat Mountain, where we had intended to measure the Cambrian section. It was simply too cold to work there, the snow was piling up, and the wind was unbearable. We missed the snow line by about 500 feet, and we had to work a different part of the section that day. The next day was not much better. This time the snow line was on the pediments, but we persevered and measured the middle Paleozoic section along Crazy Woman Canyon.

On the first day off, I headed off to the Middle Fork of the Powder River up from Kaycee, Wyoming, as usual, to get my feet wet and find some fish. I did catch a few fish, but I also slipped over a cliff while retrieving a lucky fly (The fly ultimately was lost.), and fell into the creek bank below. I was lucky to be able to walk away with only a broken rib. Needless to say, my final two weeks at camp were pretty painful. Lesson learned.

We managed to see a bear again this year in the Absarokas, but not in our mapping area. One student, while seeking a secluded restroom, chanced upon a nervous mother moose watching over a very young calf. Both student and moose were startled, and I will be surprised if either ever forgets the incident. My half of field camp concluded with a tour of Yellowstone Park and healing of the broken rib in the therapeutic waters and steam room of the Thermopolis Hot Springs.

One word describes the second half of field camp: HOT. June saw record heat and little precipitation. Forest fires consumed much of the area south of Whitewood Peak while our group was in the field there. Heat stroke and dehydration were serious concerns, but all made it through in good physical health.



Photography of field camp students in Jackson Hole, Wyoming.



Photography of NIU student Isaac Pierce measuring section in Crazy Woman Canyon at field camp during a blizzard.

Photo by David Malone.

Photo by June Clevy.

with a strong record of leadership, scholarship, and financial need. The Lathrop Award honors Dr. Harry O. Lathrop, a professor in the department during the 1930s and 1940s. An endowment set up in Lathrop's honor provides a \$300 stipend for the award recipient.

A need to grow

The small size of our program is beginning to be a critical issue. For years, we have passively been trying to increase the number of our majors without reducing the rigor of our program. I plan to devote more of my time than ever in 2003 to recruiting majors. My efforts will include more aggressive recruiting in our general education courses and being more proactive with the Admissions Office to ensure a greater number of students with an interest in geology who apply to Illinois State actually enroll. My fingers are crossed.

Trip to Guadalupe and Sacramento Mountains

One new field course was developed this year. It is "Regional and Area Studies: West Texas-New Mexico." Over spring break, Dr. Robert Nelson, Dr. Jim Carter and I led 18 students to the Guadalupe and Sacramento Mountains. The Guadalupe Mountains contain a beautifully exposed Permian rimmed carbonate platform. On one hike on the Permian trail, we were able to climb from the deep basin up the continental slope, through a barrier reef, and onto the shelf. Other highlights of the trip included a descent into Carlsbad Caverns, an exploration of White Sands National Monument, a chilly morning at Palo Duro Canyon near Amarillo, a snowball fight at Cloudcroft, New Mexico, and a sandblasting by 70-mph winds at Guadalupe Pass. We spent four beautiful starlit nights at Dog Canyon Campground at Guadalupe Mountains National Park.

There are few more remote places in that part of the world. We spent a fifth night camping on an alluvial fan just south of Alamogordo.



Breakfast time at Dog Canyon Campground in Guadalupe Mountains National Park in March.

Department launches new environmental geology field camp

By Steve Van der Hoven

During the summer of 2002, the department launched a new field course that focused on skills used by environmental geologists. Although open to students at both the undergraduate and graduate levels, the course was developed with the needs of the Hydrogeology graduate students in mind. The traditional geology field camp still remains a requirement for undergraduates. In keeping with the operation of the geology field camp, the new environmental geology field camp is a joint venture with Northern Illinois University. This partnership allows us to offer a broad range of topics by drawing on the faculty expertise and field equipment of both universities. Two of the newest faculty members, Steve Van der Hoven for Illinois State and Melissa Lenczewski for NIU, were the organizers of the field camp.

The four-week course was based in Bloomington-Normal for the first two weeks and in DeKalb for the second two weeks. In Bloomington-Normal, the activities focused on problems related to surface water, groundwater, and the unsaturated zone. Many of the exercises were conducted at the department's teaching and research well field, installed in May 2001. The exercises also made good use of the extensive array of hydrogeologic field equipment that has been acquired over the past several years. During the daytime hours, students got hands-on experience collecting physical and chemical field data using manual and automated techniques. Evenings were spent using software to graph, display, and interpret the previously collected data.

When the field camp moved up to DeKalb, the focus was on Quaternary geology, soils, and shallow geophysics. Several days were spent field-tripping around Northern Illinois becoming familiar with the various Quaternary deposits. This section of the course culminated in a several-day project mapping the surficial geology of the Genoa quadrangle. During the geophysics section, various techniques were used to identify and locate the water table, geologic units in the subsurface, karst features, and buried anthropogenic features.

Overall, the course went remarkably smoothly, particularly considering it was the first time through. The feedback from the students was positive, and planning has already begun for the summer 2003 edition.



Aquifer test at Illinois State University instruction well field.

Photo by Bill Shields

Graduate program update

By David Malone

A new name and many improvements

I am very pleased to announce that the name of our graduate program was changed from Geohydrology to Hydrogeology. Although this name change may at first seem superficial because only a half dozen or so consonants and a vowel or two changed order, it is in fact very substantive. Over the years, the term hydrogeology has become a much more widely used term than geohydrology. We hope this change will result in a greater degree of prominence for our program, and that prospective students, colleagues at other universities, and local and regional business, industry, and government agencies will be come more aware of what we actually do.

The Hydrogeology Program is on the verge of becoming one of the most highly regarded graduate programs at Illinois State University. Although the first class was admitted 10 years ago, progress was hampered by insufficient funding, which led to inadequate research and instructional facilities, faculty turnover, and low graduate assistantship (G.A.) stipends.

Numerous substantial improvements have been made in the Hydrogeology Program over the last few years, as follows:

Student quality and commitment

Graduation rate: During the six-year period of the program review, the graduation rate averaged about four students per year. In 2001, eight students graduated from the program. Seven more graduated in 2002. Thus, in the two years following the review, the graduation rate has doubled from its historical average.

Student quality: Although we have regularly been able to attract well-qualified and motivated students, the quality of our graduate students continues to increase. Three of this year's incoming cohort (out of nine) have undergraduate GPAs of

more than 3.6. One of these had a perfect 4.0 GPA. One of last year's cohort (out of three) had a general GRE score of 2200, which was the best of anyone admitted to Illinois State that year.

Student diversity:

Despite our efforts toward diversity, only one of the first 22 graduates of the Hydrogeology Program was

female, and none were from traditionally underrepresented ethnic groups. Three of the last year's (38 percent) graduates were female, which is close to the national average for female participation in geology graduate programs.

Scholarship: The presentation of research results at professional meetings by Hydrogeology students is becoming routine. Half the students who graduated last year have presented or will present the results of their thesis research at the national or regional meetings of the Geological Society of America.

Faculty quality and commitment

Faculty turnover: At full strength, three faculty lines are assigned to the Hydrogeology Program. Former faculty members have been replaced by Steve Van der Hoven and Eric Peterson. Both were the top candidates in their respective search fields. The third line is vacant, and it will be filled as soon as the budget situation permits. Skip Nelson, Jim Carter, and I have increased our participation in the program during this transition. Both Steve and Eric are active scholars and have published papers in highly regarded, international journals.

External funding: During the last two years, more than \$200,000 in external funding has been generated by faculty to support research and instruction. About half of this was cash, and the other half was in kind, and included computer hardware and software. An important benefit of this external funding is our new ability to appoint a large number of our students as research assistants.

Support staff: The department added Bill Shields, a much-needed technician, in 2001. Bill supports faculty by assisting with setting up research laboratories and participating in fieldwork, and by managing our general education laboratories. These activities previously were delegated to the faculty, which substantially reduced their ability to engage in research and work with students.

Infrastructure and curriculum

Research and instructional facilities: The College of Arts and Sciences has invested a substantial amount of money in the Hydrogeology Program during the past few years in the form of program enhancement and new faculty start-up. More than \$125,000 has been allocated or is promised to our department to improve the program. The external funding mentioned above also has led to improvements in infrastructure. The program now has a modern instruction well field with the necessary equipment for high-quality research and instruction. New geochemistry and seismic processing labs were



Skip Nelson and M.S. candidate Debbie Opokuah at a poster session during the Denver Geological Society of America Meeting in October.

Photo by Dave Malone.

set up this past year and are in use for faculty and student research.

G.A. stipends: Our half-time G.A. stipend now is \$1,067 per month, which is among the highest rates at Illinois State for M.S. students. This reflects an increase of more than 35 percent in the last two years.

Curriculum: A major weakness of the curriculum identified in the last program review was insufficient field experience. Two existing courses were modified to address that weakness. Each course is required of all graduate students. "GEO 488.03-Geochemical Field and Laboratory Methods" spends about half of its meetings in the field. "GEO 456-Problems of Environmental Geology,"

which is run jointly with faculty and students at Northern Illinois University, was transformed into a field course (see related article). It now is offered in the summer, is four weeks long, and addresses a wide variety of environmental and hydrogeology issues.

Graduates of the Hydrogeology Program in 2002 were Brad Renwick, Alan Brown, Dibi Tripathy, Jeff Ogden, Kara Hart, Eric Wright, and Chris Delany-Barmann.



Photo by Dave Malone.

Graduate Students Tim Sickbert, right-center, and Hari Baskar, far right, look for fossils with Principles of Geology students along the Vermillion River in October.

Alumni news

Here are the happenings of some of your fellow alumni. Like last year, this listing is heavily skewed to our recent graduates. This certainly is not by design. I encourage all of you, particularly those of you who graduated in the 1970s and 1980s, to drop us a line and let us know what you are up to.

Joan Jach '99 and **Jason Thomason M.S. '00** are engaged to be married in February 2003.

Congratulations! Both are pursuing advanced degrees at Iowa State University.

Brad Renwick M.S. '02 has joined **Beau Harp '97, M.S. '02** as a hydrogeologist at Patrick Engineering in Lisle.

Erik Borling '99 is living in Flagstaff, Arizona, with his new wife, Annie. Erik is working for an engineering firm called Shephard-Wesnitzer, Inc. doing drafting and design. **Aaron Borling '99** is working for cross-town rival Arizona Engineering as a surveyor. Aaron is planning to be married like his cousin Eric.

Baine Foehr '97 has joined the graduate program in environmental technology at Arizona State University. He has been working as an Environmental Health and Safety manager in Arizona for the past several years.

Brad Sleeth '95 has completed his M.S. degree at Northern Illinois University and is seeking a job as a high school or junior college science instructor.

Craig Allen '99 is a client sales representative for Mid-America Drilling Services Inc. in Naperville.

Dave Kaplan '00 is working as an environmental geologist for Handex Corporation in Florida.

The word is that he'll be joined shortly by sister-in-law **Heather (Miller) Perry '01**.

Casey Fennessey '99 is working as a chemist for Schwarz Pharma in Indiana.

Tom Shickel '92 has been working as an environmental geologist in Nebraska, and hopes to return to Illinois State University or the University of Illinois to pursue an M.S. degree.

Courtney Brooks M.S. '99 is rumored to be returning from Kenya to open a consulting firm in Reno, Nevada.

Paul Lee M.S. '97 is still working at State Farm in Bloomington in loss prevention, specializing in environmental and compliance issues.

Connie Holverson '01 and **Jennifer Murphey, Bryce Willems, Dave Carstens, Diane Lamb, Mindy Buyck, and Tim Walls, all '02**, joined the Hydrogeology graduate program this past year.

Thomas J. Feehan '94, M.S. '96 is working as a geologist for Water Management Consultants in Elko, Nevada.

Jim Kipp '79 had dinner with Skip Nelson and Dave Malone at the Lexington, Kentucky, GSA meeting in March. Jim is an assistant director for the Kentucky Water Research Center in Lexington. **Ed Smith '85** is in the groundwater section at the Illinois State Geological Survey in Champaign-Urbana, and he joined them for dinner as well.

Paul Wang '95 works for and helps manage Wang Engineering in Addison.

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