

**University of Illinois
at Urbana-Champaign**

GEOSCIENCES



**Department of Geology
Alumni Newsletter
Spring 1996**

GeoSciences

Department of Geology Alumni Newsletter Spring 1996

About Our Cover:

A sample of pseudotachylyte magnified 500 times reveals tiny crystals called microlites that grow within the melt at approximately 800 degrees Celcius. Under the right conditions, pseudotachylyte is formed along the actual sliding surface of a fault where an earthquake has occurred.

From the Department Head 2

GeoNews

Texas-Louisiana Alumni Fellowship reaches goal 3

Students honored with awards 3

Scott accepts Department's Alumni Achievement Award 4

New computer expert joins Department 4

Friends tout Hilt Johnson's retirement 5

Profiles

Rónadh Cox - faculty 6

Eileen Herrstrom - faculty 8

Jerry Magloughlin - faculty 11

Mindy Tidrick - student 14

Alumni News 16

Let's Keep in Touch 19

GeoSciences is the alumni newsletter for the Department of Geology, University of Illinois at Urbana-Champaign. It is published in September and March of each year.

Staff Department Head: R. James Kirkpatrick; Asst. to the Head: Peter A. Michalove; Editor: Vanessa Faurie; Production: LAS Office of Publications; Administrative Secretary: Pat Lane

From the Department Head




Dear Fellow Alumni:

Like the last few years, this one is turning out to be both busy and full of change. Eileen Herrstrom, our new laboratory teaching specialist, is doing an outstanding job with our expanding enrollments in introductory courses. Our two visiting assistant professors, Jerry Magloughlin and Rónadh Cox, have contributed significantly to introductory courses and by reorganizing our courses in sedimentary geology and mineralogy. You will find features on all three in this issue.

We are also very excited about the imminent arrival of Stephen Hurst, who will be a research programmer. Steve is a geologist by training and comes to us from Duke University, where he was a research assistant professor. He will help us develop on-line teaching modules such as virtual field trips and computer simulations of geological processes. Interactive software will be a major aspect of geological education in the coming years. We already have extensive capabilities in this area, and with Steve's help, we plan to be leaders in the field. Steve also will be responsible for maintaining and upgrading the Departmental computer facilities and for maintaining our home page on the World Wide Web. Many of you have already viewed our home page, and we have received class notes, alumni comments and queries from prospective students at the site. Visit us at <http://www.geology.uiuc.edu/>.

This issue of GeoSciences also contains an article about the very successful fellowship endowment being put together by Illinois Geology alumni in Texas and Louisiana. I want to take this opportunity to thank Jack Threet and Patricia Santogrossi, who spearheaded this effort, and all the alumni who are contributing.

As always, we are glad to hear from you. Let us know your thoughts about the Department and keep us informed about news in your life. If you are on campus, be sure to stop by to see us.


R. James Kirkpatrick
Department Head

Texas-Louisiana Alumni Fellowship reaches goal

The Texas-Louisiana Alumni Fellowship for the Department of Geology has been deemed a success for meeting a goal of \$300,000 to be placed in an endowment that will generate a permanent stream of income to support a graduate student fellowship.

Jack Threet, B.A. '51, and **Patricia Santogrossi**, B.S. '74, M.S. '77, two members of the Geo-Thrust Committee, spearheaded this plan in conjunction with the University's ongoing \$1 billion capital campaign.

Alumni in Texas and Louisiana were contacted to pledge contributions over a period of four years (1995-98). Pledges of close to \$150,000 have been received to date, with a matched \$150,000 coming from Threet himself.

Each year, 5 percent of the earnings on the principal will be withdrawn to provide the fellow-

ship to an outstanding graduate student. Income earned in excess of 5 percent of the principal each year will be reinvested to increase the income base and allow for an increase in the dollar amount of the fellowship in future years in response to inflation.

In a letter that was sent to alumni in both states, Threet and Santogrossi said, "... support for students is one of the most effective forms of support we alumni can provide."

It is hoped that the project will become a model for additional group gifts from Illinois Geology alumni in other parts of the country.

Lester Clutter, B.S. '48, M.S. '51, for example, is organizing a similar project in Oklahoma and Kansas. The goal for alumni in these states is to raise \$20,000 to support an annual Geology class field trip during Spring Break.

Students honored with awards

The Structural Geology and Tectonics Division of the Geological Society of America presented its annual outstanding student research award to graduate teaching assistant **Timothy Paulsen** for "The Structural Geometry, Kinematics, Strain and Tectonic Significance of the Mount Raymond Thrust: A Major Transverse Zone at the Southern Margin of the Wyoming Salient, Sevier Orogenic Belt, Utah." His adviser is Professor Stephen Marshak.

John Werner received the University of Illinois Graduate College's On-Campus Dissertation Research Grant. He is working with Professor Dan Blake.

Mindy Tidrick was named the Department's Outstanding Teaching Assistant for the Spring 1995 semester.

Crystal Lovett, a junior from Stafford, Virginia, received the American Geological Institute's Minority Geoscience Scholarship (AGI-MPP) for the 1995-96 academic year. Award recipients must be geoscience majors who are U.S. citizens and members of ethnic minority groups that are underrepresented in the geosciences. Individual scholars are selected by the AGI-MPP Advisory Committee because the student appears to have particular potential for success in the geoscience profession. The awards are supported by funding from the National Science Foundation and by contributions from geoscience corporations, professional societies and individuals.

Donors

Bill Allen	Christine Griffith	James L. Mason Jr.
Robert S. Barnard	James Granath	Arthur Preston
Eugene W. Borden	Stuart Grossman	Corrine Pearson-
Michael Bourque	Peter Hetherington	Krisa
Joseph Boudreaux	Lee M. Hirsch	Suzanne Russell
Glen Buckley	Jim Kirkpatrick	Patricia Santogrossi
Richard J. Cassin	James Klima	John Shaw
John Clay	Robert F. Kraye	Charles Simonds
Susan E. Collins	Scott Krueger	William Soderman
Kenneth Feldman	Stephen Laubach	Linda Tollefson
Jeff Fritz	Walter Locker	Jack Threet
Murry Gerber	John Marks	Anonymous
	Kathy Marsaglia	



Scott accepts Geology Alumni Achievement Award

As announced in the Fall 1995 issue of *GeoSciences*, Professor Emeritus **Harold W. Scott, A.B. '29 (LAS), A.M. '31**, received the 1995 Geology Alumni Achievement Award.

The presentation was made at a Nov. 3 ceremony in his Urbana home by GeoThrust Committee chair **Haydn H. Murray, B.S. '48, M.S. '50, Ph.D. '51**, Department Head **Jim Kirkpatrick**, Assistant to the Head **Peter Michalove** and Administrative Secretary **Pat Lane**. Some of Scott's family members also were present for the event.

Correction

In a photograph on page 4 of the Fall 1995 *GeoSciences*, Department staff clerk **Murle Edwards** presented an award from the support staff to research assistant **Dave Finkelshtein**, who was misidentified.

Harold Scott (seated) receives the Geology Alumni Achievement Award for 1995 from Haydn Murray.

The GeoThrust Committee and the Department Advisory Committee selected Scott to receive the second of a now annual award honoring alumni from the Department who have excelled in their professional, academic or research achievement or who have been of great service to the Department.

Scott was associated with the Department for 30 years (1937-67) and then headed the Geology Department at Michigan State University for six years. From the discovery of conodont assemblages to petroleum reserves in Libya, Scott has enjoyed a long and distinguished career as a geologist, as well as an educator.

New computer expert joins Department

Steve Hurst, formerly of Duke University, has joined the staff as a research programmer to serve as the resident systems analyst for the Department's computers.

He has extensive experience doing a variety of geological research and developing computer materials for teaching geology. His demonstration for the job opening featured a virtual field trip to Hawaii, complete with a look inside a volcano, a person taking a rock sample, and focusing in closely on a piece of lava. Hurst will also develop on-line teaching materials and work with Associate Head **Albert Hsui** on the continuing enhancement of the Department's home page on the World Wide Web.

Check It Out!

<http://www.geology.uiuc.edu/>



Christmas Party

The holiday season was celebrated in the Geology Department's Wanless Room (the student lounge) December 8 with plenty of food and fun, including the good-natured presentation of several gag awards to individuals.





Top: Jim Kirkpatrick makes the presentation of a camping stove to the Johnsons; below: Joyce and Hilt Johnson; lower right: Ardeth Hansel (left) of the Illinois State Geological Survey collaborates with Johnson on some research projects.

Friends tout Hilt Johnson's retirement

More than 60 friends and colleagues gathered Aug. 31 in the elegant setting of the Festival Theatre lobby in the Krannert Center for the Performing Arts to pay tribute to Professor and former Associate Head and Acting Head **Hilt Johnson**, M.S. '61, Ph.D. '62, upon his retirement from the Geology Department.

Joined by his wife, Joyce, Johnson was the guest of honor for dinner, with remarks by research collaborator **Ardeth Hansel**, Ph.D. '80 (LAS), Professor Tom Anderson and Department Head Jim Kirkpatrick. Several

gifts also were presented, including a world atlas and a camping stove.

The Johnsons plan to do some traveling, however, Johnson still has a couple of students in the Department with whom he is continuing to work. So Johnson still has an office in the Natural History Building and has remained involved in the Department.

Sept. 21

ILLINOIS VS. AKRON
Mark Your Calendar

Attend a Geology Alumni Party on the Urbana campus during the football weekend of Sept. 21, 1996, when Illinois takes on Akron. Watch your mail for more details.

Profiles

Places to go, things to do: Rōnadh Cox

The world is a small but fascinating place to Rōnadh Cox.

She has Irish citizenship, but is a permanent resident of the United States. She studied in Ireland, then Louisiana and then Stanford. She did a postdoc in Africa with research in Madagascar, and now finds herself a visiting assistant professor at the University of Illinois, teaching “Earth and the Environment,” “History of Life,” sedimentology and field geology.

It’s been nice how geology has allowed her to make her way around the globe. It’s no wonder her research interests focus on “global change in sediment composition and the interaction of tectonic and sedimentary processes on a regional and global scale.”

As excited and amazed as she is about the geological world around her, it is a bit surprising to learn Cox started out her college education at University College Dublin in Ireland studying zoology.

“When I got to college,” she said, “I found that most of the zoology that was being done at the university was very biochemical and lab-based.”

The university system in Ireland differs from that of the United States. Cox had a science-

oriented curriculum from which to choose her initial classes. Not liking physics, she took geology, biology, mathematics and chemis-

“When you put Africa and India back together again, there’s a gap. And Madagascar fits somewhere in there, but we don’t exactly know how.”

try the first year. By the end of her second year, she had to qualify for what would be her honors major. She qualified in geology and pursued it from then on.

“I find it a fascinating subject. Also, geology was a way to be outdoors, deal with exciting concepts,” she said and then laughed. “You know, you get to take a honking great big sledgehammer and beat on a boulder. It’s fun. What can I say? I get to spend a significant portion of my life outdoors and get paid for it.

“Rocks are interesting. We’re talking about dealing with why the Earth is here, why that mountain is there. These are very fundamental ideas and also very exciting concepts, so they’re very intriguing to work with.”

She wanted to work on a Ph.D. but decided not to do it in

Ireland. She went to Louisiana and worked with Donald R. Lowe “just to be somewhere different.” When he moved to Stanford University, Cox transferred there and completed her dissertation, “Long-term recycling and evolution of clastic sediments, southwestern United States,” in 1993.

She and her American husband and fellow geologist, Mark Brandriss, both went to South Africa to do postdoctoral research soon after. Cox was a researcher for the next two years at Rand Afrikaans University in Johannesburg.

Her research project took her to central Madagascar to analyze the sedimentology,

tectonics and geochronology of a Proterozoic sedimentary basin and its relationship to the assembly of the supercontinent Gondwana.

“One of the reasons we’re interested in working on this is nobody knows exactly how old the (Proterozoic sediments) are,” Cox said, adding that they’ve narrowed it down to a billion-year time frame—somewhere between 700 million years old and 1,800 million years old.

“We’re fairly sure that these are marine sediments, part of a vanished ocean, that we’re looking at here. When were they deposited? Were they deposited near a continent? If so, where was the continent and what kind of continent was it?

“When you put Africa and India back together again,” she



Cox has created a Web site for the "History of Life" course (left). Spike keeps company with Cox and the rest of the Department (right).

added, "there's a gap. And Madagascar fits somewhere in there, but we don't exactly know how. Figuring out what these rocks are and then trying to relate them to their equivalent rocks that must be on mainland Africa will help us narrow that down a bit."

In the two years she spent in South Africa, five months were spent doing the field work in Madagascar.

"Madagascar in general and most of East Africa are not very well understood geologically," Cox said. "One reason is, the geology is very complex; these rocks are very deformed. All of these things have been folded and broken up. A second reason is that there aren't the resources, the education, the training. In these countries, there aren't as many people working on the rocks, so they're not as well studied. We're not going to be able to say next year, 'Yes, this is the definitive answer.' But we're getting more information. People in Africa are getting more information. And, hopefully, we'll eventually converge on a solution."

The researchers use a four-wheel-drive vehicle to help navi-

gate the typically unpaved, ungraded, rut-filled roads. And when that won't work, they travel by foot or even oxdrawn cart.

The time she spent in Africa was exciting and memorable. Cox even attended President Nelson Mandela's inauguration and walked around to various polling stations during the election. "It was a great time to be there," she said. "It was like being present at the birth of a whole new country."

When the postdocs were coming to an end, Cox and her husband decided not to stay in the country beyond that time because "it just wasn't home." From a continental point of view, they wanted to either work in Europe or North America to be closer to family. Cox accepted the position at Illinois, and Brandriss took an offer from the University of Michigan.

"Although they're not in the same place," Cox said of their rationale, "we decided to take them (the positions) because that got us onto the same continent."

The couple see each other every other weekend, and Cox has the added companionship of Spike, the new Geology dog who

has learned the routine, such as where to go for dog biscuit hand-outs, set by her predecessor, Lana. Lana, who was Professor Steve Altaner's faithful friend, became very ill with cancer and died shortly before Christmas last year.

With no husband in town and no television in her home, Cox spends some 12 to 15 hours a day working, mostly on her courses. The fall semester passed at a hectic pace from the time Cox arrived in Urbana-Champaign 10 days before classes started. This semester has the added task of taking a group of students to California for a field trip over Spring Break.

For Cox, though, teaching, particularly the undergraduate-level courses, reminds her of the reasons why she got into geology in the first place.

"The research I do is interesting, but it's basic research," she explained. "It's necessary to increase our body of knowledge about how the Earth got put together, but it's not of immediate benefit to people or society."

"So one of the things that's nice about teaching is that you actually feel like you're doing

something useful. You're passing knowledge on to students and serving a purpose. I'm not just sitting here in an ivory tower getting all wrapped up in a lump of rocks in the middle of Madagascar. I really find it (teaching) rewarding; you get real feedback from students when you see their eyes light up and they say 'Oh, hey, that's pretty cool.'"

One of the projects Cox is working on to continue to pique the interest of her students is the development of a web site for Geology 143 ("History of Life") on the internet. She incorporates e-mail, resources, lecture texts, reading assignments and home pages for herself and the teaching assistants.

"The people who got my interest going as a student were always the ones who were most excited by what they were trying to impart and who seemed to be fired up by the subject," Cox said. "And they got me fired up. I am fundamentally interested in this stuff, so I try to convey that when I'm teaching.

"Especially with (a course) like the "History of Life"—I mean, these are just mind-boggling concepts. And I try and get a bit of that across. This is amazing stuff, and I want to pass it on because I think you should think it's amazing, too."

This type of academic position, that allows for a lot of teaching as well as research, would be an ideal foundation for Cox's future home base, which she envisions as including her husband, a house, a horse, Spike, of course, and the opportunity to continue her work in Madagascar and elsewhere in the world.

New instructor thrives by teaching undergrads: Eileen Herrstrom

Growing up in the Quad Cities area, Eileen Herrstrom always heard a lot about geology during the family vacations because her father was a geologist. Sometimes she also got to go along on field

trips. But when she went to college, she did not intend to major in the field herself. The first geology course she took at Augustana College in Rock Island was simply to fulfill a science requirement. Or so she thought.

"This stuff my dad had been talking about all these years was really pretty interesting so I ended up as an undergraduate with a double major in geology and mathematics."

"I discovered when I did that—hey, this stuff my dad had been talking about all these years was really pretty interesting," Herrstrom said. "And so I ended up as an undergraduate with a double major in geology and mathematics and went on from there."

Where she went, after receiving her bachelor's degree in 1977, was to Stanford University for a master's in earth science. After completing that in 1979, she married Illinois graduate Dale Herrstrom and spent the next 10 years raising her two daughters and teaching part time in the math and geology departments back at Augustana.

"When the youngest (daughter) reached first grade, I decided the time was right for me to go back to school and do my Ph.D.," Herrstrom said.

She began commuting back and forth from Rock Island to the University of Iowa in Iowa City. She was also a geology instructor at Black Hawk College in Moline until this past fall when she became the newest permanent addition to the UIUC Geology Department faculty as a teaching laboratory specialist. Herrstrom coordinates the teaching assistant program and teaches undergraduate discussion sections and labs of the introductory courses for majors and non-majors.

Although the work has slowed some, the Ph.D. is down to

the writing of the dissertation, the topic of which is igneous petrology. Herrstrom is looking at the geochemistry of volcanic rocks in Central America and the compositions of the specific elements that are part of the uranium series decay chain.

"You start with uranium—a radioactive element—and it eventually decays down to lead," she explained. "In between, there are a lot of intermediate products with varying half-lives and with different sorts of geochemical behavior. So if you look at the relationships among the different elements within the decay chain, you can say something about what sorts of materials go into making up those lavas and how long it might take between, say, the melting of magma deep beneath the surface and eruption at the surface."

This work has been a good way for Herrstrom to combine her geology and mathematics backgrounds. Plus, she said, "there's just something fascinating about volcanoes."

Although she did go to Costa Rica and Nicaragua in 1992 to collect samples, her research has been primarily lab- and computer-based. Most samples she has analyzed were collected by others and already analyzed for major and trace elements, then she analyzes them for the uranium series elements.

The idea of using uranium series information is relatively recent, she said, and only dates back to the early 1980s. A lot of work had been done on mid-ocean ridges, but extending it to subduction zones was a sort of branching out.

"That's not to say that there wasn't and isn't any information on subduction zone lavas," Herrstrom said. "There certainly is.

mathematical models for fluid dynamics. Those studies suggest the melts move through a network of porous spaces.

"So it essentially would be like squeezing water out of a sponge," she said. "The mantle is under pressure; the melt moves through it. But that seems to me to be, at least, not the total story. It seems to be a process that would take more time than the uranium



Herrstrom uses mineral samples in her classroom to demonstrate physical properties geologists use to classify and identify minerals. For example, pieces of calcite show contrasting crystal and cleavage forms, and specimens of galena and quartz have



But the extensive coverage that I have now in Central America is unusual as far as uranium series data are concerned."

One of Herrstrom's main interests is trying to understand how melts move in the mantle. Most of the work that's been done focuses on mid-ocean ridges and oceanic islands and is based on

series data suggest is actually the case. The data we have from Central America suggest that this entire process is relatively quick—perhaps a matter of 10,000 years from melting deep in the mantle to eruption at the surface. And if that's true, then porous flow is

probably not the entire story because it would take too long. There are other models which involve focusing flow into more porous areas, or variations of that in which melt would actually flow through cracks in the mantle.

"So I'm hoping that I will be able to at least distinguish likelihoods among these various possibilities."

The other major component of Herrstrom's research is understanding the varying mantle compositions along the relatively short area of Central America.

"What it looks like is that we have underneath Nicaragua one kind of mantle that seems to have been affected by subduction for a long time," she said, "and a different mantle composition underneath Costa Rica that seems not to have been affected by that long history of subduction. A single volcanic arc is generally more homogenous than what we found here (in Central America)."

As technical as geochemistry can be for the nonscientist, Herrstrom has a way of explaining her research in easily understandable concepts. That stands her in good stead for her teaching interests, which center around undergraduate instruction.

"What I primarily want to do," she said, "and the reason I accepted this position is to teach and, in particular, to teach undergraduates rather than graduates. I would like also to branch out into

public outreach. It's really a necessary thing to do for a lot of reasons. We have many decisions to make as a society about how to spend a limited amount of funds. And when the question has to do with geological phenomena, then we need to have people who know something about them."

One way she can accomplish this goal is by teaching the non-majors. That's not always a popu-

"We have many decisions to make as a society about how to spend a limited amount of funds. And when the question has to do with geological phenomena, then we need to have people who know something about them."

lar assignment for faculty because the students aren't always the most receptive and enthusiastic learners. But Herrstrom adjusts.

"For one thing, you can't be nearly as mathematical with the non-majors," she said. "I think, too, you have to be careful not to use too much jargon.

"Teaching non-majors is kind of like translating some of the more technical language, and you lose something in that. But I think you can gain as well. You lose some precision and accuracy, but you gain in being able to talk to a wider audience."

Part of Herrstrom's teaching approach is to instill student inter-

est by showing her own interest. "In fact, I have a tendency to get excited and start talking too quickly, and I have to stop and slow myself down."

The hectic pace of her first semester at Illinois has caused her to try and allot her time more carefully now. Most of her teaching takes place three days of the week in order to make some time for working on her dissertation.

Realistically, she hopes to be close to the end of it by the end of the semester.

Although her appointment did not include a research requirement, Herrstrom does not want to put research behind her altogether. In fact, while she was surprised to land at a large university, given her strong interest in undergraduate teaching, she has found that the U. of I. can fulfill

her academic goals while offering the added benefit of doing so within a larger research community. "As far as I'm concerned," she said, "it's the best of both worlds."

Her dissertation work is satisfying as well as specialized, but she realizes she can't share such technical and complex work with a wide audience. In teaching undergraduates, she can reach that larger group.

"Besides, there's always the possibility that someone else will follow the same path I did," Herrstrom said and laughed. "They'll register for Geology 100 to fulfill a requirement and think, 'Hey, this stuff is pretty neat,' and we'll end up with another major."

A variety of geology gets his full attention: Jerry Magloughlin

"I call myself a structural petrologist, actually," said Jerry Magloughlin, a new visiting assistant professor in the Department this academic year. "That's unusual.

summer camp. He remembers taking one of those interest surveys in school, and he rated high in adventure, science and outdoor activities.

"I basically sat back and (asked myself) what career would keep me happy for the rest of my life, hold my interest, allow me to travel and be outdoors and work with people and teach."

Everybody uses other techniques to an extent, but I try to be as broad as possible."

His main interests are structural geology, petrology and geochronology—any one of which would keep a person busy full time. That might explain why Magloughlin jokes that he's always behind in his reading. He really devotes a lot of time to a variety of interests in geology, and he's very driven.

While growing up in Minnesota, he said he never even saw an outcrop until he was about 14 years old and on a trip to Duluth. Yet he's known all along since high school that he was going to be a geologist, and he was fortunate enough that his school offered geology classes and a

"So I basically sat back and (asked myself) what career would keep me happy for the rest of my life, hold my interest, allow me to travel and be outdoors and work with people and teach," he said. "Astronomy was another possibility, but jobs there are few and far between.

"I love the whole field of geology, but when I hit my first class in structural geology, somehow everything clicked. It combined all my interests. I just knew it."

Magloughlin received his bachelor's degree from the University of Minnesota-Duluth in 1983, and a master's from the University of Washington in Seattle in 1986.

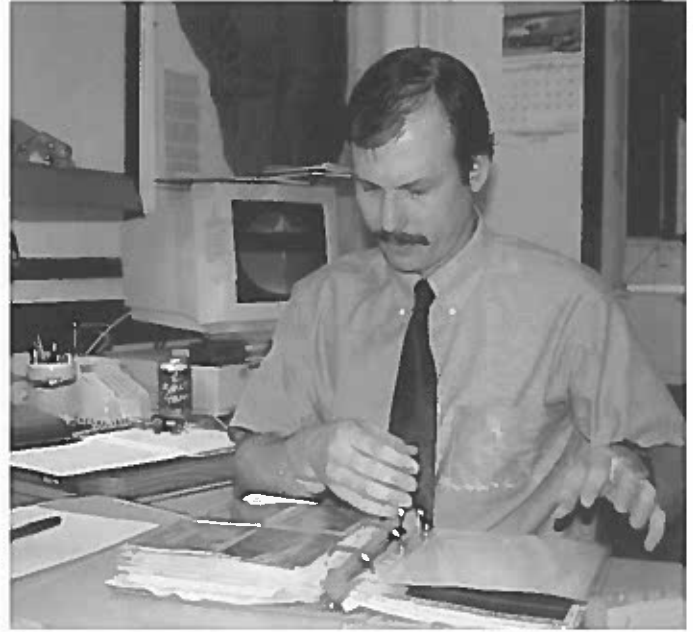
"I didn't have a good feel for graduate-level research at first," he said. "So I felt a little guilty after about a year and I hadn't really gotten very far. Then when I did get going, all of a sudden I just exploded and wrote this huge master's thesis in about a year and a half."

To demonstrate, he pulled the thick volume of his thesis from a crowded shelf in his Department office, and it landed with a thud on his desk.

While in Washington, Magloughlin was struck with the beauty and geologic variety of the Cascade Mountains, and the area became a major site for his subsequent research, including his Ph.D., which he received through the University of Minnesota-Minneapolis in 1993.

"For my Ph.D. I focused on the whole terrane or structural block," he said. "I did a structural and tectonic analysis of the terrane for the first part of my Ph.D., and then a new faculty member, Larry Edwards, showed up and I pitched in with him for the last part of my Ph.D., which ended up taking another two or three years. So I wound up doing a very long Ph.D."

That's understandable considering his research interests: the evolution of mountain belts and high-strain zones in the Earth's crust in the North Cascade Mountains and in the Grenville Province of eastern Canada; mapping, structural geology, metamorphic petrology and geochemistry of metamorphic rocks; plutonic igneous rocks; and ductile and brittle deformed fault rocks.



The dark bands are pseudotachylyte veins, rock that has melted when a fault slips fast enough under the right circumstances. Magloughlin has collected data on numerous samples found within the North Cascades.

His work brought him then to the University of Michigan for a two year stint as a National Science Foundation postdoctoral researcher. His interests expanded even more as he learned how to use several "new, fancy toys." He married wife Linda by this time, as well. When the postdoc was

coming to an end, Magloughlin applied and was invited to the University of Illinois.

"My position here is nice," he said. "I was hired specifically to teach classes. But at the same time, everyone's been very supportive about letting me continue to do my research. I have a lab downstairs. I continue to work up at Michigan a little bit and what-

ever else I want to pursue. I now have a master's student working with me and two undergraduates. So it's been really nice."

The first semester was pretty hectic, too. When he arrived on campus in August, he was in the classroom a week later, then left for a conference he co-organized in September and was gone for a week.

The conference, held in Leavenworth, Washington, and attended by 80 scientists from around the world, was a major undertaking by Magloughlin and two colleagues. It centered around fault zones and was a natural next step following a special issue of *Technophysics* that was published in 1992 called "Frictional Melting

Processes and Products in Geological Materials" by Magloughlin and John Spray from the University of New Brunswick.

Within the North Cascades, Magloughlin said he has found one of the best localities of pseudotachylytes, a rock specifically formed in a fault. Its distribution, size and quality have turned that part of the mountains into a real laboratory for him.

"In fault zones, what we see at the surface where the ground breaks and a house falls into a crack—that's really nothing as far as the significance of the fault is concerned," he said. "That's just a little surface disruption. Where the real action is taking place is usually down a few miles or even 10-15 miles down. That's where rock all of a sudden decides to 'go' because of the stresses that have built up. That's the really exciting location.

"Under the right circumstances, faults will slip fast enough to cause the rock to heat up and melt. The rock that's produced is called pseudotachylyte. It's often well-preserved through long periods of geologic time. And the exciting significance is that it is direct evidence of an ancient earthquake. I like to call it a fossilized earthquake."

Another exciting accomplishment is that Magloughlin has managed to date the rocks accurately using the ^{40}Ar - ^{39}Ar technique, which allows one to work on milligram-scale samples. It is clean and precise and, with a number of corrections, it is possi-

ble to calculate a date.

As a result, he said, "we can show that central Washington was struck by a series of earthquakes around 55 million years ago, not long after the dinosaurs died off. It was a very seismically active area."

But Magloughlin doesn't remain glued to his research. He's very serious about his interest in teaching. Last fall he taught the mineralogy lecture and lab sections. This semester, it's an honors introductory course and, in fulfill-

"I think it's essential to keep going with the research. It keeps you up to date, it keeps you excited about stuff."

ment of a longtime goal, a planetary geology course called "Geology of the Planets."

"We have neat setups here," he said. "I'm impressed by the audio visual setups in the classrooms. For the planetary geology class, for example, I'm bringing in meteorites to show, video discs and slide collections. I'd like to make it very visual. The solar system is a tremendously beautiful place."

Teaching each level of student, from non-majors to majors to graduate students, has its appeal to Magloughlin, but they remain very different. The honors introductory course allows him to

be more rigorous and mathematical. The small, more diverse class has an atmosphere that encourages questions and discussion. "I have great fun with the intro classes, and I like to be very enthusiastic.

"For grad students, you're preparing them for a career," he said. "For majors, it's a little uncertain. About 70 percent of science majors wind up doing something in the science field. For the intro students, it's fun to just expose them to a new area of the world around them."

Magloughlin's world right now mostly comprises work because he enjoys it. He also believes in staying competitive, whether in his research or on a tennis court for fun (he was on the varsity tennis team in college). The biggest problem is having too many things going at

once. Perhaps there is a connection between his chock-full work schedule and the numerous, empty Diet Mountain Dew cans that serve as makeshift shelf supports in his office. But don't look for any paring back soon.

"I think it's essential to keep going with the research," he said. "It keeps you up to date, it keeps you excited about stuff. I think it's harder to be a really enthusiastic instructor and continue to have fun in the field if you don't keep up to date and if you don't have your own interests to pursue."

Following her instincts led the way to geology: Mindy Tidrick

By John Spizzirri



Mindy Tidrick surveying the dead zone atop the research site at Elizabeth Mine, Vermont. Shown during the fall dry season, over one quarter mile square mile of dead landscape covers the surrounding tailings pile. During spring rain events this is an acidic swamp.

In the hands of Walt Disney, Igor Stravinsky's *The Rite of Spring* becomes a wild dance through eons and epochs and eras. It is a movement of stellar assembly and terrestrial upheaval, an ode to birth and death and regeneration.

This particular combination of music and animation creates the evolution scene from Disney's masterpiece, *Fantasia*. With its synchronized volcanic eruptions and final scene of dinosaurs plodding toward extinction, what child would not be moved to wonder and awe?

"I love that scene," says Mindy Tidrick. "It triggered all sorts of science projects throughout elementary school and junior high on rocks, minerals, earth processes and dinosaurs."

Since that imaginative romp through the geologic past, Tidrick has followed a roundabout path that eventually led her to the University of Illinois and toward a master's degree in geochemistry.

Born in southern Indiana, Tidrick's family wound up in Chelsea, Michigan, where she spent most of her childhood years honing her interest in and knowl-

edge of fossils and rocks. But by the time she got to high school, the pursuit of a career in the earth sciences became less enticing as it seemed less viable as a profession.

"I did a report for some speech class or something where you researched a career you were interested in," she recalls. "I looked at paleontologists, and the number hired was in the single or barely double digits, so I was really disappointed. At the time, I didn't think of geology in terms of geochemistry or any of the different applications associated with it."

Tidrick entered the University of Notre Dame as a chemical engineer in 1989, but by the end of her sophomore year had rethought her career direction and found a home in a multidisciplinary major called Pre-professional Science Business. Essentially a hospital administrator's prep program, she was still able to focus on her science interests and transfer her engineering and science credits.

Along with a series of first-year, introductory business courses, she was required to take introductory courses in the major science disciplines—physics, chemistry, etc. Her first semester found her comfortably grounded in the course "Historical Geology."

"I loved it," she exclaims.

In the course of her science studies at Notre Dame, she found an "unofficial mentor" in the figure of Dr. J. Keith Rigby Jr., with whom she took as many classes as possible. Tidrick's dedication to both mentor and study path paid off during her senior year, when Rigby offered her the opportunity to help conduct paleontological research in China.

By January 1993, Tidrick found herself in Guangdong, China's southernmost province, formerly Old Canton Province. There, Rigby was concentrating his research on the Cretaceous-Tertiary (KT) boundary. This was the group's first trip to the region and much of the time was spent building diplomatic and scientific relations.

Chopstick factory tours and diplomatic dinners aside, the group did find an area near the KT boundary known for a set of dinosaur footprints and some egg nests. By the time they left, they estimated that the expanse of footprints was larger than had been expected, reports Tidrick.

They further established that the egg nests were part of a breeding ground for numerous dinosaur species. This area still holds great research possibilities, as do other areas of southern China, she notes. (Researchers working in the Gobi Desert recently made headlines after the remains of a brooding Oviraptor were discovered there, further supporting a dinosaur-bird genealogy.)

Tidrick was engaged to be married during her senior year at Notre Dame and plans for a master's degree were to be placed on hold while she and her fiancé worked to raise money for grad school.

"But that (trip) basically sealed it. I got to see all the different aspects of geology in action. And Dr. Rigby took me by the shoulders, literally shook me and

said, 'You will be an idiot if you don't go to grad school now.'"

Two weeks after returning from China, Tidrick took the GRE on standby, applied late to UIUC and was accepted for the fall semester of 1993. Now finished with her coursework, she is currently working on her thesis.

A low-temperature geochemist, she looks at acid mine drainage and its impact on the environment. Waters that drain

"I love working with people who have a childhood interest in geology. The enthusiasm may be buried, but once that interest is ignited, they're like big, very interested school children and they'll learn."

through old mine shafts or percolate through left over tailings can acidify water, creating an excess of heavy metals like lead and zinc that may eventually end up in water supplies. Water samples taken near the Elizabeth Mine in South Strafford, Vermont, will help Tidrick create a computer model of the chemistry of the acid mine drainage there.

Tidrick has worked as a teaching assistant every year since she arrived at the University, in part to pay for tuition, but it seems equally for the enjoyment she gets out of it. Most recently, she helped teach an introductory hydrogeology course.

"I had fun introducing that to a lot of people. I like the application of science, and that's why I like teaching," says Tidrick.

"I like teaching people what geologists and other scientists do and also how they can apply it. And I love working with people who have a childhood interest in geology. The enthusiasm may be buried, but once that interest is ignited, they're like big, very interested school children and they'll learn.

"But if you do it wrong, you totally lose the whole group," she warns. "It's like a one-room schoolhouse. You have engineers who are in their senior year, itching to get out, but they want to take this intro to geology course so they'll understand the geo terminology. Then you have the first-year freshmen who are taking this

course just because they like looking at rocks. There's such a dichotomy of skills in the classroom that it makes teaching a real challenge and makes it fun."

Apparently, her enthusiasm is catchy. This past spring Tidrick received the Department's Outstanding Teaching Assistant Award, and she is currently a Geology Department candidate for the Luckman Award, annually presented to only 10 teaching assistants across the campus. The Department has a very good run for the Luckman, she says. The last two nominees have won the award.

Alumni News

Obituaries

Robert H. Kennedy, B.S. '41, died August 16, 1995, at the age of 79. He is survived by his wife, Arlene, of Ogden Dunes, Indiana.

Dorothy J. Gore, M.S. '52, of Fort Worth, Texas, died August 5, 1994.

Jurg W. Meyer, Ph.D. '58, died July 21, 1995.

Robert N. Farvolden, Ph.D. '63, former Department faculty member, died September 13, 1995. He was Canada's first professor of hydrogeology at the University of Western Ontario. He was former chair of the Department of Earth Sciences and former dean of the Faculty of Science at the University of Waterloo in Ontario, where he also established the first major program of teaching and groundwater research in

Canada. Farvolden was a consultant to governments in Central and South America and Asia. At the time of his death, he was professor emeritus and a member of the Atomic Energy Control Board of Canada. He recently had received the first President's Award from the International Association of Hydrogeologists.

Donations may be made to the R.N. Farvolden Scholarship for Graduate Students, c/o Alumni Office, South Campus Hall, University of Waterloo, Waterloo, Ontario, N2L 3G1, or through the Thomas Funeral Home, 244 Victoria St., E., P.O. Box 309, Alliston, Ontario, L9R 1V6, to a fund which will be donated to The Tree of Life at the London Regional Cancer Clinic, in the family's name.

Richard M. Winar, B.S. '53, M.S. '55, is the environmental concerns coordinator for the Oakland County (Michigan) Road Commission. He enjoys his public service position and also does internal consulting on geology, hydrogeology and environmental concerns. He and wife Lois recently celebrated 43 years of marriage. They live in Waterford, Michigan.

Frank Andrews, B.S. '55, retired in May 1995 from the Florida Department of Environmental Protection after 24 years. He lives in Tallahassee and raises, trains and shows Golden Retrievers. He welcomes correspondence from old friends who may call him at 904/877-4817 or e-mail to FA1234@freenet.fsu.edu or Frank9701@aol.com.

Carl G. Davis, B.S. '59, is an instructor of earth science, physical geology and physical science at Danville Area Community College (DACC). At 73, he continues to enjoy his teaching. Three years ago, he wrote a survey of Vermilion County geology as a sabbatical leave project. It was printed at DACC and distributed to local libraries. He credits the assistance of Hilt Johnson and John Kempton.

Bruce F. Bohor, Ph.D. '59, of Golden, Colorado, retired from the U.S. Geological Survey in January 1995 but still works out of his same office, doing research—"just not getting paid for it." He is now scientist emeritus and received two years of Pecora Fellowship funding.

Thirties

Dalias A. Peice, A.B. '37, M.A. '38, who retired in 1980 after 43 years of teaching, continues her research and writing. She is the official weather observer for the National Weather Service in her hometown of Charleston, and she often gives lectures about weather subjects and the Amish community in Arthur, of which she has studied since 1939.

Forties

Ed Bushman, B.S. '41, and his wife, Louise, of Laguna Beach, California, celebrated their 50th wedding anniversary on December 30 with the help of their six children, Bruce, Gary, Joan, Karen, Mary and Paul.

Fifties

Howard R. Cramer, B.S. '49, M.S. '50, retired in 1987 from Emory University and is now a consultant in Atlanta, Georgia.

Sixties

Mike Lukert, B.S. '60, is a professor in the Department of Geosciences at Edinboro University of Pennsylvania and teaches physical geology, optical mineralogy and petrology. He and wife Emmalou spent a night in Sheridan, Wyoming, last summer.

Bill F. Ripley, B.S. '60, works for The Environment Company in Oklahoma City, Oklahoma, doing assessment and remediation of UST releases and Phase I, II and III site assessments. He worked as a petroleum geologist for more than 30 years at Exxon & Humble Oil, Arnold Petroleum, J.M. Huber Corp. and as a consultant. He has returned to school, attending Oklahoma State night courses in hydrogeology, geochemistry and government regulations.

Donald R. Williams, M.S. '62, retired in December after 33 years in the oil and gas exploration business. Most recently he was senior exploration geologist for Kerr-McGee Corporation in Oklahoma City, Oklahoma, primarily engaged in deep gas exploration projects in the U.S. Onshore Region. He plans to continue with and upgrade his cattle ranching enterprise.

"I was in the Kerr-McGee Tower on April 19 during the tragic bombing of the Federal Build-

ing in OKC," he writes. "Our building, two blocks southeast of the blast site, had 92 windows blown out. However, only 19 employees suffered minor injuries from flying glass. The emotional scars will last much longer."

Frederick D. Busche, B.S. '65, has joined the faculty of East Central University in Ada, Oklahoma, as assistant professor and chair of the Department of Cartography and Geography. He previously was division manager of soil and groundwater programs for Man-Tech Environmental Technology Inc. at the Robert S. Kerr Environmental Research Laboratory in Ada.

Glenda Sue (Wilborn) Cordon, B.S. '65, is dean of admission and financial aid at McKendree College in Lebanon, Illinois. She is responsible for the recruitment operation of the college, in addition to running the financial aid office.

Jim Lacey, Ph.D. '67, is affiliated with the Geochemistry Section of the Geotechnology Research Institute, which is one of the groups composing the Houston Advanced Research Center (HARC) in The Woodlands, Texas. He retired in October 1995 after 28 years with Texaco and joined the HARC to help establish the Alliance for Geochemical Research.

Seventies

Suzanne M. Kay, B.S. '69, M.S. '72, was named science editor for *GSA Today*. She handles review and disposition of solicited or volunteered science articles and book reviews for the publication. She is an associate professor in the Department of Geological Sciences at Cornell University in Ithaca, New York.

John C. Steinmetz, B.S. '69, M.S. '75, has accepted a position at the Montana Bureau of Mines and Geology as director and state geologist. The bureau is essentially Montana's geological survey.

Nahum Schneidermann, Ph.D. '72, is director of international technical relations, executive staff, for Chevron Overseas Petroleum Inc. in San Ramon, California. In the October 1995 issue of *AAPG Explorer*, he was featured as a candidate for vice president of AAPG.

William I. Ausich, B.S. '74, was recently appointed chair of the Department of Geological Sciences at The Ohio State University.

Susan (Wintch) Wunder, M.S. '74, is a self-employed dairy farmer in Bloomington, Indiana, with her partner-companion, Charlie, and 9-year-old son, Tim. She continues to do technical editing for various government agencies "in between milkings." The farm was featured in a photo exhibit at Chicago's Peace Museum in 1995.

Mike Hansen, Ph.D. '75, was president of the Nevada Petroleum Society for 1995. He was instrumental in arranging Professor Emeritus Ralph Langenheim's lecture about the history of geologic mapping in Nevada for the

GeoSciences is for alumni and largely about alumni. Please take the time to complete and return the information form at the end of this issue. Just as you like to read about classmates and other alumni, they'd like to know the latest about you. Yours news is important to them and to us in the Department. Send along a recent photo, too, but let us know if you want it returned.

The class notes are divided by decade. Those who were affiliated with the Department during part of one decade through to the next are listed according to the last degree received. Within each decade, items are listed in yearly sequence, not alphabetically.

society. He currently operates a consulting business called Eureka Geological Services in Reno, Nevada.

Jim Castle, Ph.D. '78, is an assistant professor in the Department of Geological Sciences at Clemson University in South Carolina. He teaches sedimentary petrology, structural geology and is involved in the hydrogeology graduate program.

Eighties

Jila Banaee, M.S. '81, M.S. '93 (Civil Eng.), is a senior environmental engineer in the Chemical and Environmental Engineering Department of Lockheed Martin Idaho Technologies, which manages the Idaho National Engineering Laboratory, in Idaho Falls. She was been involved with the preparation of technical environmental reports, papers and proposals in the areas of pollution prevention, waste management, waste treatment and subsurface migration of radionuclides.

Her husband received his Ph.D. from Illinois and taught on the Urbana campus for eight years. He now works as an advisory engineer with Lockheed. Their daughter is now 13 years old. "I lived with my family in Urbana for about 14 years," Banaee writes. "It was hard to leave Illinois and friends behind to come to Idaho."

Paul V. Heinrich, M.S. '82, is a research geologist at the Louisiana Geological Survey. He is currently part of a team that is mapping the geology of the state at an intermediate scale. He is also involved in other studies, such as the geoarcheology of sites in southern Louisiana, the mapping of fault-line scarps, and coastal sand ridges.

The U. of I. Geology Department's own Professor **Craig Bethke**, Ph.D., '85, and his wife, Abigail, welcomed the birth of their daughter, Gabrielle McKay, on Oct. 18, 1995. She weighed in at 9 pounds, 11 ounces and was 20.5 inches.

Yong Il Lee, Ph.D. '85, was promoted to professor of sedimentology at Seoul National University and is serving a two-year term as chair of the geology department there. He recently completed a year's sabbatical research leave sponsored by the Korean government at the University of California at Santa Barbara. Lee's adviser was George D. Klein.

Navy Lt. Thomas R. McCook, B.S. '85, completed a six month deployment to the Persian Gulf last year with the guided missile frigate U.S.S. Reid. The ship was operating in support of international sanctions against Iraq. During the deployment, he visited Hawaii, Singapore, Thailand and Sri Lanka. He joined the Navy in August 1985. **Mark P. Fischer**, B.S. '87, and his wife, Tamara Webb Fischer, B.S.W. '87 (Social Work), have a daughter, Kiah Amara, who was born in December 1991. Several of her relatives are also U. of I. alumni. The Fischers live in Houston, Texas.

Kyung Shik Woo, Ph.D. '86, is associate professor of geology at Kangweon National University in ChunCheon, Korea. Woo is also

spending this year as a part-time visiting professor of oceanography at Seoul National University. He presented a paper and chaired the opening session of the Third Asian Marine Geology Conference in Cheju-DO, Korea, in October 1995. Woo's advisers were Phillip A. Sandberg and Thomas F. Anderson.

James S. Klima, B.S. '88, has left Conoco Inc. in Corpus Christi, Texas, after five years as a geophysicist. Last fall he began work on a master's in geological engineering at the University of Wisconsin-Madison.

Nineties

Laura Becker, B.S. '94, works for HRI, Inc. (Wadsworth Center for Laboratories and Research), analyzing lead levels in blood by atomic absorption. The samples were received from county health departments across New York state. The project is part of a New York State Department of Health study to monitor lead in children.

Dan Nolan, B.S. '95, is recovering from injuries he received in a November 1995 accident in Denver, Colorado. He has since been transferred to Chicago Rehabilitation Institute and is undergoing rehabilitation therapy. His parents welcome any visits or letters. His address is Chicago Rehabilitation Institute, 345 E. Superior, Rm. 410, Chicago, IL 60611.

REMINDER

You can send your update for the
Alumni News section
via e-mail: geology@uiuc.edu

Let's Keep In Touch

Please take a few minutes to let us and your classmates know what you've been doing: promotions, publications, election to office, marriage, parenthood, moving, awards. We'd all like to hear from you. Send your news to the Department of Geology, 245 Natural History Building, 1301 West Green Street, Urbana, Illinois, 61801; fax 217-244-4996; e-mail geology@uiuc.edu.

Name _____ Response date _____

Home address _____ Office address _____
(indicate if changed)

Home phone _____ Office phone _____

E-mail _____

Degrees from Illinois (with year) _____ Degrees from other universities _____

Present employer and brief job description _____

Other news you would like to share _____

Your comments on the alumni newsletter _____

Place
Stamp
Here

Editor, *GeoSciences*
Department of Geology
University of Illinois at Urbana-Champaign
245 Natural History Building
1301 West Green Street
Urbana, IL 61801-2999

The University of Illinois
at Urbana-Champaign
is an affirmative action and
equal opportunity institution.

GeoSciences is printed on recycled paper.

