Dear Friends and Alumni

The academic year 2007-2008 was a special year for the department of Geosciences and for my research group in the Earth Sciences Remote Sensing (ESRS) Facility. A lot of our efforts through the years were bearing fruit on all fronts (research, education, and outreach).

Three years in a row, our graduate students have won the All University Academic Research Award. Out of 27 departments/programs in the College of Arts and Sciences, we ranked 3rd in the amount of research dollars we brought to Western Michigan. It is rewarding to see our youngest faculty member (Heather Petcovic) joining her colleagues in securing research funds; over the past three months Heather secured two NSF grants. Heather and Carla Koretsky (Co-PI) will work on the Development and evaluation of a problem-based, field and laboratory environmental geochemistry course.

**Enrollment up**

Our enrollment numbers are healthy and are on the rise. We now have 90 undergraduates and some 38 graduate students, an increase of approximately 25% from our numbers three years ago. Over the past year, our faculty/students gave some 60 presentations in international, national, and regional venues and published 40 publications in refereed journals. We would like to believe that those encouraging news are largely related to our (faculty/staff) efforts energizing our research activities, streamlining our graduate and undergraduate programs, and our outreach activities aimed at attracting students to our programs.

Over the past two years, we made an effort to bring to the general student population at Western Michigan University education in areas that touch their daily lives and at the same time spark their interest in Geology. Specifically, we added four new general education classes: Geohazards, Planetary Geology, Climate change, and the Civilization and Geology of Egypt. For the latter course, we have arrangements in place for interested alums to join the students on their field trip to Egypt, to see first hand Egypt’s geology, history, and culture and at the same time act as mentors for the students.

**Faculty recognition**

The faculty are the cornerstone of our department and I am quite fortunate to have a group of dedicated scientists and educators who are aggressively advancing our agenda on all fronts. As a small token of appreciation, the department has established for the first time a recognition award for faculty who demonstrated excellence and exceptional efforts in research and educational activities.

The award this year was split between Dave Barnes who has launched and led our efforts in the general area of carbon sequestration in geologic formation and is now being recognized as one of the lead scientists in this rapidly growing area. Robb Gillespie championed our efforts in developing the Egypt's civilization and Geology course and working out all the details - including meeting with all the relevant participants/players and visiting all the planned sites in Egypt during the summer.

---

continued on page 2
MGRRE Progress

We have learned in Geosciences that even at times when serious budgetary constraints are in place, aspirations should be pursued with perseverance and innovation. Of course publicizing our good work and bringing it under the administration’s radar screen can only help.

The development of the Michigan Geological Repository for Research and Education (MGRRE) is a clear example of such successful efforts and will always be a point of pride for all of us in Geosciences. MGRRE is now recognized as one of the lead research facilities in geological research and education of fossil fuels, water resources and environmental problems and applications in Michigan.

On the educational and outreach fronts, our MGRRE scientists and staff, namely Mike and Susan Grammer, have recently secured funding from DTE (65 k) and from Consumers Energy (50 k) to promote K-12 outreach activities; and Bill and Linda Harrison secured funding (30 k) from the State Geological Survey.

Personally

On the personal level, this year has been quite gratifying for me as well. Two of my distinguished students, Adam Milewski and Richard Becker were awarded their PhD. Ricky went on to join the faculty of the Department of Environmental Sciences at the University of Toledo and Adam chose to accept a post doctoral position in the ESRS Facility. Thanks to the efforts of my students, a number of our ongoing projects matured into several significant publications. Three articles dealing with integrated methodologies for the assessment of groundwater potential, sustainable extraction in various hydrologic settings (e.g., transcurrent fault systems), and the origin and evolution of groundwater in arid lands were published in the Journal of Hydrology. A fourth article investigating the impact of human settlements on the onset of dune migration in Cape Code region was published in Holocene.

Research

My projects have taken me twice to the Quetta region in Pakistan over the past six months. The Quetta region is an arid area with severe water shortage problems. It is a problem that is threatening millions of the citizens in the area. A three-year (2007-2010) project supported by the USAID is funding our research aimed at identifying alternative renewable groundwater resources in the area. Water shortage is not the only serious problems they are facing there. Tribal conflicts and ongoing war in neighboring Afghanistan and the continuous influx of immigrants fleeing the war zone into neighboring Quetta are only compounding the problem.

Despite these difficulties we have made good progress in identifying hydrogeologic settings that are favorable for groundwater accumulation and transport in the fold and thrust belts in the investigated area.

A similar NATO-funded, three-year project (2007-2010) that is supporting our collaborative research with Suez Canal University is aimed at the assessment of the groundwater potential in the Sinai Peninsula.

In addition to these two projects, Bill Sauck and myself are starting a new NASA-funded project to explore the use of GRACE satellite data with inferences from hydrologic models, geochemical data, and field data for a better understanding of the time-dependant water storage variability in large-scale aquifers.

Over the past few years, we have been finding that many of our Alums have been quite forthcoming in assisting our department in many ways, including participation in our Fall and Spring gatherings, lecturing our students, participating in our recruitment efforts, providing valuable advice and guidance to the department, and building our endowment base.

We are keen on connecting with all of you, so please take a minute to update your information on our web site (http://www.geology.wmich.edu/alumni.htm). We are looking forward to having you back on campus during our upcoming Spring banquet. It will be a great opportunity to meet with our students and faculty and to hear from you about your achievements through the years.

We would like very much to hear about your success stories, so feel free to join our newly established facebook group (Friends & Alumni of WMU Geosciences Dept) which we hope will provide you with an avenue for connecting with your colleagues on and off campus.
Hello to all alumni and friends. I am starting up the academic year 2008-09 just back from a very rewarding sabbatical leave. No, I didn’t travel to any exotic location, although I did travel a lot (mostly to nice middle-size towns in the Mid-West like Milwaukee, Minneapolis, Chicago, Detroit, Gaylord, Holland, etc. and also meeting venues in Denver, Pittsburgh, Houston, and Lexington).

I was very engaged in our most recent research focus, Geological Carbon Sequestration (GCS). The dual societal concerns of climate change and energy have resulted in an emphasis on the skills and potential contribution of geoscientists out in the ‘big world’. The potential to participate actively in policy debate, contribute to the supply of energy resources, and address development and feasibility of a significant Greenhouse Gas (GHG) reduction technology, GCS, makes for very exciting opportunities for geoscientists these days.

I have been leading (with the active participation of my colleagues at MGRRE) our continued involvement in the Midwest Regional Carbon Sequestration Partnership (MRCSP) as the principle technical contributors to GCS assessment in Michigan. We join the Geological Survey Divisions of the other 7 participating states in MRCSP in the task of characterizing the potential for geological carbon storage in the Mid-west, a very significant component technology in the portfolio of GHG reduction technologies. This involvement has spawned many contacts, opportunities for other research activities, and public outreach related to the dance of the 3 E’s (energy-environment-economy, with acknowledgment to Scott Tinker for the turn of a phrase). As you can see from the list of speaking engagements I have been busy with the outreach task to many organizations: Kalamazoo Rotary, Kalamazoo Environmental Advisory Council, MBGS, AIPG, SPE-AICE, Dow Chemical, WMA&WMA, Michigan Future Conference, and a few others. I have also had a number of media seconds of fame with several interviews on TV, radio, and the papers. Trying to stay humble.

There are 2 initiatives of which I am most proud. I am involved in the Midwestern Governor’s Association GHG Reduction Accord, as a Governor’s appointee to the Cap and Trade program Advisory Committee. The task of this group of representatives from the 6 signatory states to the MGA GHGA is to make recommendations for development and the implementation of a regional GHG cap and trade program with the prime objective of reducing GHG emissions and maintenance of economic vitality in the Midwest.

We are also, with the able assistance of Tony Clark - the main research associate, attempting to develop research capabilities for the multidimensional analysis and modeling of subsurface flow and transport phenomena, especially dynamic reservoir simulation modeling for CO2 injection. This is an ambitious, corporate-sponsored research initiative that will give us the capability to model CO2 injection phenomenon in geological media, an analytical capability that we believe will be fundamental to the assessment of CO2 sequestration feasibility.

I would also like to acknowledge the participation of graduate and undergraduate research assistants, Amanda Wahr, Stephen (Ace) Kelley, Josh Kirschner, and Jason Asmus for their able contribution to our research activities. The incorporation of this work into their degree program requirements is valuable training in preparation for the many professional opportunities in the general area of reservoir studies. This application of our geosciences expertise has great future potential.

Finally, we look forward to several pending opportunities for participation in the dance of the 3-E’s through possible federal Ear Mark Funding for Sequestration Research and outreach, state initiatives for a Center of Energy Excellence, and continued involvement in corporate planning for the possible deployment of Carbon Capture and Geological Storage technologies in Michigan.

On a personal note, we have relinquished our last kid and now have 3 in college. Nick has just started studies in the Forestry and Environmental Studies Department at Michigan Tech in Houghton with plans to study Applied Ecology. He is happy as a clam so far (this is written prior to the first snow flake, so we shall see!). Lily is

continued on page 4
settling on degree work in the Business College at WMU (although I still hold out hope that she will turn to economics) and Brendan has cast his lot to ceramics at the Cleveland Institute of Art. All are happy and developing independence. Teresa is turning her boundless energy to professional endeavors and has several art projects in the works. I had a couple of surgeries this year and have spent most free time at physical therapy. Wind surfing will have to wait until next year!

Dan Cassidy

Last year I taught Earth Studies, Principles of Hydrogeology, and a special topics class devoted to biological processes applied to waste and contaminant degradation. I’ve noticed our student numbers begin to rise, and the quality of our students in the Geosciences has begun to improve. With Duane Hampton, Ron Chase, Robb Gillespie and Bill Sauck, we continue to make changes to our Earth Studies (GEOS 1000) class. In addition, I worked with Duane Hampton, RV Krishnamurthy, and Mohamed Sultan to introduce a new class on the geology of climate change, which we feel will attract many students. As far as research goes, I continue my research with Duane Hampton on chemical oxidation of soils and groundwater. He worked closely with Abe Northup on helping him investigate novel aspects of chemical oxidation.

I’ve also fostered a laboratory study on the biological treatment of a wastewater from the chemical industry in my lab. The company involved trained one of our undergraduates, Josh Wabindato, in exchange for the use of the laboratory and the results. I have also had the privilege of working on a NSF proposal to have a workshop in Nairobi Kenya, in which many faculty members from WMU (including David Barnes and Mohamed Sultan) will participate (should our request be funded). The impetus behind this proposal is the ongoing collaboration between WMU and the University of Nairobi on sustainable development and biofuels. That’s it for now.

Ron Chase

Greetings once again to former students and their families. I am now starting my 36th year in the department and continue to love what I do. Working with students is one of my favorite activities. They keep me young and mentally alive. My teaching activities have changed somewhat as the departmental curriculum evolves. Optical Mineralogy is no longer a required course. Its absence has forced some changes in other courses I teach, but I can understand that the expansion of departmental offerings requires a sacrificial lamb or two at some point. Petrology/Petrography and the Field Geology courses remain healthy and a joy to teach. The Slope Stability Analysis course I launched nine years ago is doing well and is beginning to attract civil engineering students as well as geology majors. Our undergraduate and graduate majors seem to be increasing in number. I am happy. The department is happy.

On the research front, I have been quite busy of late. The upside is that a lot of what Al Kehew, Rennie Kaunda (Ph.D., 2007), Amanda Brotz (almost M.S.) and I have been doing with Great Lakes slope stability studies is now getting out there in refereed journals. More is yet to come. Our bluff dewatering experiments have proven to date to be quite success-
ful and we are now getting inquiries from a few consulting companies and regional coastal management people (such as Wisconsin SeaGrant personnel) as to how to manage their projects. The down side is that the U.S. Army Corps of Engineers has suspended the continuation of funding until further notice. Because of their response needs to the seemingly endless Gulf Coast hurricanes, the Corps budgets have been totally screwed up and their research projects in general have taken the biggest hit.

Our dewatering project began in 2000 and was funded continuously until through 2007. We are scheduled, on paper, to operate our dewatering systems for two more years in order to provide statistical certainty to dewatering successes after data gathering through seven cycles of seasonal weather changes. It is nice to have time for writing so that we can get feedback as the project progresses. However, it would also be nice at this point to have more data gathering and less writing.

On the home front, the Chase/Kilberg family had a very good year. I have started seriously playing the French horn once again after a 36-year absence. To date, I have taken about 12 lessons from the WMU music faculty horn teacher, have attended an international horn camp in New Hampshire where I played principal in the “new-guy’s” horn quartet, and have attended a woodwind ensemble workshop in New Mexico where I was the hornist in a group voted by participants as the best pick-up quintet. I have always loved classical music and now have a chance to express that love once again. This activity provides a new dimension to my life.

Chris remains active as my wife, best friend, and caretaker (not always voluntarily). She seems to enjoy her activities as a grandmother, cook, cross-stitcher extraordinaire, gardener, and home business manager. Karl has moved to Telluride, Col. (lucky him) where he is the director of sales and marketing for a brand new, huge, five-star hotel and ski lodge. He, wife Sandy, and daughter Gabriella Marie (born last December) are moving into their new home at this very moment. Between opening a new hotel and being a husband/father in a community new to him, Karl is working his proverbial tail off. Andy remains in Kalamazoo where he continues to contemplate his future. Scott, wife Colleen, and two-year-old daughter Madeline Grace are still in the Indianapolis area where Scott practices foot and ankle surgery. Colleen is a high-level dietician at one of the hospitals where Scott operates. This past June, Scott passed his final surgical board exam after many months of study and anxiety. Life is tough when a single exam can alter one’s future. Jamie, wife Kate, and 1.5-year-old son Joseph Scott, recently moved into their new home in Arlington, VA. Jamie practices law (specialist in litigation) with the DC firm of Baker-Botts and Kate practices law (specialist in estates) with a small, nearby firm (I forgot the name – old age creeping up). Jamie has also been working at a relatively high level with the Obama/Biden campaign.

I’m very proud of my kids. They had a wonderful mother!

Mike Grammer

In addition to helping out a bit with MGRRE’s K-12 outreach efforts, my students and I continue to work on various reservoir characterization projects in concert with Bill Harrison, Dave Barnes and Robb Gillespie. We have 3 Niagaran reef (Silurian) projects that are finishing up this summer and an Ordovician Trenton Black River study that should be completed by Spring of next year. Amy Noack worked on correlating pore architecture and sonic velocity values to facies and sequence stratigraphic intervals within the reefs. Amy defended in May and is off to EOG Resources in Midland. Jessica Wold is evaluating the reservoir architecture within a major gas storage reef utilizing a sequence stratigraphic framework to drive a geostatistical model. Jess will be leaving for ExxonMobil in the next few months. Audrey Ritter is also working with Niagaran reefs (and will also be going to XOM in the next few months), trying to extract the record of relative sea level changes and corresponding sequences from around the basin to correlate to global eustatic sea level and to evaluate the control of basin wide sequence architecture on the reservoir distribution of these reefs.

Mike Grammer
Jennifer Schulz is working on the Trenton/Black River play in southern Michigan. Jennifer’s main focus is to evaluate the controls on reservoir properties and to test whether the porous intervals are controlled by regional structure (the current thought) or whether there are other controls, such as primary depositional environment or the sequence stratigraphic framework. Jen has already done one internship with a petroleum company, and turned down another one this year to spend more time on her thesis. Based upon the interest in her project at different venues, we expect to keep our student employment rates at 100%. A new student, Heather Qualman, began working on another gas storage reef (Niagaran) this past semester. As with the other students, Heather will be doing a lot of core work and taking advantage of MGRRE’s unsurpassed subsurface resources, but she will be testing multiple geostatistical realizations of a 3-D model of the reef while incorporating the sequence stratigraphic framework defined in other reefs around the basin by the other students. Her main goal will be to test the various outputs provided by the software package Petrel, a state of the art software package donated ($1.2 million) by Schlumberger, and to ground truth and evaluate them based upon rock and log data along with analogs from elsewhere in the geologic literature.

I am also expecting two Ph.D. students this fall. Tarek Anan, who is visiting from Egypt for a year to learn more about sequence stratigraphy and reservoir characterization, and Nasser Al-Ghamdi who will be coming from Saudi Aramco. Tarek is working on a Cretaceous project in the Sinai and Nasser will be working on a project in Saudi Arabia which will hopefully open some doors with Aramco and possibly other groups to expand MGRRE’s “sphere of influence”.

For myself, other than trying to keep the students moving forward both academically and professionally, I continue to co-lead the AAPG Bahamas Modern Carbonate trip – this year was the 12th year), a reservoir modeling trip for Nautlius Geotechnical to the Paradox Basin, and am continuing with some work for Petrobras down in Brazil. A book I edited a few years ago (AAPG Memoir 80) on using modern and ancient analogs for reservoir characterization, and for which we won the Dott Memorial Award in 2006, was just completely translated into Chinese by researchers at the state-owned petroleum companies for the national Chinese Petroleum Geological Society. I can’t read a word of Chinese – but it looks pretty cool and is just one more thing from the Department of Geosciences that helps to continue spreading the WMU name.

As far as recent student field trips, Bill and I took a group of graduate students out to the Paradox Basin (Utah) this past June to get some more hands-on experience with sequence stratigraphy and reservoir characterization and to complement last year’s trip when Bill, Dave and I took the students to the Guadalupe Mountains of W. Texas. We are hoping to run another modern trip in the near future, so let us know if you are interested in going to Florida, the Bahamas or Belize to see what young carbonates look like.

Duane Hampton

I have worked with grad student Tammy DeFrain on laboratory tests of Schumasoil porous polyethylene well screens for free product recovery. Pall Corporation funded us to do these tests. We will present a paper in the upcoming Petroleum Hydrocarbons in Groundwater conference in Nov. 2008. The good news is that these screens, made from melting polyethylene beads together, do a good job of wicking non-aqueous liquids like kerosene into the screen.

I have made presentations to our introductory classes on Geosciences majors and professions. Last year our department participated in an Open House along with physics and mathematics. We’re looking for opportunities to reach out to college-age or high-school-age students and acquaint them with the exciting options available to them in the Geosciences.
Alan Kehew

I hope you all had a pleasant and productive year. Mine was busy with teaching and research—pretty much the typical year. One of the highlights was a short course that I taught at the national meeting of American Institute of Professional Geologists (AIPG) on the glacial geology of Michigan. The meeting was held in Traverse City. I was pretty surprised at the attendance, which was more than 40 (including quite a few alums), and even more surprised and honored when the Michigan Section of AIPG gave me their outstanding geologist award for 2007 at their December meeting. I also gave a talk in Denver at the annual GSA meeting on the aquifer potential of glacial tunnel channels in Michigan and worked on a paper on flash floods in the Sinai with Mohamed’s PhD student (now graduate and post-doc lab manager!) Adam Milewski.

This paper was an outgrowth of the paper we presented at the paleoflood conference I attended in Greece in the summer of 2007. Adam applied his hydrologic model to the flood magnitudes that I calculated from boulder sizes. This paper was accepted by Global and Planetary Change and should be out later this year or early next year. I am also still waiting for the publication of “Megafloods on Earth and Mars” by Cambridge University Press in which I have a paper along with several other colleagues (Andrew Kozlowski, Mark Lord and Tim Fisher) on proglacial lake floods from the southern margin of the Laurentide Ice Sheet.

Last spring I submitted two papers on natural attenuation of petroleum compounds from UST sites to the journal, Groundwater Monitoring and Remediation, and one paper to Journal of Ground Water with recent MS grad, Nathaniel Barnes, on his work on organic carbon in glacial drift. The natural attenuation papers are based on data collected by American Hydrogeology Corp and through a grant from the Kalamazoo Community Foundation with the assistance of undergraduate assistant Sara Snyder. The natural attenuation papers are still in review and the other one was rejected. After some consultation with the editor, we were encouraged to make some revisions and resubmit, which will be a project for this fall. With early summer came the graduation of two very talented grad students, Alan LeFever and Caleb Woolever. I am sure both will be very successful in the professional world.

Summer was busy with the glacial geology course I teach every other year and mapping two quads for MDEQ in Barry County. Next year, we should be able to finish the county. John Esch at DEQ, a GIS expert, is helping turn my field maps into their final digital form for distribution by the DEQ. In late July, Kay and I made our annual pilgrimage to the Maine Coast, where all of our kids live now. Just before we left, we sold our house in Portage and moved into a small rental condo. We sold one of our cottages in Maine to youngest daughter Liz and her husband. Now, we are proceeding on our plan to build a house for our eventual retirement. Between the terrible housing market in Michigan and the cost of building, however, retirement looks a long way down the road.

From Maine, I flew to Norway for the International Geological Congress, in Oslo, where I gave a paper on glacial landforms of the Saginaw Lobe. After about a week of the conference, I participated in a field trip to the Faroe Islands, which are a group of plateau basaltic islands in the North Atlantic Ocean.

continued from page 6

Faculty Updates

continued on page 8
the middle of the North Atlantic between Iceland and Scandinavia. The purpose of the trip was to look at the spectacular glaciation of the Faroes. Besides the geology, the Faroes have an interesting culture as well, with only 48,000 inhabitants of Viking heritage and their own language derived from old Norse. The photos show some of the glaciated landscape and a picture of me in the fog on a very rough boat trip we took (literally as opposed to figuratively, which is my normal condition).

After that trip, I went back to Norway and met a friend of mine I hadn’t seen for 35 years who lives in Norway. He and I and another friend of ours from the states spent four days looking at the fjord country of western Norway and Jostedalsbreen, the largest glacier in continental Europe. It was a lot of fun, but Norway is outrageously expensive. Our third-world currency doesn’t go very far in Europe. After a while, I almost got used to paying $12 for a beer. The photo shows me near an outlet glacier of Jostedalsbreen soon after some big chunks of ice broke off the glacier and came crashing down the mountain around us when we were walking around near the base of the glacier. What a way that would be to go for a glacial geologist!

One other minor note is that I will become a fellow of GSA this fall at the GSA annual meeting in Houston, assuming that the damage from Hurricane Ike gets cleaned up in time.

That’s enough for now I guess. I hope to see many of you at conferences or council meetings and invite everyone to stop in if your travels bring you to Kalamazoo.

**Michelle Kominz**

I can’t believe another year has come and gone and Kathy and Beth are making me wax nostalgic once again.

Fall 2007. This was a very busy semester. I was teaching my graduate class in quantitative basin analysis and an oceanography class and trying to do a halfway decent job as the new departmental “Undergraduate Advisor” (dUA) at the same time. In the quantitative basin analysis class we focused on the Canterbury Basin applying both the backstripping and sequence stratigraphic approaches to the question of sea-level change. Ocean Systems was all systems go with clickers and lecture, exams and a few videos.

While as dUA I was mainly learning what still needed fixing. I kept my head above water, barely, and emerged in the spring semester with only the dUA, two graduate students to advise and an opportunity to do a little research.

Departmental Undergraduate Advisor: This is a new position. Advisor for all of our undergraduate majors and minors, except those leading to an education degree: Earth Science Major and Minor, Geology Major and Minor, Geophysics Major, Geochemistry Major and Hydrogeology Major and the Group Science Minor for Geoscience Majors. How did I end up in this position? As you may recall, in the previous two years I had chaired a committee to revise our majors and we had managed to get some changes approved and moved through the system. So I was elected as the guinea pig, who got to determine if these new programs worked for real students. In the fall I was able to figure out a few cosmetic changes (like getting a printer for the “advising office” [an old storage closet in the windowless masters student cubicle world]) and figuring out how to make the forms easy to fill in on the computer, so that they would not confuse the Registrar. But mainly I was determining what was still broken: our minors. So in the spring semester I revised the major forms and got to work on revising the minors.

Advising: My other advising job is working with my two graduate students. Kisa Mwakanyamale graduated and moved to Rutgers University (Newark) to work on an environmental/geophysics PhD. Josh Kirschner began his masters and is finishing the study of the extension of passive margins and their impact on the volume of the oceans and sea level change. Josh has the Atlantic margins to deal with as well as any extensional margins in the Pacific. After his thesis continued on page 9
Carla Koretsky

Hello friends and alumni! It’s been another busy year here at WMU. I feel very fortunate to have interacted with so many excellent students in the past year – both in my classes and in my research group. Soumya Das earned his PhD last summer and began a postdoc with Nathan Yee at Rutgers University. Melanie Haveman is planning to defend her MS, which focused on the influence of purple loosestrife on the chemistry of Kleinstuck Marsh, in the coming semester.

Melinda Schaller completed her undergraduate work at Kalamazoo College last fall and continued to work in my lab in the spring and summer. She has been studying Cd adsorption to a variety of colloids and is in the process of writing a first-authored paper for publication based on this work. She plans to begin medical school at Wayne State University in the fall. Trevor Whitlock has decided to continue his studies of Ni contamination in a groundwater aquifer as a PhD student here at WMU. Angel Cuellar completed his undergraduate work in the fall and began work on his MS Geosciences here at WMU in the spring. Angel plans to study the effects of microbial reduction on trace metal speciation via experiments with Shewanella putrefaciens. Martin Akafia has just joined the research group as an MS student and will be finding a project to work on soon. Ryan Sibert, a geophysics major, and Thomas Reich, a geochemistry major, joined the research group this past spring as well. They are both working on a variety of adsorption experiments. We have had fun attending two conferences this year. In October, Angel, Melanie, Trevor, Melinda and I presented our work at the Denver GSA conference. In April, Trevor, Melinda and I presented our work at the joint meeting of the American Chemical Society and Soil Science Society of America at a huge conference in New Orleans.

Other exciting news: Heather Petcovic and I were recently awarded an NSF Geosciences Faculty Updates

continued from page 8

proposal seminar we got to work on developing ways to test our results against previous, more detailed studies. Then he took off for an internship with Devon Energy in Oklahoma and a stint as TA for our Upper Penninsula field course. Travis defended his M.S. in the spring. He published his results in Geology shortly thereafter, establishing the effects of an astronomic impact on the southern Chesapeake Bay in the latest Eocene. Since then he has been starting his PhD research, which will be centered on the Cenozoic tectonics of the Victoria Land Basin in Antarctica. Travis presented preliminary results from a well drilled in early 2007 at an Antarctic conference in Santa Barbara and attended a workshop for researchers who are doing the preliminary work on a second deep core drilled beneath the ice shelf off McMurdo Sound in December 2007.

As for myself, my efforts are largely involved in expediting my students’ work. I remain involved in the next phase of the Chesapeake impact through my colleagues at Rutgers. I also have completed, with the aid of several undergraduates over the years (primarily Danielle Odette and Kyle Patterson) a compilation of porosity data as a function of lithology from ODP (Ocean Drilling Project) cores. With a little luck I will be able to find some time to do some statistical analysis of the data and write it up. My latest sea level curve based on central east coast data was published in June in Basin Research. I remain an editor of that journal and it is very good at sequestering my time, in addition to teaching me about geologic problems and revelations far from my own field.

Meanwhile I have applied to sail, as a physical properties specialist, on IODP Expedition 317 to Canterbury Basin and Travis has applied as a physical properties specialist on IODP Expedition 318 to the Wilkes Land margin of Antarctica. We were both accepted and if the ship sails in November I will be on it, and replaced in January by Travis. Thus, if all goes well both Travis and I will get to have entirely new experiences and broaden our skills as well as our international sphere of colleagues. Thus, there will definitely be something interesting to write about this time next year.

continued on page 10
Education grant. This grant will allow us to create a very modern analytical facility to be used in an undergraduate field and laboratory environmental geochemistry course. We will be designing the laboratory next summer and I will be teaching the course in fall 2009. Heather will use the course as a test bed to investigate how students make the transition from novice to expert in doing fieldwork.

In other news, I’m working with yet another new horse this year – a cute little paint mare named Gypsy. Gypsy was overweight, had very little experience being ridden English and was a bit of a handful when I started working with her in February, but lately has been doing great. She tied for champion at her third ever dressage show and won her first beginner horse trials. Lastly, Melinda and Thomas have talked me into running the Chicago Marathon with them in October. I don’t know if I should thank them or slap them! I have been an off again, on again runner for many years, but I have never attempted anything like this before. I will be running for the Children’s Memorial Team in honor of my father, who passed away in 2003. If you would like to check out my runner’s diary and see how much I am suffering (or if you’d like to make a contribution to my effort), go to: http://www.childrensmemorial.org/marathon/sponsors/runnerDiary.asp?runnerID=1205

Please send me an email and let me know what you’ve been up to lately!

**R.V. Krishnamurthy**

The past year for me was marked by few land marks, both at work and home. Two students, Tsigabu Gebrehiwet and Steve Beukema, completed their doctoral dissertations and took up employment as a post doctoral fellow at the University of Oklahoma and project manager with Michigan’s Department of Environmental Quality respectively. Tsigabu was also the recipient of the NABGG Superior Academic Award. Part of his work was published in the respected journal Geobiology and another, thanks to the efforts put in Carla, in Chemical Geology. At home, my son Rohan graduated from Kalamazoo College with majors in Chemistry and Music and decided to pursue Music, his main passion, at the graduate level. He has been admitted to the Ph.D program at the famous Eastman School of Music as a Provost Fellow and will be leaving this fall.

In January, I had the privilege of delivering an invited talk at the Physical Research Laboratory, my alma mater. PRL was celebrating its diamond jubilee and the three day meeting had well known geoscientists from around the globe. It was also an opportunity to hear from PRL space scientists who are in charge of India’s moon mission, details of the project. They also expressed interest in my spending an extended stay with them. Later developments at Western has made it a possibility.

On the personal front, my sabbatical leave application has been approved and I am preparing for long periods of travel involving teaching and research. I plan to spend time in Finland (University of Helsinki), India (several institutions), Germany (Helmoltz Institute of Hydrology) and Scotland (Scottish Universities Research and Reactor Center). Hopefully, this will provide me with lot of experiences to share in the future newsletters!

**Heather Petcovic**

Greetings Geosciences friends and alumni! The past year has been exciting both personally and professionally, and the coming year promises to continue this trend.

I have continued research on geologic problem-solving in the field with collaborators Kathleen Baker from WMU’s Geography Dept and Julie Libarkin at Michigan State. Our project examines “geological thinking” of undergraduate students, graduate students, and professional geologists during geologic bedrock mapping. By comparing the strategies, behaviors, and thought processes of the students to the professionals, we hope to understand where the “gaps” are between student and professional thinking in the field.

Analysis of the data collected in summer 2007 suggests that three key areas of geological thinking during field tasks are: (1) navigation and spatial awareness, (2) identification of key continued on page 11
features (e.g., rock type, contacts, and structural features), and (3) synthesis of data to produce testable models. Experts are far more likely than students to move deliberately through the field site (less backtracking), to spend more time in key areas, to produce tentative mental models of the rock relationships in the map area, and to test the models by collecting additional observations.

I continue to work with current and future teachers of earth science at all levels. Together with colleagues from the Mallinson Institute for Science Education – Herb Fynewever (Chemistry), Charles Henderson (Physics) and Marcia Fetters (Education) – we offered a professional development workshop for high school science teachers in the Battle Creek region. The workshop used an action research model in which teachers study and improve an aspect of their teaching practice. We will continue this program in the coming year, culminating in teacher-participant presentations about their research projects at the Michigan Science Teachers Association meeting in the spring.

Several additional research projects will be starting up in the coming year. With funding from the National Science Foundation, Carla Koretsky and I will be developing an environmental geochemistry field course and assessing its effectiveness in teaching students to plan and carry out data collection in the field. Mallinson colleagues Herb Fynewever, Charles Henderson and I will be working with community college instructors on action research projects.

In Fall 2007, Robb Gillespie and I launched the new general education course “Earth Hazards and Disasters.” The first offering of this course explored the science and societal impacts of major geologic hazards - impacts, earthquakes, volcanoes, floods, tsunami, landslides, and hazards related to global climate change. We hope that the course will be a model for other new courses in the department focused on important societal issues such as energy resources, water resources, and climate change.

This is the first time in the past four years that I have been unable to attend the Upper Peninsula field course - but for good reason. On June 1, my daughter Alexandra joined the family. Big sister Jessica has adjusted well to the new baby, even sharing her toys (sometimes). Mom and Dad are still adjusting to the new arrival, but each day brings some new discovery or adventure. The coming year promises to be busy with teaching, teacher workshops, family, students, and research projects.

**William Sauck**

Hello friends and alums! In the Fall, 2007, semester I again taught a section of Geos1000 (Earth Studies). Elen and I made a few trips during the semester to the Mayo Clinic (Rochester, MN), where she had a major surgery for removal of a large part of her abdominal lipo-sarcoma on Nov. 15. From Dec. 19 - Jan. 4, Elen and I made our nearly annual trip to Brazil to be with family for the holidays. More progress was also made on construction of our beach home near Sao Luis.

Teaching during Spring term included another section of Geos1000 as well as a small but enthusiastic class for Ground Penetrating Radar. I was asked to be a member of the “Water Technologies Cluster” or planning group of the Michigan Economic Development Corporation. MEDC is a public corporation formed by the governor, with offices in Lansing. This has since involved several meetings there, as well as conference phone calls and numerous emails. During April 6-10, I went to the SAGEEP (Symposium for the Application of Geophysics to Engineering and Environmental Problems) meeting in Philadelphia to present a paper dealing with ways to recognize spurious surface and air waves at cluttered urban sites that have numerous surface reflectors. In Jan., Hatem El-Sayed, a Ph.D. student with full scholarship, arrived from Egypt to work on his degree in geophysics. In late April, I again went to Egypt for nearly 3 weeks.
weeks - this time at the invitation of the Egyptian Ministry of Education, as we were preparing to receive another Ph.D. student under their “channel” program. I gave talks at Cairo Univ. (hosted by recent post-doctoral visitor Khalid Essa), at the Desert Research Institute (the professional home of Drs. Safie Metwaly and Ayman Altemamy), and Suez Canal Univ. (hosted by Drs. Rashed, Soliman, and many other friends). I also visited SCU campi at Port Said and at Suez City, thus traversing the full length of the Suez Canal by car and train. I also had a very interesting visit to two archaeological sites in the NW Sinai with graduate student Akram Aziz, who is arriving in Kalamazoo in September.

For the first time in many years, I did not teach the Geophysics module of the Hydrogeology Field course during Summer II, instead turning that over to recently graduated Dr. Laura Sherrod. This allowed two full months to spend with Elen in Belem and Sao Luis, Brazil. Elen’s father finally succumbed to his ruptured abdominal aorta two days after our arrival, so our trip began with a funeral.

Besides working on our beach property, much of the remaining summer was spent preparing for the formal wedding of oldest daughter, Christine, on Aug. 16. Her husband, Hicham, is Lebanese/Brazilian, having left Beirut on a refugee flight at age 5. Thus, the wedding combined the three cultures: American, Brazilian, and Lebanese, and was held on the family beach property on an evening with a full moon.

Continuing on the family side, Christine finished her sixth year of graduate work in Clinical Psychology at Clark Univ. in Massachusetts, and will be done as soon as her 1-year internship is concluded. Carolyn (our mechanical engineer) continues with SABO USA (a Brazilian auto parts supplier) at their Plymouth, Mich. office, except for a leave of absence during which she traveled for three months in Brazil and five months in New Zealand. She and brother Eric are sharing her condominium on the south side of Ann Arbor. Eric is still a Junior in M.E. at U of M, and worked at Toyota Engineering during the Spring term on his second co-op semester with them. He also spent 8 weeks of the summer in Washington, DC as an intern at the national headquarters of the SAE. Oldest son Jeff and his wife live in Crystal Lake, IL, with our 2 grandsons, ages 6 and 2.

We return to the Mayo Clinic every 2-3 months for Elen’s checkups and stent replacements, and are thankful for all the good days that she has.

Chris Schmidt

This past August grad student Josh Kirchner and I hiked around the Tobacco Root Mountains in Montana, sampling sheared granite along some large fault zones that have apparently controlled the emplacement of the Tobacco Root batholith. I’ve included a couple of pictures. Seems Josh is so talented that he works with me, Dave Barnes, and Michelle Kominz on different, and unrelated, projects. Josh’s job on our project is to analyze the deformational features in thin section to help prove an old hypothesis of mine that this batholith was intruded into pull-apart regions controlled by the largest faults in the Rocky Mountain foreland of Montana. Nice to see a grad student actually wanting to do some traditional petrologic/structural research. I wonder if the good ol’ days are returning.

Speaking of the good ol’ days, Chris Whisner (M.S. ‘98) and I were co-authors on the featured article in the September issue of the GSA bulletin. The paper was an outgrowth of his mapping project in the Central Montana thrust belt and paleomagnetic work we did with paleomagicians, Steve Harlan and John Geissman, on folded sills in the Doherty Mt. fold and thrust complex. Chris, if you read this, you and Jen (Jennifer Ber- gin-MS 1994) get that other manuscript to me soon. I’m not going to live forever. By the way, Chris has finished his PhD at U. of Tenn. and is working on a post-doc there.

I’m currently working on trying to understanding modern well log imaging techniques. I got involved in this by agreeing to be the thesis
advisor for Emily Hartwick. Emily is a very talented student who spends most of her time working for Wolverine Oil and Gas in Grand Rapids. Her project involves using modern well log images to characterize the 3-dimensional attitude of fractures and current forsets in the Navajo Sandstone in the Covenant Oil Field, Utah. The field is located in the easternmost part of the thrust belt and basin-range province in Utah and is said to be the most significant land discovery in the US in 30 years. It would be very daunting for me to be the advisor were it not for the fact that Emily’s supervisor at Wolverine, John Verona, has agreed to be on her committee. Nevertheless, this old dog (me) may have to learn some new tricks.

Former grad student Chris Varga has moved to Houston with wife and current grad student, Audrey Ritter, and daughter. Chris and I are still working on pressure solution cleavage in the Blue Ridge Province of Tennessee. However, with the recent landfall of Ike, I’ll bet he has other things on his mind.

I have just submitted my sabbatical application to return to the Andes of Argentina in 2010. This will be my last sabbatical at Western – and I’m not retiring till I get it – but hopefully not my last trip to Argentina. Those folks are the best colleagues in the world, and I may spend winters and springs of my retirement years down there where they appreciate a traditional geologist and a good old Yankee perspective on the geology. My summers and falls will, of course, be spent in Montana doing mapping and fishing—not necessarily in that order.

Adjunct Faculty

Robb Gillespie

Cheers to all alumni and friends. This year has just evaporated, so I must be having fun.

Happenings at MGRRE are always high on my list of things I like to see. Dr. Bill and Linda Harrison, Dr. Mike and Sue Grammer, and Dr. Dave Barnes, have had a great year at MGRRE. Dave Barnes has become the state of Michigan expert concerning CO2 Sequestration. Sue Grammer has led the K-12 Outreach Program to new heights. Bill and Linda have championed a new agreement with the state of Michigan concerning core and data storage helping generate the beginnings of a steady stream of income. They have brought home grants, developed visibility and grown MGRRE’s reputation. Although I’ve not been directly involved in research at MGRRE this year, I have been doing my small part as a member of the board helping to point the facility along a self-sustaining path. Great strides this year will hopefully lead to even greater accomplishments next year.

We have been awarded (remember – everything is relative) the 2010 Eastern Section meeting for the American Association of Petroleum Geologist (AAPG) to be held here in Kalamazoo. Bill Harrison and I will be co-general chairs and Mike Grammer and Dave Barnes will be chairing the program committee. Although the meeting is still two years away, we have already started working on some of the basic activities. We anticipate somewhere between 500 – 700 geologists in attendance, so this is a major undertaking. Keep the week of September 28, 2010 open on your calendar so you can attend.

Heather Petcovic and I taught the newly approved GEOS 1500 “Geological Hazards and Disasters” course for the first time last fall semester. We had 23 students in the class and it was well received. I’m teaching it again this fall, but Heather is tied up with other classes, so her discussion sections are being taught by our very able Teaching Assistants Josh Kirchner and Dee Becker. We have 70 students in the class this semester, more than triple our last outing, which is very encouraging. The course is obviously catching on, and becoming popular with the students. I’m also teaching both sections of GEOS 3220 “Ocean Systems” this semester, which should keep me more than busy.

The textbook supplement “The Geology of Michigan and the Great Lakes” that I was working on last year with Dr. Bill Harrison and Dr. G. Michael Grammer has been published. Linda Harrison’s photographs of Michigan geology added a real artistic touch to the publication, and really made for a
true professional look. Her image of Potato Falls (Pictured Rocks area in Michigan’s Upper Peninsula) made for a striking, eye-catching, wrap-around cover. We are including the supplement in Garrison’s “Oceanography” textbook as a special WMU edition for use in our “Ocean Systems” class this semester. It’s also included in the textbook for our “Hazards and Disaster” class. The supplement, in general, is proving very popular, and the publisher is very pleased with the way it turned out. It proved to be a valuable text addition to our GEOS 4380 “Field Studies in Geology” course this past summer, and keep copies at the MGRRE facility to present to “distinguished visitors.”

I am very proud of the students who are working on their Master’s projects and who have included me as a member of their committees. Amy Noack just finished her Master’s thesis this past summer. I was in Egypt at the time, so I was busy e-mailing my comments and suggestions back to her. Dr. Mike Grammer, head of her committee, helped her work through my thoughts at the Kalamazoo end. I guess it worked; she passed with flying colors. Amy is now working for EOG in Midland, Texas exploring for oil and gas. She’s having a grand time working with an old friend of mine from my ARCO Oil and Gas days. Audrey (Ritter) Varga is working to finish her thesis and is “closing-in-on-it.” She and her husband Chris are now both in Houston, Texas working for Exxon Mobil. Jennifer Schulz is working hard on her thesis. She will be presenting some of her Trenton-Black River work at a PTTC workshop being held here in Kalamazoo at the MGRRE facility on September 24-25th, and at the AAPG Eastern Section meeting in Pittsburgh this October. It’s always satisfying to see students be successful.

The 1.2 ton “Michigan Copper Erratic” now stands outside the entrance to Rood Hall (near the Lee Honors building), and a 45 minute powerpoint presentation about “Michigan Copper” runs on one of the new flat-screen panels inside the Schmaltz Geological Museum. There was a formal dedication ceremony during spring, 2008 when the departments’ external advisory board met. Dr. Thomas Kent, Dean of WMU’s College of Arts and Sciences, along with Michigan State Geologist Hal Fitch and his Deputy Director Tom Godbolt, were in attendance. After 3 years of effort, I’m happy to finally see this portion of the project completed.

I had the opportunity to help Dr. Ron Chase teach the GEOS 4380 “Field Studies in Geology” course this past summer. We spent 3 days investigating glacial and shoreline features in the Lower Peninsula, then crossed the Straits of Mackinac, and spent the remainder of the two weeks exploring and doing some mapping in the Marquette Trough, Lake Superior Syncline and the copper country of the Keweenaw Peninsula. It had been a long time since I had been in Michigan’s Upper Peninsula, and even longer since I had been out in the field doing geological mapping. It was great being back out there, even if these “old bones” had to camp out and sleep on the ground. It was a great group of students, and we got by with only minor issues (just one trip to the emergency room).

I’ve been involved in developing a new course, GEOS 2020 “Egypt – Civilization and Geology.” This has taken up all of my spare time, but, I was able to spend a month in Egypt this summer as part of that effort (There’s a two week field trip to Egypt as part of the course.). Not a bad trade-off. There’s more about the new course in another section of this newsletter.

Tres Rios Resources, Inc., the small Texas based oil and gas company I’m associated with, had a good year. It’s pretty hard not to with oil over $130 per barrel. But, oil prices are too high, the economy is feeling the stress, and it’s just a matter of time before prices come down to more reasonable levels. It’s either “feast or famine” with this business.

The new/getting-older house continues to be a black hole for all forms of currency. We lost seven big trees in a major storm this past June. I’m just now getting the last of that mess cleaned up. The good news is: I now have a 10 year supply of firewood. It’s all cut to length, but the bad news is: it now has to be split. I wonder if there is any way I can turn this opportunity into a three credit course “Geologists and Wood Splitting” offered in conjunction with the WMU Physical Education Department?

Department of Geosciences Staff
Kathy Wright ......................... Administrative Assistant Sr.
Beth Steele ......................... Newsletter Editor
Michael Durham ...................... Technician
Publications

Barnes
- Dave Barnes and W.B. Harrison, Technical Summary: Strategic Planning for CO2 Sequestration; Consumer’s Energy Coal Fired Power Plant Facilities, Karn–Weadock, Bay Co. and Campbell-Cobb, Ottawa and Muskegon CO, Areas, Michigan; Michigan Geological Repository for Research and Education, Western Michigan University, January, 2008, 29 p. w/figures and appendices

Cassidy

Chase

Gillespie

Grammer


**Kehew**

- Kehew, A.E., Milewski, A., and Soliman F. in press, Reconstructing an extreme flood from boulder transport and rainfall-runoff

**Kominz**


**Koretsky**


**Petcovic**


**Sauck**


continued from page 15

Continued from page 15

Continued from page 15
tanks: Artifact removal through effective data processing”; Geophysics, V. 72, No. 6, pp. J-7-J83.


Sultan


<table>
<thead>
<tr>
<th>Project Director</th>
<th>Title</th>
<th>Sponsor</th>
<th>Funding Source</th>
<th>Dates</th>
</tr>
</thead>
<tbody>
<tr>
<td>Carla Koretsky</td>
<td>CAREER: Generation of sediment heterogeneity by macrophytes and</td>
<td>National Science Foundation</td>
<td>Federal</td>
<td>8/04-7/09</td>
</tr>
<tr>
<td></td>
<td>macrofauna and consequences for redox chemistry and trace metal</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>speciation</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Dave Barnes</td>
<td>Geological Carbon Sequestration Feasibility Assessment, Central</td>
<td>NTH Consultants, LTD</td>
<td>Private</td>
<td>9/07-1/08</td>
</tr>
<tr>
<td></td>
<td>Lower Michigan</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Dave Barnes</td>
<td>CO2/EOR Feasibility Central Michigan basin</td>
<td>NTH Consultants, LTD</td>
<td>Private</td>
<td>7/08-10/08</td>
</tr>
<tr>
<td>David Barnes</td>
<td>Midwest Regional Carbon Sequestration Partnership; Regional</td>
<td>Battelle Memorial Institute</td>
<td>Other</td>
<td>9/06-8/09</td>
</tr>
<tr>
<td></td>
<td>Carbon Sequestration Assessment, Michigan basin</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>David Barnes</td>
<td>Geological Carbon Sequestration Feasibility Assessment, Northeast</td>
<td>Burns and Roe Enterprises</td>
<td>Private</td>
<td>5/08-10/08</td>
</tr>
<tr>
<td></td>
<td>Lower Michigan</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>David Barnes</td>
<td>Development of multidimensional analysis capabilities for modeling</td>
<td>NTH Consultants, LTD</td>
<td>Private</td>
<td>7/08-6/09</td>
</tr>
<tr>
<td></td>
<td>subsurface flow and transport phenomena, especially dynamic reservoir</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>simulation modeling for CO2 injection</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Heather Petcovic</td>
<td>Development and evaluation of a problem-based field and laboratory</td>
<td>National Science Foundation</td>
<td>Federal</td>
<td>9/08-8/09</td>
</tr>
<tr>
<td></td>
<td>environmental geochemistry course.</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Heather Petcovic</td>
<td>Alignment of Secondary Science Teacher Practice Materials in the</td>
<td>Michigan Department of</td>
<td>State</td>
<td>9/07-6/09</td>
</tr>
<tr>
<td></td>
<td>Battle Creek Region</td>
<td>Education</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Heather Petcovic</td>
<td>Improving the STEM workforce by improving community college teachers</td>
<td>National Science Foundation</td>
<td>Federal</td>
<td>8/08-8/13</td>
</tr>
<tr>
<td></td>
<td>of science</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Cognition in the Geosciences</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Johnson Haas</td>
<td>An Experimental Investigation of U(IV) Organic Aqueous Complexation</td>
<td>National Science Foundation</td>
<td>Federal</td>
<td>9/06-8/09</td>
</tr>
<tr>
<td>Michael Grammer</td>
<td>Keystone Youth Policy Summit</td>
<td>Keystone Center for Science</td>
<td>Other</td>
<td>7/08-8/09</td>
</tr>
<tr>
<td></td>
<td>and Public Policy</td>
<td>and Public Policy</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Michael Grammer</td>
<td>Core Kids</td>
<td>DTE</td>
<td>Private</td>
<td>12/08/12/10</td>
</tr>
<tr>
<td>Michelle Kominz</td>
<td>Disentangling Eustasy, Sedimentation, Tectonics and Ice Loading Using</td>
<td>National Science Foundation</td>
<td>Federal</td>
<td>6/07/12/08</td>
</tr>
<tr>
<td></td>
<td>Antarctic Drilling Results</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Mohamed Sultan</td>
<td>Assessment and Development of Renewable Groundwater Resources in</td>
<td>The National Academy of</td>
<td>Federal</td>
<td>3/07/1/10</td>
</tr>
<tr>
<td></td>
<td>the Quetta Valley, Pakistan</td>
<td>Sciences</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Mohamed Sultan</td>
<td>Monitoring and Event Response for Harmful Algal Blooms</td>
<td>NOAA</td>
<td>Federal</td>
<td>9/04-8/08</td>
</tr>
<tr>
<td>Mohamed Sultan</td>
<td>Assessment and Development of Alternative Water Resources in the</td>
<td>NATO Science Program</td>
<td>Foreign</td>
<td>2/07-12/09</td>
</tr>
<tr>
<td></td>
<td>Sinai Peninsula, Egypt</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Mohamed Sultan</td>
<td>Integration of Grace Data with Inferences from Hydrologic Models,</td>
<td>NASA</td>
<td>Federal</td>
<td>4/08-4/11</td>
</tr>
<tr>
<td></td>
<td>Geochronological Data, and Field Data for a Better Understanding of</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>the Time-Dependent Water Storage Variability in Large-Scale Aquifers</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Case Studies from North Africa</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Mohamed Sultan</td>
<td>A Proposal to Evaluate the Jet Propulsion Laboratory Mars Exploration</td>
<td>NASA</td>
<td>Federal</td>
<td>2007-2009</td>
</tr>
<tr>
<td></td>
<td>Public Engagement Program and Mars Student Imaging Project</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Mohamed Sultan</td>
<td>Renewable Groundwater Resources in Sinai</td>
<td>National Science Foundation</td>
<td>Federal</td>
<td>2005-2008</td>
</tr>
<tr>
<td>Mohamed Sultan</td>
<td>The Mesopotamian marshlands from disintegration to restoration</td>
<td>National Science Foundation</td>
<td>Federal</td>
<td>9/04-8/09</td>
</tr>
<tr>
<td>William Harrison</td>
<td>Petroleum Technology Transfer Council Michigan Center</td>
<td>Petroleum Technology Transfer</td>
<td>Other</td>
<td>10/97-9/08</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Council</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Adam Milewski</td>
<td>Developing Cost-effective Methodologies for Groundwater Assessment and</td>
<td>US Department of Agriculture</td>
<td>Federal</td>
<td>7/08-6/09</td>
</tr>
<tr>
<td></td>
<td>Exploration in Sinai</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
Save the Date:
Advisory Council Meeting on Friday, April 17, 2009. Watch for more details coming soon, and also plan to join us for the Alumni Reunion on April 17.
We wish you could all see the changes we’ve made during this past year at our new home for the Core Lab and MGRRE. We have built new offices and added new equipment, acquired faster computers and better software, created new Web pages, hired additional staff, brought in huge collections of cores and well data, gotten some new applied research projects, forged more alliances with industry and government, and expanded our outreach programs. In short, we’re dancing as fast as we can.

Our collections have really grown this year with the addition of 150 pallets of core that were previously held by private industry and governmental agencies in Michigan and Texas. Through some generous continued Federal funding (thanks to Congressman Fred Upton), we were able to bring these irreplaceable cores here and are now inventorying them to add to our databases.

We have also installed new warehouse racking capable of storing our original cuttings as well as a large collection brought from the University of Michigan last year. It will also provide space for the samples from the State.

We remodeled the core examination room by adding banks of new high intensity fluorescent lights and ceiling fans. We have also added two new research offices. We also redesigned our virtual space with new WebPages, and you can see those at http://wst023.west.wmich.edu/MGRRE%20Website/mgrre.html.

It seems that the high price of oil and gas has really stimulated renewed exploration interest in Michigan. We have had a lot of visitors at MGRRE looking at cores and data and respond to frequent requests for data. Some of the current research in the lab focuses on enhanced recovery opportunities in older Michigan fields. CO2 flooding has become of great interest to a number of companies and we are knee-deep in feasibility studies.

Our Petroleum Technology Transfer Council (PTTC) industry outreach program is still going strong. Bill and Linda Harrison put together a blockbuster workshop in March. Nearly 200 attendees heard thirteen speakers, visited exhibitors, examined cores and discussed graduate student poster papers.

Linda Harrison manages the daily operations at MGRRE and continues to supervise our talented team of student workers. They do all the heavy lifting of adding information to databases, laying out cores, and finding data for visitors.

We are all delighted that Niah Venable, who has a master’s degree in geology from Western, joined our staff as administrator this year. Niah is a joy to work with and knows so much about working with databases and complicated geodata software.

Bill Harrison leads a team including Linda, Niah and several students, working in partnership with Michigan’s Department of Environmental Quality, Geological Survey, to inventory all our collections and add additional metadata that will make them readily searchable. The resulting databases will ultimately be part of a national archive of geodata being created and funded by the United States Geological Survey.

Bill attended the national AAPG meeting in San Antonio and enjoyed the opportunity to see several old friends and alumni. A large group of stu-
dents and faculty also attended the Eastern Section of AAPG in Lexington last fall.

Mike Grammer and Bill took a group of students on a week-long field trip to the Paradox Basin in late spring. The geology was fantastic and the weather was perfect. They did a lot of reservoir scale geological observations of the phylloid algal mounds and even got in a little sightseeing at Arches and Canyonlands.

Dave Barnes, along with Bill Harrison, Sue and Mike Grammer, has been very involved in geological carbon sequestration studies in the Michigan basin as part of ongoing research funded by the DOE (Department of Energy) – NETL (National Energy Technology Laboratory) through the Midwest Regional Carbon Sequestration Partnership and lead research group, Battelle Memorial Institute.

Additional sponsored research in the area of geological carbon sequestration in Michigan is also in progress with support from the Electric Power Industry. Substantial potential for industrial-scale geological carbon storage exists in Michigan and, in light of imminent regional and national greenhouse gas reduction initiatives, feasibility studies for CO₂ enhanced oil recovery opportunities and saline reservoir carbon geostorage potential are of great interest.

Dave and the MGRRE research team continue to expand their repertoire of research tools focused on CO₂ sequestration including an initiative to expand their subsurface reservoir, subsurface flow, and injection modeling capabilities. They are developing computational resources for STOMP (PNNL open source code for reactive transport modeling) and Schlumberger Petrel/Eclipse reservoir engineering software applications. The emphasis is on modeling subsurface flow and transport phenomena, especially CO₂ injection simulation and reactive transport modeling.

Dave is in serious demand as a speaker these days. He also serves on several prestigious committees, including the Midwestern Governors Association Greenhouse Gas Reduction Accord.

Outreach updates

Susan Grammer with help from Mike Grammer leads MGRRE’s K-12 Outreach Program. This year they visited students in over 40 area classrooms with presentations and displays and hosted several high school field trips at the repository. Bonnie Cross created a mailing list of local schools so that they could announce the program during National Earth Science Week in October. It’s a very busy year for the program, and thanks to a grant from DTE Energy, we are looking forward to staying busy well into the future!

Geosciences graduate students Amy Noack, Audrey Ritter, Heather Qualman and Amanda Walenga visited classrooms with Susan and told students how much fun you can have as a geologist and the entire MGRRE crew got in on the act when high school classes came to tour MGRRE. Geosciences alumnus, Niah Venable, M.S., visited classrooms with Susan and is now hard at work on making our presentation on hydrogeology web compatible so that other teachers around the state can use real drilling data to map the subsurface in their own communities.

Two work-study students worked on the Sands of the World project, taking photomicrographs of different sands from around the world and collecting information on the beaches that they came from. Once the sands are described geologically all of this information will make it to our Website where students and teachers will click on a world map to see photos of sand and information about the area the sand came from. We can always use more sand from you world travelers – just drop off a baggie full labeled with as much detail as you can about where it was collected! If you happen to have it, latitude and longitude would be great, too!

In addition to spending lots of time in 3rd, 4th, 6th, and 8th grade classrooms this year, we also took our show on the road to exhibit at the Michigan Earth Science Teachers’ Association conference in the Traverse City area, the National Science
Teachers’ Association meeting in Detroit and the Michigan Science Teachers’ Association conference in Lansing. Over 100 teachers participated in our raffle at MSTA and the winner, Nancy Riley of Adrian Middle School, Adrian, Michigan, took home a porosity and permeability apparatus made from MGRRE cores just like the one that we take out to classrooms. Her school plans to use it immediately as part of an enrichment lab on ground water and sources of water pollution.

Lindquist joins outreach efforts

Our most recent addition to the outreach crew is Jennifer Lindquist, a graduate of WMU College of Education. As this is being written, Jennifer and Susan are preparing to take our Core Kids presentations to Girl Scout Camp in July, talking about Michigan geology and natural resources to over 80 girls between the ages of 5 and 12. Jennifer is keeping busy this summer creating new classroom presentations for the coming year as well as developing content for our website.

We are also excited that MGRRE will partner with Keystone Science School to host a Regional Youth Policy Summit in July, 2009. Forty high school students from across the State will spend a week at WMU participating in a mock policy dialogue focused on reducing greenhouse gases. This will mark the first regional summit by Keystone outside their Colorado campus.

In addition to helping out with MGRRE’s K-12 outreach efforts, Mike Grammer and his students continue to work on various reservoir characterization projects in concert with Bill Harrison, Dave Barnes and Robb Gillespie. This summer the completed three Niagaran reef (Silurian) projects and an Ordovician Trenton Black River study should be completed by Spring of next year.

Amy Noack worked on correlating pore architecture and sonic velocity values to facies and sequence stratigraphic intervals within the reefs. Amy defended in May and joined EOG Resources in Midland. Jessica Wold is evaluating the reservoir architecture within a major gas storage reef utilizing a sequence stratigraphic framework to drive a geostatistical model. Audrey Ritter is also working with Niagaran reefs extracting the record of relative sea level changes and corresponding sequences from around the basin to correlate to global eustatic sea level and to evaluate the control of basin wide sequence architecture on the reservoir distribution of these reefs. Jess and Audrey both accepted positions with ExxonMobil.

Jennifer Schulz is working on the Trenton/Black River play in southern Michigan. Jennifer’s main focus is to evaluate the controls on reservoir properties and to test whether the porous intervals are controlled by regional structure (the current thought) or whether there are other controls, such as primary depositional environment or the sequence stratigraphic framework. Jen has already done one internship with a petroleum company, and turned down another one this year to spend more time on her thesis. Based upon the interest in her project at different venues, we expect to keep our employment rates at 100%.

A new student, Heather Qualman, began working on another gas storage reef (Niagaran) this past semester. As with the other students, Heather will be doing a lot of core work and taking advantage of MGRRE’s unsurpassed subsurface resources, but she will be testing multiple geostatistical realizations of a 3-D model of the reef while incorporating the sequence stratigraphic framework defined in other reefs around the basin by the other students. Her main goal will be to test the various outputs provided by the software package petrel, and to ground truth and evaluate them based upon rock and log data along with analogs from elsewhere in the geologic literature.

Mike welcomed two PhD students this Fall. One is visiting from Egypt for a year to learn more about sequence stratigraphy and reservoir characterization, and the other is fully funded from Saudi Aramco. The Saudi student will be working on a project based in his home country which will hopefully open some doors with Aramco and possibly other groups to expand MGRRE’s “sphere of influence”.

Other than trying to keep the students honest and hardworking, Mike continues to co-lead the AAPG Bahamas Modern Carbonate trip – this year was the 12th year, and he lead a trip for Nautilus Geotechnical to the Paradox Basin. He continues some work with Petrobras down in Brazil. In addition on the student field trip to the Paradox Basin in June, Mike and Bill hope to run another modern trip in the near future so let us know if you are interested in going to Florida, the Bahamas or Belize.
Dr. Sauck travels to Egypt

I went there (April 27 - May 15) mainly under the “channel” program for incoming PhD student Akram Aziz, from Suez Canal University. This Egyptian program funds the student for a year or more during his stay at WMU, plus it provides an advance two-week trip for the US advisor (me), and also a trip to WMU for his Egyptian advisor near the end of Akram’s stay at WMU. Thus, my trip was the advance trip to meet with Akram, his committee, and to visit his field research areas. I also spent a weekend in Akram’s home town, Port Said, at the north end of the Suez Canal. I was lodged in the Mercure hotel in Ismailia (with a view of the Suez Canal) for more than a week while at SCU. I was graciously hosted by Drs. Mohamed Rashed, Farouk Soliman, and El-Arabi Shendi, all of whom have visited WMU at least once. We visited Akram’s field sites in the extreme NW Sinai (E of the Suez Canal and several kilometers S of the Mediterranean coast). He is doing geophysical surveys over small parts of two large archaeological sites, both located along the general corridor between northern Egypt and the Middle East that is termed the Horuz Road. One of the sites is a small fortress, Heboua II, Pharaonic in age, that probably guarded the SE end of a crossing over the Pelussic Channel (the easternmost paleo-distributary of the Nile, long since silted in). The second site is that of a sizable Roman city, named Farama, whose fired brick outer wall is very evident. This site is surrounded by large mounds marking other peripheral constructions outside of the main wall. While at SCU, I also conferred with a post-MS candidate for a visiting scholar trip to WMU, Mr. Mohamed El-Sayed Ahmed, whose papers appear to be in order for a 3-month visit to WMU starting in Aug.

I spent one day with Ihab Ali Osman, (graduate student of Agriculture. This is also the home institution of several recent visiting scholars to the WMU Dept. of Geosciences, the most recent being Safie Metwally. While there, I conferred with several other candidates for the visiting scholar program. One, Dr. Ayman Al Temamy has his papers in order for late summer to early Fall travel to Kalamazoo for a 1-year period.

Another day was spent at Cairo University, Department of Geophysics, where I was hosted by Dr. Khalid Essa (who had spent a year of his post-doctoral visit at WMU). I presented a third seminar for that Department, in a lecture room decorated completely in red (by Halliburton). I was very well received and spent hours talking with other faculty who had spent graduate years at various US universities, including MSU.

In summary, it was a very successful trip, making lots of contacts as well as learning that our Department is becoming quite well known among many Egyptian Universities and several federal research agencies. Many of their geoscientists are eager for a chance to make some kind of scientific visit to WMU. Lamentably, I did not have the opportunity to do any field geophysical surveying, as I had done on my previous five trips to the Sinai and Eastern Desert of Egypt, but there will probably more opportunities for that in the future.
New Course
GEOS 2020 Egypt-Civilization and Geology

by: Robb Gillespie

During the past year, I’ve been involved in developing a new course, GEOS 2020 “Egypt – Civilization and Geology.” It all began when Dr. Al Kehew and I attended a meeting at the Haenicke Institute for Global Studies here at WMU. The Institute was looking for faculty interested in developing a more global aspect to their courses, and this appeared to fit-the-bill for many of us in the Geosciences Department.

Dr. Alan Kehew has been doing research in Egypt for a number of years now, and has developed many strong connections with faculty members at South Valley University in Qena, Egypt. Dr. Bill Sauck and Dr. Mohamed Sultan are also heavily involved with on-going research projects in Egypt. The Geosciences Department now has a significant number of Ph.D. students and visiting professionals from the Middle East, and WMU Geosciences is now recognized as one of the most active U.S. academic institutions conducting Middle Eastern geological research. The department’s “Compact Plan” outlines our desire to eventually establish a “Center of Excellence in Middle Eastern Science” here at WMU. Although I am not directly involved in any Egyptian scientific research, I have long been interested in Egyptian history and culture. So, developing a course about Egyptian geology as it relates to the country’s civilization appeared to be a great fit.

We quickly began putting together an outline for the GEOS 2020 “Egypt – Civilization and Geology” course. The course will be held in two parts. The first portion of the course will be a semester long, three credit offering held during the spring semester. This will provide the students with all the background materials they need to fully understand and appreciate the second portion of the course, a 2 week field trip to Egypt. The semester coursework will be offered by the Geosciences Department through the College of Arts and Sciences. The field trip portion of the course will be offered by Geosciences through the Haenicke Institute for Global Studies – Study Abroad Program. This new course involves multi-organizational and multi-departmental interaction and cooperation, and will serve as the new model for this type of innovative program.

Many people were involved in putting this all together. Brett Berquist at the Haenicke Institute was the driving force for making the Study Abroad portion of the course become a reality. Dr. Mohamed Sultan, our Geosciences Chairman, quickly became part of the group, and Mustafa Mughazy, from the Foreign Languages Department joined the team shortly afterwards. This summer, I joined Dr. Mughazy and his study abroad “Intensive Arabic” course in Egypt. I received a grant from the Haenicke Institute to cover most of my expenses, and an award from the Geosciences Department (co-recipient of the Geosciences 2008 Faculty Award) covered the remainder. I visited numerous sites of interest, refined our outline for the 2 week field trip through Egypt and made the contacts necessary to conduct the trip. This trip will run during the first two weeks of May, right at the end of the spring 2009 semester.

This is going to be a great course. The semester-long portion will cover Egyptian geology, history, anthropology, cultural studies, religion, art, literature, and just about any other disciple you can name. The course will then culminate in an in-depth field trip through Egypt that will introduce students to the excitement of global study and travel. Alexandria, the Pyramids at Giza, the Sphinx, Cairo, Abu Simbel, Aswan, Luxor, Karnack, and the Valley of the Kings are just some of the many sites we will visit. We are saving a very limited number of spaces for geo-alumni that may wish to be part of the grand adventure. Contact us now at robb.gillespie@wmich.edu for more information.
Earth Hazards and Disasters

In fall 2007, the Geosciences Department offered a new undergraduate, general education course entitled “Earth Hazards and Disasters.” The course format includes two lectures plus one hour and 20 minutes of discussion section per week. The course provides an introduction to the major geologic hazards affecting the earth, including impacts, volcanoes, earthquakes, tsunami, mass wasting, and flooding. Emphasis is placed on how these hazards affect human society and how geoscience and technology are used to identify, understand, and manage potential hazards. Essential concepts in earth science (including uniformitarianism vs catastrophism, plate tectonic theory, formation of the solar system) will be used to explain how, where, and why certain hazards occur. Students are engaged in thinking critically about earth hazards, their costs, and their consequences.

The course will enable students to become better citizens by making them aware of not only the geologic hazards they (and others) face in different parts of the world, but by understanding the complex interplay between science, technology, society, and the natural world. They also acquire an understanding of how potential hazards impact their daily lives, for example in buying or building a home. Finally, they learn to separate fact from fiction in “Hollywood” portrayal of earth disasters.

Climate Change: Geological Perspectives

Because of the significance of climate change and global warming to the geological community, and to society at large, the Department of Geosciences is proud to announce that we have proposed a new course entitled, “Climate Change: Geological Perspectives”.

This will be a general education course, and we are confident that enrollments will be significant. Because geology has contributed more than any other discipline to this interdisciplinary subject, we feel that the Department of Geosciences is the logical home for a basic course dealing with climate change and global warming. Duane Hampton has led this effort, and it is likely that this course will be approved this year, and we can start teaching as soon as Fall 2009.
Introducing our New Graduate Students . . .

Hatem El-Sayed, Shawn McCloskey, Ruth Nair, Joy Gryzenia, and kneeling: Meghan Good and John Thornton

Jinal Kothari and Farshid Keshavarz
Abdou A. Abou El-Magd, Ph.D. Candidate

I am so excited to complete my second year here at Geosciences Department. The last two years of 2007 and 2008 were so busy and challenging to me at the same time. I had the pleasure of being a TA for the Mineralogy class with Dr. Koretsky during two semesters: Fall 2007 and Fall 2008. I also had a good time and really enjoyed TAing the Petrology class with Dr. Chase during Spring 2008. In Summer II 2008, I had a good experience TAing three modules in the Hydrogeology Field Course: Environmental Surface Geophysics, Groundwater Sampling & Monitoring and Principles of Aquifer Testing. In Spring 2008, I won the Advisory Council Field Camp Scholarship for second time to complete all field course modules.

In addition, I delivered a general talk in the department seminar series about the Paleoclimates of North Africa: Constraints from Remote Sensing, Modeling and Isotopic Data. Actually, it was a general idea of my dissertation and now I am working with my advisors Dr. Kehew and Dr. Sultan in collaboration with committee members Dr. R.V. and Dr. Cutrim to compile data, interpret and gather relevant information to be ready for defending a dissertation proposal soon.

I felt little bit lonely during the course of my first year (2007), as many of my sincere colleagues here, Nathaniel Barnes, Tsigabu Gebrehiwet, Rennie Kaunda and Soumya Das, graduated and moved on to their new positions, but now I am happy to have new graduate students especially from out of state and particularly from Egypt, Saudi Arabia, Iraq and India.

Michelle Barger, M.S. Candidate

It is my fifth and final semester here, and I have been specializing in Geochemistry with Dr. Johnson Haas, Dr. Carla Koretsky and Dr. Alan Kehew. My efforts involve investigating the solubility of uranium dioxide (UO$_2$) when the mineral comes into contact with three acids that can exist in the geochemical cycle. The ligands are citric acid, which is ubiquitous and naturally occurring in the subsurface, and two synthetic chelating agents, Nitrilotriacetic acid (NTA) and ethylenediaminetetraacetic acid (EDTA).

Because UO$_2$ is a potential pollutant from uranium mine activity and the storage of nuclear waste it is important to understand how the solubility of the mineral may be enhanced when it encounters acids that are frequently found in the near subsurface. I hope my research will contribute to a better understanding of the environmental threat that UO$_2$-ligand chelation may present to communities and nature. I plan to present my recent results at the upcoming GSA conference in Houston.

The time I have spent at WMU has afforded me great academic growth and I look forward to completing my thesis and plan to apply to Ph.D. programs.

Travis Hayden, Ph.D. Candidate

Travis Hayden, was lead author of an article in the April issue of Geology Magazine - published by the Geological Society of America. Travis collaborated with Dr. Michelle Kominz and other authors to write the article titled, “Impact effects and regional tectonic insights: Backstripping the Chesapeake Bay impact structure.”
2008 Geosciences Faculty Awards

Dr. Robb Gillespie holds up his Geosciences Faculty Award. Robb truly does above and beyond for the Department.

Dr. David Barnes is pictured here with his wife (Teresa) holding his Geosciences Faculty Award. Dr. Barnes has been involved in some very exciting CO2 research.

2008 Geosciences Student Awards

Congratulations to our award winners!

2008 Dept. of Geosciences Graduate Research and Creative Scholars Award: Travis Hayden (above left)

2008 All-University Graduate Research and Creative Scholar Award: Adam Milewski (above middle)

2008 Dept. of Geosciences Graduate Teaching Effectiveness Award: Zhanay Sagintayev (above right) and Audrey Ritter (absent from picture)

Shawn McCloskey (center), Geosciences Presidential Scholar, with WMU President John M. Dunn and Faculty Senate President, Dr. Mary D. Lagerwey.

Congratulations to faculty member, Heather Petcovic and husband Mike, on the birth of their daughter - Alexandra!
2008 Department Awards

Graduate Research and Creative Scholar Awards
Travis Hayden
Adam Milewski

Graduate Research and Creative Scholar Poster Award
Richard Becker

Graduate Student Teaching Effectiveness Award
Audrey Ritter
Zhanay Sagintayev

Senior Honor Awards
Earth Science Education
Rachel Salim

Geology
Shawn McCloskey
Kyle Patterson

Advisory Council Field Camp Scholarship
Abdou El-Magd

Kalamazoo Gem & Mineral Society Award
Joshua Wabindato

Laton Field Camp Scholarship
Stephanie Ewald

Lauren D. Hughes Environmental Scholarship
Stephanie Ewald
Amanda Walega

Elizabeth M. Garrett Endowed Scholarship for Women in Science
Dori Becker

W. David Kuenzi Memorial Scholarship
Joshua Kirschner
Zhanay Sagintayev

Lloyd Schmaltz Award
Ryan Sibert

Lloyd and Marilyn Schmaltz Undergraduate Scholarship
MGRRE
Jennifer Trout

Distinguished Student Service Award
The Geology Clug
AAPG-Student Chapter

Best Seminar Award
Audrey Ritter

Graduate Student Research and Travel Grants
Jeff Barney
Amy Noack
Audren Ritter
Doris Becker
Travis Hayden
Adam Milewski
Joshua Kirschner
Alan LeFever

AAPGA Grants-in-Aid
Jennifer Schulz

Recent Graduates Bachelor's Degree Recipients
Earth Science Majors
David Huey
Joseph Idzior
Eric Petres
Geology Majors
Angel Cuellar
Ruth Nair

Shawn McCloskey
Matthew Morgan

Hydrogeology Majors
Kimberly Bush

Earth Science Education
Mathew Barber
Dia Borgfjord
Andrew J. Carroll
Zachary Champion
Tyler Foraker
Adam French
John Gazley
Matthew Gorham
Gregory Heimlich
Justin Hoard
Amy Jeschke
Bryan Klau
Jarod Musser
Jay Puidokas
Sarah Smith
David White

Master's Degree Recipients
Earth Science
Phillip Powers
Chris Varga

Geology
Travis Hayden
Alan LeFever
Kisa Mwakanyamale
Amy Noack
Caleb Woolever

Ph.D. Recipients
Soumya Das
Richard Becker
Adam Milewski
The Department has been very active in recruiting efforts this year!

We have had a presence at Major Excitement, GSA, the Medallion Scholarship competition, and the Parent Welcome.

We helped organize a joint open house with Math and Physics; faculty members have promoted our department and programs in our introductory classes; and MGRRE’s Susan Grammer has done presentations reaching out to the K-12 classrooms in the area.

Dean Thomas Kent, (back to camera) College of Arts & Sciences, visited the GEOS table at Major Excitement.

Paul Daniels aided Geology Club members, Nick Palfey and Shawn McCloskey in speaking with students about Geology.
Arches National Park

Dr. Harrison, Audrey Ritter, Jessica Wold, Dr. Grammer, Travis Hayden, and Jennifer Schulz. Kneeling: Amy Noack and Heather Qualman

Ready to raft the San Juan

At the 4-Corners

Canyonlands National Park
Field Trips

Geology Club at Delaware water gap

Josh by folded marble with thrust fault

GEOS 438-439 class at Lake of the Clouds

Abdou and Dr. Chase in Missouri on a field trip with students

AAPG Student Chapter's trip to the Detroit Salt Mines

Field trip to Neil Sturchio's lab at the University of Illinois at Chicago
Patrick Palus, B.S. ('96)

I moved from the Detroit area in July, 2007 to attend the University of Pennsylvania Graduate School of Education. I will be receiving a Master’s degree in May, 2008 with certification to teach general science at the secondary level. I would have liked a certificate in environmental science, but there were no student teaching placement in the Philadelphia school district. I’ve been student teaching a 7th grade general science class since October and will finish in April.

I plan to stay in the Philadelphia area after graduating. I am engaged and will be married on July 4, 2008. Christine is an Assistant Professor in Political Science at Villanova University. We met when she was teaching at U of M - Dearborn. That’s all for now. I hope everyone is doing well! (patpalus@gmail.com)

Brian Shaw, B.S. ('73)

I have just taken a new job in academia! For the past several (15+) years I have been a government researcher and an intelligence officer, and now I will be teaching it. I have joined the National Defense Intelligence College (www.ndic.edu/) and will be developing new programs in research and education, focusing on the analysis of developing science and technology threats in a new Center for S&T Intelligence. The College is a degree granting institution, and I am still located in the DC area, only my office has moved.

Nicholas Maloof, M.S. ('97)

Nicholas G. Maloof is President and General Counsel of Associated Environmental Services, LLC (AES) an environmental services, land development and real estate consulting firm based in Bloomfield Hills, Michigan. AES serves a broad base of clients in the land development, real estate brokerage, financial, legal and municipal communities. Maloof is an active member of the State Bar of Michigan Real Property, Environmental and Business Law sections, a Registered Professional Geologist in the State of Tennessee, has over nine years of experience as a transactional attorney and nineteen years of experience in the field of environmental and real estate consulting.

Maloof has advocated and been involved in what would become known as Brownfield Redevelopment since 1989 when Site Reclama-

Alumni Graduate, Amy Noack, at her first well in West Texas after joining EOG Resources.
Dick Cookman, M.S. ('70)

Retired but still involved in the operation of Enerdyne Inc., a science-nature store in Suttons Bay owned by my wife, Pat. We have two married children, Robb in Marquette and Jane in Groton, MA. Each are environmental engineers and each have two children.

Abe Northup, M.S. ('06), Ph.D. ('07)

Everything is great. We are living in Albany, which is just north of Berkeley, and we love it here. The weather is fantastic! We are just a short drive or BART ride to SF, which is a lot of fun.

We miss our family and friends, but it is nice to get away and meet new people and have a fresh start.

My job is with CH2M HILL, out of their bay area office, which is in Oakland. Oakland has a bad reputation, but I think it is a great little city, at least the area where I work. My time has been split up with 60-70% of my time in the office and the remainder in the field. Field work has been spent low-flow sampling, slug testing, doing tidal studies (determining how much the tide influences the aquifer at a particular site), and drilling (direct push, HSA, and sonic drilling). My office time is spent doing analysis and interpretation of data and contributing to writing reports.

I am working on several sites with a variety of contaminants, and at a variety of different investigative stages. One site is going into pilot scale remediation (combination of MF and base activated persulfate for the plume and thermal for the source area), at another site we are finishing the remedial investigation and looking at different mitigation strategies, and at another site we are just starting to delineate the plume and track down the source area. Overall, it is a lot of fun. So far the company and the people I work with are great. I am really looking forward to the near future here, especially getting much needed on the job experience and hopefully becoming registered the CA in a couple of years.

Hope all is well at WMU and you have a great summer.

Richard (Dick) Passero
Emeriti

Gin and I have been in Madison, CT for about 10 years. We came here after a brief stay in Hershey, PA where Gin taught in the Penn State Nursing Program.

Why Madison? Our daughter, Kathy, had settled in Manhattan where she was working her way up through the ranks at various magazines to become the editor in chief of the U.S. Air Inflight magazine and senior editor at Biography Magazine. Biography closed about the time our granddaughter, Darby Kathryn, was born which gave Kathy a chance to be a mom and do free lance writing which she had always wanted to do. Since then she has published 3 contract books, 3 short stories, many articles and is working on a 4th book. Darby has been the light of our life for almost 6 years now. We see her whenever we can including 2 trips to Disney World. I won’t enumerate her many virtues but will simply say she has a great personality and is the perfect granddaughter. Kathy’s husband is editor in chief of a trade magazine and his father is an architect (my first college major) in Maplewood, N.J., close to where my family is from. Small world.

I have spent most of my time working for the Lions Club, painting (watercolors), traveling (France and Italy) and playing some very frustrating rounds of golf. I had paintings accepted in the first two juried shows I entered and have just completed a show with several fellow artists. I am happy with my progress, but have a long way to go. I am also still designing ground-water teaching aids for a company in PA. This keeps the “little gray cells” working.

Gin spends her time walking and chatting with a good group of friends, with AAUW (especially the book group), helping out at the library, and most of all shopping for Darby. We moved into a larger condo thankfully because at least three rooms are devoted to Darby’s toys and clothes including part of my closet.

We maintain a close relationship with my family and Gin’s brother who still lives in Ohio. Our life here on the Sound is good and occasionally we have visits from WMU friends. We are just off I-95 and always like to see old friends.
Greetings to alumni and friends. Marilyn and I continue to enjoy retirement by spending most of the year in Kalamazoo, but visiting the Emerald Coast of Florida’s panhandle during January and February. We enjoy the warm weather and walking the beautiful beach. Also, it is where I can play tennis. In April and October we host some of our former students and friends sharing some Michigan wines that Bill Harrison and I make from grapes which we grow.

Next April will bring with it my 80th birthday. Wow!! It seems like only yesterday (1959) I entered the old Natural Sciences Bldg. (West Hall) to teach physical geology and historical geology, the only two geology classes WMU offered, along with physical geography classes. In August it was gratifying to hear WMU President Dunn at a meeting in MGRRE call the Geosciences Department a jewel in Western’s crown. Many students and faculty are responsible for this achievement.

I continue to participate in the activities of the Geosciences Department, MGRRE and other university functions. Marilyn and I send best wishes to all.

Keep in Touch with your GEOS Family

We are anxious to keep your current address on our mailing list and, therefore, ask for your cooperation in advising us if you move. Also, if you know of other alumni who do not receive this newsletter, please send their names and addresses, we would like to add them to our file. You may also update your information online at http://www.wmich.edu/geology/alumni_form.htm.

Name _____________________________________________________________________________
Major _________________________________ Minor ______________________________
Degree________________ _____________________________ Year___________________________
Address __________________________________________________________________________
City, State, Zip_________________________ __________________________________________
Phone _________________________________________Email_______________________________
Current Employment _________________________________________________________________
Professional Interests _________________________________________________________________
News Items ________________________________________________________________________
__________________________________________________________________________________

Return to: Dr. Mohamed Sultan, Chair, Department of Geosciences, 1187 Rood Hall
Western Michigan University, Kalamazoo, MI 49008
Phone (269) 387-5485; Fax (269) 387-5513; e-mail mohamed.sultan@wmich.edu
CAS names new director of development

Dorilee J. Schieble, CLU, ChFC, has been named Director of Development for the College of Arts and Sciences.

“In my travels, I want to meet and greet every alum and ask for your view on what the College has done well and what we can improve on to reach out to all our wonderful alumni.”

Schieble is experienced with charitable giving and philanthropy, community nonprofit information, building and maintaining business relationships, educating, team building and public speaking.

She holds a Bachelor of Business Administration with an emphasis in management from the University of Wisconsin at Oshkosh and received her CLU & ChFC designations. Schieble has lived in the Kalamazoo area since 1990, and has served as donor relations officer for the Kalamazoo Community Foundation.

“I am quickly learning about the programs and needs of all 26 departments in the College,” notes Schieble, “and I’m excited to meet the alumni and friends of WMU.

“In my travels, I want to meet and greet every alum and ask for your view on what the College has done well and what we can improve on to reach out to all our wonderful alumni. We value your experiences and the knowledge you gained while on campus, and especially in your career since attending WMU. There is much you all can share with the students of this excellent University that will put them on the leading edge in their career.”

It is important to remember, successful programs are built on more than talented students and faculty. With decreasing sources of funding, alumni and friends financial support is more important than ever.

The Department of Geosciences needs include travel funds for students to go to meetings, assistance for internship opportunities, to bring in speakers, to fund research, to support interviews and recruitment of faculty and students, to provide assistance for internship opportunities, and to support the research and educational activities of Michigan Geological Repository Research and Education.

The College encourages donors and friends to contribute to the Department of Geosciences. Gifts to Western Michigan University can qualify for a deduction on your federal income taxes, if you itemize your deductions. Your total savings will depend on your federal tax bracket. Gifts to WMU also qualify for a credit on State income tax returns for Michigan residents. The credit is limited to the smaller of: 50% of your total qualifying contributions for the year, or $100 if filing as a single or $200 if filing jointly. Your total qualifying contributions include all gifts to qualifying Michigan public institutions.

Charitable bequests play an important role in the development of Western Michigan University. Indeed, it would be difficult if not impossible to maintain our high standards of excellence without such thoughtful support. Also, as philanthropically minded people are aware, a charitable bequest is an effective estate planning tool and may create significant tax savings. Bequests are by far the simplest and easiest way to provide support. Naming the Department of Geosciences as a beneficiary in your will, trust or retirement plan for a specified amount or percentage will help insure the continuation of excellence.

If you have made the Department of Geosciences a beneficiary, we encourage you to inform us so we can properly thank you for your support. It also enables us to better plan for the future. To learn more about Department of Geosciences and their priorities or to make a donation, please contact Dorilee at (269) 387-4399 or dorilee.schieble@wmich.edu and thank you once again for your ongoing support of Western Michigan University. See page 40 for more giving options. Schieble may be contacted at dorilee.schieble@wmich.edu or by calling (269) 387-4399.
Greetings to Alumni, Students, Faculty and Friends,

The Geosciences’ Advisory Council met on April 18, 2008. Foremost among the issues considered by the Council were: 1) how the Council can be more interactive with the Department, and 2) how the Council can support some of the Department goals including attracting and retaining students, and supporting graduates of the Department. Several Faculty members presented both individual and Department initiatives, activities and achievements. The Council discussed and identified how it can provide support to these activities, and if appropriate, make recommendations to the Department.

The Council reviewed the programs proposed from the previous meeting, and after discussing the needs of the Department, formed four Council subcommittees to review the programs and prepare “white papers” for discussion with the Council and the Faculty during the upcoming fall Council meeting. The subcommittees identified were: “Mentoring and Recruitment”, “Alumni Relations”, “Fund Raising”, and “Administration Interaction”. The Council will be reporting progress on these white papers and the resulting actions taken at the Fall 2008 meeting. The Council recommendations will be completed through future informal conference calls and other Council communications.

The Council adjourned its formal session at MGRRE (Core Lab), and retired to Rood Hall for informal discussions with students during the afternoon. The discussions focused on careers in Minerals, Oil and Gas, Environmental Geology, and Hydrogeology. Members of the Council represent a wide variety of industries, and communicated to the students the skills that would be expected of them upon graduation. Council Members also encouraged students to apply for internships with the Council Members in order to get practical exposure to career demands and to strengthen their academic skills. The Council plans to conduct similar interactive sessions in the future, and encourages Alumni who have internship opportunities available to contact Dr. Mohamed Sultan, Department Chair, or Dr. Michelle Kominz, Undergraduate Advisor.

The Council will continue to support the Department and the Students through the establishment of Endowments, through mentoring, and through the identification of internship opportunities.

Respectfully submitted,
John A. Yellich, Chair and Thomas C. Kamin, Secretary
The Douglas Daniels Endowed Geoscience Scholarship and Award

It is with great sorrow and honor that the family of Douglas Lee Daniels has created this scholarship in his memory. Thanks to family, friends and colleagues we have been able to collect enough money to have an endowed scholarship. We will be giving out the first scholarship in April 2009. The scholarship is available to students who are Juniors, Seniors or Graduate students at WMU majoring in the Geosciences.

Douglas was born and raised in the Plainwell, Michigan area. He graduated from Plainwell High School in 1969. In 1973 he graduated from Western Michigan University with a Bachelor’s Degree in Geology and continued on at WMU for graduate studies. He became a State employee in 1977 as a Geologist for the Michigan Department of Natural Resources, later split into the Department of Environmental Quality. He regulated and inspected oil and gas fields, and became involved in the regulation and inspection of sand dunes. Douglas always considered himself an advocate for the people of the State of Michigan and was always vocal about the right way of doing his job.

He became a Senior Geologist, but never made the move to management as he loved being outside doing field work and not being at his desk too much. At the MDNR/MDEQ, Douglas served on several committees and was routinely sought after for his advice and the energy he brought to those projects and tasks. His favorite committee was the Outreach Committee. This committee put together field trips for the agency geologists and their families to hunt for rocks. In addition, Douglas served on Western’s Geoscience Department Advisory Counsel, and wanted to help encourage students to select Geology as a career option either in State or Public employment.

Douglas wanted WMU in the forefront of Geology, and wanted students graduating from the Geosciences Department to have the academic and personal tools that would serve them well in their future. In his free time, Douglas enjoyed collecting rock and mineral specimens either by going to sites to collect or going to auctions and buying. He would share his knowledge and “show off” his rock collection to anyone that mentioned they liked rocks. Douglas would go to his sons’ (Jason and Eric) school classes and explain how rocks were utilized in every day life. How copper became wiring, fluorite was used in toothpaste, etc. Douglas enjoyed fishing and going to Canada for family vacations (where of course he also picked up *pudding stones* and other mineral specimens).

Douglas was a man with many talents and ideas. He had an opinion on just about anything and the ability to frequently convince you that his point of view was correct. He will be missed greatly by his family, friends, government and industry colleagues. Douglas Lee Daniels will be long remembered for his integrity, hard work ethic and wit.

If you wish to make a donation toward the scholarship, please make the check payable to the WMU Foundation. For it to be properly applied please include, “for the Douglas Daniels Geoscience Scholarship” on the check.

Thank you,
Kristine A. Daniels

Mail to: Western Michigan University
Department of Geosciences
Rood Hall, Room #1187
Kalamazoo, MI 49008-5241
Attention: Kathy Wright.
Donations for 2007-08

Corporate donations for 2007-08
Bluegrass Energy, Inc.
Columbus III Production
Cook Investments
DTE Energy Foundation
ExxonMobil Foundation
HFP Investments
Huffman Royalty, LLC
Innova Exploration
Kalamazoo Community Foundation
New Horizon Energy Company
Nexen Petroleum U.S.A., Inc.
Pale Morning Dove, LLC
Pierce Auction Service
Quicksilver Resources
Stelzer Family Trust
Summit Petroleum Corporation
Tamarack Resources, LLC
Tiger Development, LLC
Trendwell Energy Corporation
Wavelet Investments, LLC

Thank You

Your generous contributions to the department support a wide array of activities and we appreciate your help. We try to thank each donor, but as with all bureaucracies we do miss someone occasionally. If we missed you, please know that we rely on your support and will continue to make every effort to acknowledge your gifts. Please accept our sincere thanks.
I support the Department of Geosciences with the following gift:

____$1,000  ____$500  ____$250  ____$100  ____$50  ____$25

____I would like to become a special donor to the
Department of Geosciences with a gift of $_____

Please designate your choice(s) for contribution

_____ Department of Geosciences Endowment
_____ W. Richard Laton Field Camp
_____ Scholarship Endowment
_____ Envirologic Technologies Endowed Scholarship
_____ Geosciences Advisory Council
_____ Quasi-Endowment
_____ Lloyd Schmaltz Quasi-Endowment
_____ MGRRE Quasi-Endowment
_____ MGRRE Operations Quasi-Endowment
_____ W. David Kuenzi Memorial Quasi-Endowment
_____ Unrestricted Development Fund
_____ Douglas Daniels Endowed Geosciences Scholarship and Award
_____ The William and Linda Harrison Endowment
_____ Other________________________________ (Specify)

My gift is to be paid via:

_____ Check (payable to WMU Foundation)
_____ Credit card (check one)

_____ Mastercard  _____ Visa

Account #: ____________________________
Expiration Date: _______________________
Signature (required): ____________________
3-digit security code: ____________________

_____ Electronic Funds Transfer (instructions will follow)
_____ Please contact me about my giving plans.

Name: ______________________________________
Phone Number: (_____) ________________________

Credit card information will be shredded after transaction.

Please mail this completed form, along with your gift to:
Western Michigan University
WMU Foundation Office
1903 W. Michigan Avenue
Kalamazoo, MI 49008-5403

Give online at www.wmich.edu/foundation/gift
(under "other designation" indicate Geosciences)