Dear Friends and Alumni

The Department of Geosciences has a lot to celebrate this year. Some three years ago, we were invited to be the new home for the Michigan Geological Survey. After three years of hard work by all interested parties, we succeeded. Legislation sponsored by Senator Tonya Schuitmaker (R. Kalamazoo), and signed Oct. 11 by Governor Rick Snyder transferred the Michigan Geological Survey from the State Department of Environmental Quality to Western Michigan University. The transfer of the survey to WMU is a testament to the scientific and technical excellence achieved by the Department of Geosciences and presents both a challenge and a major opportunity for the Department to grow and flourish. Throughout the years, geosciences faculty, staff, and students accepted the challenges and delivered, this time is no different.

With the transfer of the survey, geosciences is now responsible for generating geologic maps for the State and for the assessment of its natural resources. It is all coming together; 30 years ago Dr. William Harrison championed the Department’s efforts to bring to one place Michigan’s subsurface data sets, namely the cores, cuttings, and well logs. This effort initially resulted in the establishment of the Michigan Basin Core Research Laboratory in West Hall, and culminated some five years ago in the development of a state-of-the-art storehouse and research center, the Michigan Geological Repository for Research and Education (MGRRE), that now hosts and archives the majority of the State’s subsurface data sets. The survey will be umbrella under which MGRRE will operate; so will other relevant units such as the mapping, hazards, and outreach/education.

We have big plans and we are working together with WMU administration, the Geosciences Advisory Council, and other units on campus to make this happen. This is a project that will create new research opportunities for geosciences faculty, provide a vehicle for added training for our students, bring added recognition to geosciences and the University at large, and economic development to the State. I can not think of an initiative that can, with minimal investments, bring such voluminous rewards to the University and the State.

During our fall Advisory Council meeting—a meeting dedicated to the development of a strategic plan for the survey—there was an impressive attendance and show of support from faculty, Advisory Council members, relevant offices on campus (OVPR, CAS, Graduate College, Provost, and Government Affairs), and off campus (Representative Margaret O’Brien, State Senator Tonya Schuitmaker, and Representative Sean McCann), and representation from relevant departments (Geography, Chemistry). If we were to describe this gathering in a few words, it would be energy, synergy, and enthusiasm. Before leaving this topic, I would like to add that our new director, Alan Kehew, has already secured funding of around $100,000 from the Great Lakes Geologic Coalition & U.S. Geological Survey.

This has been a productive year for my research team. Two of my students, Doris Becker and Jinal Kothari, finished...
their M.S. degrees. Adam Milewski, a former Ph.D. student of mine, and my post-doc for the past two years, has accepted a tenure-track faculty position at the University of Georgia. Mohamed Ahmed, a Ph.D. student working with me, published a paper in Geology on GRACE data applications for monitoring hydrologic processes in large watersheds. Our group published two additional articles, one came out in the GSA Bulletin and dealt with the identification of the hydrologic settings in rift environments that are conducive for groundwater accumulation and the other has to do with the assessment of modern recharge of fossil aquifers and importance of this phenomena for the sustainable development of these aquifers in Sinai and similar aquifers world-wide.

A number of our grants are coming to an end, but we are quite happy to have been able to secure three new grants this year, one that is funded by NSF and has to do with using radar interferometric techniques to figure out where and by how much the Nile Delta is subsiding. The second is a NASA funded project aimed at using temporal GRACE gravity measurements to calibrate climatic models, and a third is funded by the State Department to develop partnership with Middle Eastern scientists and institutions. We will be developing educational modules to transfer state-of-the-art technologies on the remote sensing and GIS applications in hydrogeology.

Our loyal alums support the Department in all possible ways. The Advisory Council members are playing a pivotal role in assisting Geosciences in defining its new role as the new home for the Michigan Survey. Only weeks ago, the Council members gathered to brainstorm—with their colleagues, Geosciences faculty, WMU administrators, and our legislators—the tasks, financing, structure, and outreach activities of the survey.

Our spring banquet will be on April 20, 2012 at Western, so mark your calendars. For the past four years, and hopefully for years to come, we have been holding alum gatherings at the annual GSA meetings as well. This year’s gathering in Minneapolis was the largest of our GSA alum gatherings so far. Make time and come and meet our students and faculty in our upcoming spring banquet and/or GSA gathering.

I am proud to be a member of the family of Geosciences, a department that continues to grow and excel on all fronts, thanks to the dedication of its faculty, students, staff, alums and friends.
Dave Barnes
Hello friends and alumni,
I hope that all is well with you and yours. I have been busy all summer working on five different funded research projects and have been very fortunate to have the help of a cadre of great graduate students: Abrahim Abduslam, Beth Vandenberg, Kate Pollard, Shannon Towne, and Steve Zdan. We continue our diligent work on accelerating the deployment of carbon capture and sequestration in Michigan. We are focused on geological carbon sequestration assessment through federal research funding from the Department of Energy-National Energy Technology Laboratory (DOE-NETL) and the U.S. Geological Survey.

I would also like to acknowledge the successful completion of graduate degrees (M.S. Geology) by three other talented alums, Stephen Kelley, Kyle Patterson, and Farsheed Rock, this last academic year. Most of these fellows’ independent research projects directly assisted with the work products required for our various research projects. Each has found a great job in the energy industry—a testament to their quality and the opportunities that exist for our students. I have also enjoyed working with several undergraduate students in the context of independent research projects and/or as student research assistants, including Jessic Szkody, Brandan Vanderbeek, Melissa Hunter, Joe Adducci, and Jessica Slagter.

I had a great visit to the Netherlands last fall and presented a paper on Negative CO2 emissions through biomass combustion with CCS. This has been published as an online proceedings document and was quite well received. A couple other meeting presentations, including ES AAPG, NC-NE GSA, and a presentation at our annual meeting of the Mid-West Regional Carbon Sequestration Partnership were accomplished this last academic year. We have several talks and presentations on the calendar for the coming year and a manuscript (on biomass combustion and CCS) in preparation for submission as an invited book chapter on “Carbon Sequestration: Technology, Measurement Techniques and Environmental Effects.”

It is probably of interest to report on the current status of the CCS imitative. You may have noticed a few bumps in the road for our economy and some amount of political wrangling in Washington (and elsewhere!) recently. CO2 emissions legislation is now deeply buried by other priorities. Without a regulatory incentive for carbon emissions mitigation and in the context of some other formidable regulations for geological sequestration, the initiative has “fallen off a cliff.” In an effort to get some CO2 into the ground, CCS now has a “U” in it as in CCUS for utilization. Because of the emphasis on utilization in carbon capture, utilization and storage, CO2 enhanced oil recovery is now coming more to the forefront and we are engaged in the assessment of CO2/EOR opportunities in Michigan in several different contexts. We shall see how the politics and economics of CCUS develop in the coming year and continue to do our reservoir characterization work. This research area has wide application in what remains of the CCUS initiative as well as the energy industry, so we remain relevant!

I look forward to another stimulating year of teaching and research activities, working with the students and enjoying the passage of the seasons in our little town, Kalamazoo, Mich. I’m sure those of you who have spent long hot summers elsewhere in the country retain fond memories of WMU, Geosciences, and Kalamazoo. I hope to hear of your activities in the coming year, though with Facebook we are already pretty well connected!

Best Wishes!
Dave Barnes

Ron Chase
As I begin my 39th year at WMU, I am sadly thinking that it will be my last. I have done what I think I could at three different universities since 1964 to enrich the minds of college students. I have experienced literally thousands of friendships with wonderful young people along the way (many of whom are now beyond young). I have watched careers and families blossom, grow, and mature to the point where many of my former students have contributed to this world in manners that make me proud and envious. I have plans to hang around the department and help in whatever way I can when I am not traveling, playing music, visiting my children and grandchildren, or engaging in volunteer activities. I wish all of you well! Please stay in touch.

During this final year, I will be teaching my usual Earth Studies, Petrology/Petrography, and Slope Stability Analysis. I just received word that the U.S. Army Corps of
Engineers will be ushering me out with a grant to statistically evaluate the role of ground water in coastal bluff slope failures as interpreted from the extensive data set I now possess. It is nice to be funded right to the end. I didn’t expect that, but grabbed the opportunity when proposal solicitations were announced.

My musical activities will continue until I can no longer get a sound out of my French horn. Right now I am active in one orchestra, four chamber music groups, one and sometimes two summer workshops, and one solo recital each year. I still feel very passionate about geology and have doubled my passion quotient in later years with a love of music. I feel very fortunate. My poor, suffering wife might not feel the same.

My family continues to enjoy good health and good fortune. Chris is still my wonderful companion, although she is beginning to get worried about excessive exposure to the old guy when retirement arrives. Karl, Sandy, and daughters Ella and Sarah now live in Cherry Hill, NJ, where Karl manages the Hotel ML and attached waterpark in adjacent Mt. Laurel. Andy is in Kalamazoo where he does web design and text-writing work for a local internet support company. Scott, Colleen, daughter Maddy, and son Ethan are still in the Indianapolis area where Scott practices foot and ankle surgery at Indiana Podiatry and Riverview Hospital, Noblesville. Jamie, Kate, and son Joey recently moved from D.C. to Portland, OR where Jamie is an attorney with Stoel Rives LLP. The successes our kids have obtained basically originate from Chris’ excellent mothering skills.

Robb Gillespie
Cheers to all alumni and friends.
It’s hard to believe another great year has gone by already. The 2010 Eastern Section meeting for the American Association of Petroleum Geologist (AAPG) was held in Kalamazoo September 25 -29, 2010. Bill Harrison and I were co-general chairs; Mike Grammer was the technical program chair, and Dave Barnes was the workshop committee chair. And as usual, Kathy Wright, our hard-working Departmental secretary, did most of the work. There were more than 500 people in attendance, and it was a very successful meeting for all involved. I’m looking forward to this year’s Eastern Section meeting in Washington D.C. where I am not a chairman of anything.

Our course, GEOS 2020: Egypt – Civilization and Geology, was coming together for the spring semester. Then, at the last minute, Egypt went into convulsions, and the trip portion of the course had to be cancelled. We did conduct the classroom portion of the course for a few students that had no alternative last-minute class options. Everyone was disappointed, and it now appears that we will not even be able to offer the course this spring. Maybe I should develop a substitute course to explore volcanoes in Hawaii. Of course, that’s just inviting a major volcanic eruption in Hawaii next year.

The GEOS 1500: Geological Hazards and Disasters course continues to be popular. I’ll be doing the lecture portion again this fall. Dr. Heather Petcovic oversees the lab/discussion portion of the course. Last year, Peter Fuetz and Jennifer Trout did exemplary duty as our teaching assistants. This year, the duties will be performed by Andrew Macleod and Seth Workman. They have big shoes to fill.

Dr. Michelle Kominz is on sabbatical this coming year, so I’ll be teaching both sections of GEOS 3220: Ocean Systems, for both fall and spring semesters. Along with “Disasters” this fall, it should be a full semester with somewhere between 400–500 students in total. I’ll stay busy.

Planetary Geology (GEOS 2500) was offered for the second time last spring semester. Dr. Adam Milewski and Andrew Macleod taught the lab portion of the course. All the students earned their Mars-Rover driver’s license in one of our 3-D Geowall exercises (maybe that explains why one of the rovers is now stuck). We had very good feedback from the students, but lots of competition for planetary courses from the Department of Physics, so enrollment (16 students last semester) is less than we hoped for. More work is needed.

It has been a productive year for students with me on their master’s committees. Jennifer Schultz wrapped up her master’s thesis with a solid defense this spring. She is now working hard in Houston, Texas. Peter Fuetz is beginning to unravel the mysteries of the Trenton – Black River system, and Jennifer Trout is working hard on her fossil/core thesis. Jason Asmus and Seth Workman have asked me to be on their master’s committees, so, it looks I’ll continue to be busy for the next couple of years.

The PowerPoint presentation about our GEOS 4380/90 two-week field-camp course that we conduct in Michigan’s Up-
per Peninsula during the last two weeks of June each year is ready for display in the “Schmaltz Geological Museum” in Rood Hall. We are just waiting on computer and flat-screen equipment now (did I mention that donations are always welcome?).

Samples on loan from the collections of the Seaman Museum (the official State of Michigan Mineral Museum) at Michigan Technological University are now on long-term display in our museum. We continue to revamp and expand our “Michigan Upper Peninsula” and “Copper Region” displays. Our biggest hold-up now is the upcoming departure of Mike Durham. Mike, our Department’s most-able geotech, is leaving us, and going to the University of Georgia to work on his Ph.D. Great for Mike – but bad for us. We will most certainly miss him, and he is going to be hard to replace.

This was the fourth summer of helping Dr. Ron Chase teach the GEOS 4380: Field Studies in Geology course. And, once again, it was a great bunch of students; the largest group yet at 23 eager minds. Weather for the trip this year was cold and wet, but it was still a great time. I spent my day off exploring for a couple of new exposures. There is a great Precambrian-Achian pillow basalt section recently exposed by construction of a new Menard’s big-box store just west of Marquette, Mich. and a small section of Precambrian-Baraga Group Sudbury-Impact Debris exposed by construction of a new bridge near Ishpeming, Mich. Both are very unique exposures, and found just in time to be included in this last trip. I also led a three-day field trip around the Marquette area for the Michigan Basin Geological Society (MBGS) on Sept. 16 (go to www.mbgs.org for details), and these two stops were also part of that trip.

Tres Rios Resources, Inc., the small Texas-based oil-and-gas company I’m associated with, had a good year. But, I don’t know what our tax accountant and lawyer would do without us. I’m beginning to think I actually work for them.

The new/getting-older-fast house (10 years old now) continues to be a black hole for all forms of currency (I don’t anticipate I’ll ever change this sentence). We had a three-minute killer storm rip through the neighborhood early this summer. It took down five 100-year-old, multi-trunk cherry trees in my yard. Not one of the seven dead trees that needed to come down was touched. But, my next-door neighbor had a big tree come down and squash her brand new, two-week-old Lexus flat in her driveway. So, I guess I shouldn’t complain. Be careful what you wish for.

Robb

Duane Hampton

This last year, I rekindled my interest in groundwater modeling. I am working with Dave Barnes on several U.S. Dept. of Energy grants focusing on carbon sequestration. It is a big deal to find a source of CO2 to inject into a mile-deep saline aquifer, and the money and support to do it. While some pilot projects are under way in the U.S., there are more modeling studies. This is in keeping with the carpenter’s rule of thumb, measure it twice, and cut it once. It makes sense to thoroughly think it out before building it.

Tony Clark, Amy Manley, and Beth Vanden Berg are grad students working with Dave and me on simulating carbon sequestration. Tony is modeling the Sylvania sandstone near Saginaw, Mich., and his take on this won the best student paper award in last year’s AAPG meeting in Kalamazoo. Amy will model injection of supercritical CO2 into the Mount Simon sandstone in SW Michigan, focusing on finding the upper limits of injection pressure before we breach the confining layer or fracture the formation. Beth is interested in CO2-enhanced oil recovery. I attended three short courses this fall to learn how to use GEM, a powerful code from the oil industry, which we will all use.

continued

Drilling on a drumlin in Battle Creek, June 2011. Sayed Alfaran and Stephanie Ewald in foreground.
I am also working with Rachel Salim on laboratory measurements of capillary rise in fine sands and silts. I am concerned that the numbers, tables and formulae for capillary rise seem to be poorly-supported by actual measured values. People are making wild claims about how deep oil will penetrate into fractures and how we can recover it based on the bogus numbers out there.

Hussain Alfaifi and I are working on evaluating the Bouwer and Rice slug test method. I am convinced there is something funny about this method's way of determining the radius of influence of slug tests. Since this seems to be wrong—and the original data supporting their method is missing—it makes sense to me to reevaluate this entire method, even though it is the de facto standard among hydrogeologists and seems to work fairly well.

In the past year, I have also been busy teaching. I am trying to get a new class, GEOS 2200: Climate Change: Geological Perspectives, to where it can begin to get the attention it deserves as a general education class. I taught it January to April 2011 using the second textbook in the two-year history of the class. I have already requested a different textbook for next year to replace one of the two books. Hopefully, the third time is the charm. This class has potential to open people’s minds and make a difference—if we can get students to enroll.

I am pleased to announce the birth of our sixth and seventh grandchildren last year. My kids have been busy, and that has kept Cathy and I going. I hope all is going well with you and your family.

Duane

Core from a tunnel valley, Barry County, June, 2011. The reddish material is either weathered Saginaw Fm. sandstone or a paleosol on top of the Saginaw. Depth is approx. 110 ft.

Alan Kehew

Hi to Everyone,

Well, my sabbatical last year came and went much too fast, as they usually do. I spent the fall semester working on a review paper on tunnel valleys, which are eroded by meltwater under a glacier. As part of this project, I spent a month at the University of Aarhus, Denmark, working with a very well-known European glacial geologist, Jan Piotrowski.

At Jan’s suggestion, we added another co-author to the paper, Flemming Jørgenson, a geologist with the Geological Survey of Denmark and Greenland. This paper is still in preparation, but I hope to have it submitted by the end of the year.

In the winter semester, it was back to the usual teaching schedule. From a research standpoint, my involvement with geologic mapping through the Great Lakes Geologic Mapping Coalition and the STATEMAP program has been very rewarding. This mapping has been done, to date, through the Office of Geological Survey (OGS), MDEQ. John Esch, at OGS, has been my collaborator. We have just finished Barry County and started this year on Calhoun County. It was the mapping in Barry County that really piqued my interest in tunnel valleys. In addition to the review paper, I will be giving a paper this summer at the International Quaternary Association congress in Bern, Switzerland, a meeting that occurs only once every four years.

There will be a special issue of the journal Boreas from our session on subglacial processes and I hope to make a contribution to that. It turns out that there have been many papers and hypotheses on tunnel valleys, going back more than 100 years, but we are practically the only group to drill through them and find out what is actually in them. This has been done as part of the abovementioned mapping programs. To make a long story short, close to the ice margin they are deeply eroded and filled with thick sand and gravel sequences, but farther from the margin, they are shallow and have almost no sedimentary fill. There are very significant implications for aquifer occurrences arising from this work. I have included a photo of one of our drill sites last summer using the rotasonic method. Stephanie Ewald, one of our M.S. students, has been working with me for the past several years and will do her thesis on the general stratigraphy of the Saginaw Lobe, based on our rotasonic drilling program.

As far as family goes, they have all deserted me and moved to New England. Kay and I finished our house in Maine last year and reluctantly decided that she should spend a fair amount of time there taking care of the house.

Duane

continued
Our three daughters are there as well, two in Maine and one in Boston. So for the most part, I am here by myself, although I try to fly back for as many holidays and breaks as possible. Kay will still be spending some time here each spring and fall. This lifestyle is not ideal but will have to do until I retire sometime over the next few years. Before then, I hope that we can find a way to bring in a new person to the Department who will take over the mapping as I fade away into the sunset. With the transfer of the Michigan Geological Survey to the Department, we will be eligible to apply directly to USGS for mapping grants. These programs have been a very consistent source of external funding that will hopefully continue in the future.

Best,
Al

Michelle Kominz
Hello alumni and friends.

Time flies when you are up to your elbows. And it always feels like I am.

Fall 2010: Introduction to Geophysics. Need I say more? Those of you who took this class, or worse yet, took it with me, know what that means. A great deal of work. Many quizzes. Many obstacles. No time for research. I did go to the American Geophysical Union meeting in San Francisco at the end of the semester to present the first preliminary results from Integrated Ocean Drilling (IODP) leg 317. I am still working on the preliminary results and it is summer 2011. There was a pretty strong WMU presence at AGU. Travis Hayden (Ph.D. candidate) was there to present more results from his Antarctic research.

Spring 2011 brought Ocean Systems and a new clicker system, mandated by WMU for those of us who use them. The coolest thing, for me, about the new system is that I could see how students were answering before putting it up on the board for all to see. That is, I could really give feedback based on student knowledge. There were a few concepts that I was surprised to discover were hang-ups, so I think it was a good thing.

Beyond that, I was sickly. Picked up a nasty bug over Christmas and it devastated my spring term. So it was not productive for research. Nor did I get much skiing in. Skiing with the flu is not much fun. I went to the races and skied minimally. I end up as the second fastest old woman, despite my lack of practice and health. So I am hopeful about next season, if I am in Kalamazoo.

By the time I came out of the flu the semester was nearly over and I was able to get my porosity manuscript turned around for the Journal of Sedimentary Research. The paper began as a compilation of porosity based on Ocean Drilling Project data sets, mainly by two (long since graduated) undergraduates, Danielle Odette and Kyle Patterson. My main research tool is backstripping, in which the porosity history of sediments must be reconstructed. But there are limitations regarding porosity estimates and this huge database had been tempting me for a while. The holes in our knowledge include: is porosity reduction really lithology-dependent, and if so, what is the dependency? How important is sedimentation rate in comparison to burial depth? When sediments are composed of mixed lithology and grain sizes, what is the best way to model porosity reduction? In the end, we have some answers to all of these questions and it looks like I have been using a valid method all these years. Yeah! Mad dogs and scientists actually set about testing their own foolish notions. Sometimes you bite your own tail. Sometimes you are lucky.

My summer included getting my duties as undergraduate advisor in order and handed over to Heather Petcovic (Earth Science Major and Minor) and to Duane Hampton (all of the rest). I trust they will see to our students’ needs.

A trip to Edinburgh, Scotland to get caught up on the latest geological science in Antarctica was the order for mid July. The weather was excellent. Travis had his post-(IODP 318) cruise science meeting just before International Symposium on Antarctic Earth Sciences, and so had four talks to prepare (two for each meeting). I am always surprised how many Antarctic scientists I know from my previous lives.

Starting in July I began my second sabbatical year at WMU. The main purpose is to keep working on preliminary results from IODP leg 317 and leg 313. My post-cruise science meeting will be in November in New Zealand. I hope to spend some time in Austin, Texas and in Wellington, New Zealand with 317 scientists, as well as in New Jersey with 313 scientists. I look forward to reporting to you all
next year. Meanwhile, keep having fun and doing great science.

**Carla Koretsky**

Hello friends and alumni!

I hope it has been a good year for all of you. It has been another busy year for “Team Geochemistry.” Angel Cuellar and Martin Akafia finished up their M.S. degrees last summer. Angel is currently working as an environmental consultant right here in Michigan and Martin is pursuing a doctoral degree at North Carolina State University. Trevor Whitlock and Michelle Barger are both close to finished with their Ph.D. work, and will likely be defending their dissertations in summer or fall. New graduate students in the group are Ryan Sibert, Andrew MacLeod, and Ann Gilchrist.

Ryan is not actually new to the group, as he worked with me when he was a geology undergraduate, however, he has switched gears and instead of doing strictly laboratory work is now completing a field study regarding the influence of road salt on the chemistry of Woods Lake. This project has grown from some very interesting data that my environmental field geochemistry course students have collected in the last two years. Ryan, Andrew MacLeod (an undergraduate geochemistry major) and Christine Snyder spent much of last summer augmenting the class data with a field study of not only Woods Lake, but also Asylum Lake (in Kalamazoo) and Brewster Lake (in Hastings, Mich.) as part of a Pierce Cedar Creek Institution Undergraduate research grant. Their work resulted in a paper that we have just submitted for review.

Andrew decided to stay and work on his M.S. degree with me. He has just started measuring Cr(VI) adsorption on hydrous manganese oxide as a function of pH, ionic strength, metal loading and pCO2. This work is being support by a DOE grant that we were awarded last fall. Ann Gilchrist will also be working on this project, studying Cr(VI) adsorption on a variety of oxide and clay mineral mixtures. Thomas Reich, who has worked in the lab for a few years now, and also a new student, Allie Wyman, also funded by this grant. Thomas has already completed a comprehensive field and laboratory study of Cr(VI) adsorption on aluminum oxide and is now working with Allie to assess Cr(VI) adsorption on kaolinite and montmorillonite. Thomas’s work has resulted in a first authored paper that we have just submitted for review.

Five of my students (Christine, Andrew, Ryan, Michelle and Thomas) presented their work at the GSA Denver meeting. Three students (Michelle, Andrew, Thomas) and I will be attending the Geochemistry of the Earth’s Surface meeting in Boulder, Col. in June. Michelle, Andrew and Thomas each were awarded scholarships for the conference and have been invited to present their work in an international student symposium two days before the conference begins. I also plan to attend the Goldschmidt conference in August with Ryan, Andrew, and Michelle. This year, the conference will be held in Prague, Czech Republic, which should be very interesting!

In other news, Team Geochemistry participated in the KalHaven Relay for the third year in a row. We met our goal of not finishing dead last and completing the course (33.3 miles in total) before it closed. I have also continued to compete in marathons, and just ran the inaugural Kalamazoo Marathon. It was a beautiful day for running and the support from Kalamazoo was amazing! I am also showing a new horse this summer, a very cute Arabian named Traz that belongs to a friend of mine. I hope all of you have had a terrific year, and please contact me to let me know what you have been up to (Carla.koretsky@wmich.edu)!

**Heather Petcovic**

Hello geosciences friends and alumni! I am pleased to say that this summer I was awarded tenure and promoted to associate professor. My heartfelt thanks go to my colleagues and mentors in both the Department of Geosciences and the Mallinson Institute for Science Education for their support over the years. I am thankful to be part of two exciting, challenging, and supportive programs at WMU, and look forward to many years to come.

My role as the Department’s education “expert” continues with teaching courses for future elementary and secondary teachers, advising for the secondary earth science teaching major and minor, teaching and mentoring graduate students in science education (currently four doctoral students and one M.S. student), and research activities. Both my NSF grants have wrapped up data collection phases, so together with my colleagues I am busy preparing papers and talks that will share the results. I also continue as an associate editor for the research section for the Journal of Geoscience Education, and am a distinguished lecturer for
the National Association of Geoscience Teachers (NAGT) speaker series.

This summer I coordinated a weeklong professional development workshop for 21 K-12 teachers from Kalamazoo, Jackson, and Grand Rapids, Mich. The workshop was part of the MiTEP program, funded and organized by Michigan Tech (http://www.geo.mtu.edu/~raman/SilverI/MiTEP_ESI-1/Welcome.html). The goal of this program is to enhance local teachers’ knowledge of and ability to teach earth science through inquiry. We spent a very hot week in July involved in daily field trips that included: a water quality investigation at Woods Lake; exploration of Michigan’s subsurface and natural resources at the Michigan Repository for Research and Education (MGRRE); studying glacial landforms near Jackson and Mason, Mich., and visiting sites in Battle Creek, Mich., affected by the 2010 Enbridge oil spill on the Kalamazoo River. Many thanks to Carla Koreskts and her geochemistry students: Mike and Sue Grammer of MGRRE; and WMU alumnus Kris Hinskey for their contributions as guest experts. I particularly enjoyed working with the local teachers and look forward to another week with this program next summer.

In my spare time (what there is), I play Medieval and Renaissance music with the WMU Collegium Musicum and enjoy hanging out with my family: husband Mike and daughters Jessica (age 5) and Allie (age 3). The coming year promises to be both full and interesting, and I hope to meet and visit many of you at the GSA meeting in Minneapolis.

William Sauck

Hello friends and former students!

In the fall, 2010, semester I taught Geos5610 (Seismic Methods), with a class of six. That class always involves a number of “booming” field exercises, as well as a visit to Wolverine Gas & Oil in Grand Rapids. Teaching during Spring term included a small class (six) for Gravity & Magnetic Methods (Geos5620) and a large class (62) of Geos1000. That class uses the RF responders (clickers) every day, but sometimes they get confused with texting on their phones and surfing the WEB on their laptops at the same time—oh well, at least they will be good at multi-tasking.

Our exchange program with several Egyptian Universi-
Publications

Barnes

Haas

Kehew

Koretsky

Komrnz

Krishnamurthy

Sultan
We hope the past year has been healthy and rewarding for you. We have heard from several of you who are working in industry, and you tell us it’s a very busy time. That’s good to know. It’s been a very active and exciting year for us too. The most exciting development of course is that the Michigan Geological Survey (MGS) is now here at Western. We plan to use our enormous collections of samples and data and our research expertise in natural resources to jump-start several MGS projects.

We welcome any ideas you have about research topics, natural resource assessments, and outreach. Please call or email us and share your thoughts. And remember, as that famous Canadian philosopher Red Green always said, “Keep your stick on the ice. We’re all in this together.”

Here’s a brief summary of other 2011 highlights:

Repository and data management news:
- We hired several new workstudy students, as well as geology students, to help with the repository work. Many of them worked through the second hottest summer we have seen. With temperatures in the 90s, our UN-air-conditioned warehouse was not a place to be for long. We are grateful to those students who worked so hard this past year to reorganize our files and records and rebox cores. We give thanks especially to these students for doing that hard work: Jared Bowen, Hachemi Bouali, Brandon Byrnes and Hannah Owens.
- We have now finished inventorying the State’s cuttings collection, amassed during the last 80 years, and now archived at MGRRE. We found cuttings not only from oil and gas wells, but also from mineral and water wells.
- We are grateful to Howard Energy, Chesapeake Energy, and Westbay Exploration for donating collections of cuttings to us this year. Those collections include wells from the newer Trenton/Black River wells, some important deep tests in the St. Peter/PDC interval, and a few shallow strat tests drilled under the mineral well permit act. Also included were cuttings from 74 Niagaran reef tests and 68 wells reaching depths over 10,000 ft.
- We would not have dreamed how much use our cuttings collections have seen these past two years, thanks to interest in the Utica/Collingwood and the A-1 Carbonate. We are glad to have those resources here to help industry with their prospects and to help our MGRRE researchers uncover data.
- Thanks to a generous donation from EnCana Oil & Gas (USA) Inc., we are able to bring a large collection of Michigan cores back home from Texas. Many of those cores represent the Glenwood/St. Peter/PDC formations. We plan to produce reservoir property data from those rocks to evaluate their perspective use in CO2 sequestration. We expect to receive two truckloads of those cores this coming January.
- Continuing our work to digitize paper well records, we scanned an additional 700 mudlogs and hand entered porosity and permeability data for more than 420 core analyses. Those are all available now our website. Thanks to students Erica Bays and Ray Enbody for doing that work so carefully.

Staff and facility news:
- Lolita Krievs continues to amaze us with her Web and database skills. We now have a new and very powerful internal server, and Lolita is building relational databases for it. And credit goes to a very sharp student, Jeff Halleck, who worked with Lolita to build our new server. Please take a look at our website to see some of their handy work: http://wst023.west.wmich.edu/MGRRE/index.shtml

continued
• In the summer we added a new row of racking which will hold 150 more pallets of core. We are expecting to fill half that with the Michigan cores now archived in Texas.
• Linda Harrison continues to train and supervise 12 students who do the heavy lifting around here. For almost 30 years now, Bill Harrison is still directing our repository work and industry outreach. Patience is a virtue.
• On a personal note, Linda still enjoys photography and Bill accompanied her to photography workshops in Wales, Maine and Victoria this year. Bill is still very active in the vineyard and had a great crop, despite getting off to a slow and cold spring. Dave Barnes had another big garden this year, so no one was short on fiber. Bad news from his hen house, though. Egg production recently declined, prompting new additions to the flock.

Industry Outreach:
• Bill Harrison headed up our PTTC workshop in March. We had a record-breaking attendance, thanks to interest in the Utica/Collingwood and Trenton/Black River.
• All our faculty members, Bill Harrison, Dave Barnes and Mike Grammer published and presented several research papers this year. Please see the publications sections for those.
• We also responded to a robust year of requests for data, both on-site and on-line. Most visitors were from industry, looking for data to use in exploration.

Research News:
• Dave Barnes and Bill Harrison are busier than ever trying to keep up with all the CO2 sequestration projects they, together with several graduate students, are working on.

Lake Superior shoreline...a focus of the Michigan Geological Survey.

• Michael Grammer and Bill Harrison continue their work on a research project to look at stratigraphic control on lateral development of hydrothermal dolomites away from major fault planes.
• Bill Harrison continues his research gathering data from Michigan wells relative to subsurface temperatures to evaluate Michigan’s potential for geothermal energy.

K-12 Outreach:
• CoreKids K-12 earth science outreach program had an active year, exploring Michigan geology, natural resources, climate change and geologic carbon storage with over 3500 school age children in classrooms around SW Michigan, including St. Joseph, Benton Harbor, Hastings, Middleville, Battle Creek and Coldwater. Teacher professional development workshops were presented at teacher conferences and also at MGRRE.
• Susan Grammer, program coordinator, Jennifer Porter, assistant coordinator, faculty advisor Dr. Michael Grammer, and several geoscience students also worked with classroom groups visiting MGRRE and prepared presentations and exhibits for community events such as the Kalamazoo Gem and Mineral Show and Earth Day in Kent County.
• For the third year, CoreKids partnered with the Keystone Center for Public Policy and Keystone Science School, of Keystone, Colorado, to organize a Youth Policy Summit here in July, focusing on Great Lakes water resources. We welcomed participants with a BBQ at MGRRE on the day they arrived, and they worked through the week to develop their recommendations. What a talented group of young people!
• CoreKids also hosted the Michigan Earth Science Teachers Association meeting here at WMU in October. Dr. Grammer was the keynote speaker, and Drs. Gillespie and Grammer guided members on a field trip to study glacial deposits in west Michigan and bluff stability along Lake Michigan. Also in October, Susan Grammer spoke about K-12 outreach from universities and the first five years of the CoreKids program at the GSA meeting in Minneapolis.
• We are grateful to DTE Energy Foundation and Consumers Energy Foundation for their generous donations to support CoreKids’ mission during the 2011-12 academic year.
SW Michigan PLUS, a community group for advanced and accelerated K-12 students and their parents and teachers, visited MGRRE for a field trip during 2009. Even the youngest students were ready to be scientists for the day. Visitors watched a 30-minute CoreKids presentation on Michigan Geology, Natural Resources and Climate Change, and then several graduate students, faculty, staff members and volunteers made it possible to offer 8 different stations that children and parents could go to learn more about their favorite topics.

Students learned about porosity and permeability, grain size analysis, enhanced oil recovery and geological carbon sequestration, rocks and minerals of Michigan and climate change.

CoreKids at a Glance
After a successful year full of fundraising (such as the Water street coffee sales) and volunteering (Science Olympiad and Major Excitement), the geology club left Michigan for a Colorado adventure. The 10-day trip consisted of many geological stops throughout South Dakota, Wyoming, Utah, and Colorado. Dr. Schmidt walked us through the exciting history of the uplifted area. Stops included: the Badlands, Mount Rushmore, Crazy Horse, the Mammoth Site, Jewel Cave, Dinosaur National Monument, Black Canyon of the Gunnison, Great Sand Dunes National Park, Garden of the Gods, and we finished the trip in Denver.

After touring the Badlands, we hunted for agates alongside roads. The wind was treacherous, blowing up to 60 mph.

Kim Culyer, Jesse Torma, Brian Hoss, and David Gold battle the extreme wind in South Dakota while rock hunting.

Jessica Slagter, Jessica Szkody, Erica Thomas, and Sara Wild battling the wind at the Badlands.

Jessica Szkody and Jessica Slagter, enjoying the view at the Black Canyon of the Gunnison.

Austin Guzman, Jessica Slagter, and Brian Hoss at Crazy Horse.
We hiked up to an old mine to find fantastic garnet samples. (back from left): Jessica Slagter, Jeff Barney, Jessica Szkody, David Gold, Jesse Torma, Peter Slagter, Dr. Schmidt, Kevin Dodyk, Brian Hoss; (front from left): Hachemi Bouali, Erica Thomas, Austin Guzman, Melissa Hunter, Sara Wild, and Kimiko Cuyler. Dr. Schmidt brought us to see dinosaur footprints.
Graduate Student News

Student Graduates

Fall 2010
Zhanay Sagintayev-Ph.D.
Martin Akafia-M.S.
Angel Cuellar-M.S.
Stephen Kelley-M.S.
John Groh-Earth Science
Christopher Gwozdz-Earth Science Education
Matthew Novotny-Geochemistry
Ryan Bos-Geology
Gregory Sawatzki-Geology

Summer I 2011
Doris Becker-M.S.
Arthur Obiadzie-M.S.
Benton Farrell-Earth Science
Brian Weir-Earth Science

Spring 2011
Kyle Patterson-M.S.
Farsheed Rock-M.S.
Jennifer Schulz-M.S.
John Thornton-M.S.
Madison Freeman-Earth Science Education
Justin Pence-Earth Science Education
Jessica Smock-Earth Science Education
Jessica Milhoan, Geochemistry
Kevin Dodyk-Geology
Melissa Hunter-Geology
Marc Messina-Geology
Stephanie Mitchell-Geology
El Hachemi Bouali-Geophysics

Summer II 2011
Jinal Kothari-M.S.
Gene Schmidt-Geology

Student Awards

Graduate Student Research Grants
(up to $1,000)
Mohamed Ahmed
Lamees Mohamed
Ryan Sibert
Kathryn Titus

2010-11 All-University Graduate Research and Creative Scholars Award
Mohamed Ahmed

2010-11 Department Graduate Research and Creative Scholars Award
Farsheed Rock

2010-11 Department Graduate Teaching Effectiveness Award
Travis Hayden
Ryan Sibert

Speaker Awards from Eastern Section AAPG
David A. Barnes
Anthony Clark
G. Michael Grammer
John E. Thornton

Supplemental International Travel Grant (up to $600)
Mohamed Ahmed

Graduate Student Travel Grants
(up to $700)
Mohamed Ahmed
Michelle Barger
Travis Hayden

Gwen Frostic Doctoral Fellow of the Graduate College ($1,500)
Michelle Barger

Gwen Frostic Doctoral Fellow of the Graduate College ($2,500)
Travis Hayden

Speaker Awards from ESAAPG
Best Paper Award—David A. Barnes
Best Student Poster—John E. Thornton and G. Michael Grammer
Best Student Paper—Anthony Clark
Recent Field Trips

Carla Woods Lake

Woods Lake

Diagram

Writing on mountain

Group photo

Taking notes on the mountain

Mountain climbing

Mapping out on street

Research on mountain wall

Teacher and student
Dr. Grammer’s 4 Corners Field Trip

Dr. Grammer

Student Handstand

Student and canyon

Group Picture

Ram

Radioactive

Summer Internship in Permian Basin

Jason Asmus and John Thornton on top of Permian Reef Trail

Jason Asmus at drilling rig

John Thornton at Salt Flat Graben
Howard A. Nevins received his Bachelor of Science in Geology from Western Michigan in 1978. He was a three-year letter winner in football at WMU; captain of the team; second-team Mid American conference linebacker; and recipient of the President’s Award for Leadership his senior season. Field camp studies were performed through Miami of Ohio University in the Wind River Range, Wyoming. Work towards his MBA was undertaken at WMU, Morehead State, and the University of Evansville.

Nevins is a 30-year veteran of the oil and gas industry, he started his career with Ashland Petroleum Company (Marathon) working throughout the Appalachian Basin initially in coal mapping, reserve calculations and mine planning. After two years, he was promoted to special projects geologist in charge of exploration and investment on behalf of Ashland in the Illinois, Black Warrior and Michigan basins. Nevins’ next work experience was as founding partner in Lafitte Exploration, Inc. doing prospect generation, oil and gas development, and engineering studies in the Illinois and Michigan basins.

In 1987, Nevins formed Trey Exploration, Inc. (Trey)—an oil and gas exploration and production company—as its president and sole owner. Trey continues (after 23 years) to do geological investigations and exploration for oil, gas, and coal bed methane, and undertakes many joint ventures in numerous oil and gas producing areas. Nevins continues to be an active oil and gas operator at this time with producing properties in Illinois, Indiana and Kentucky.

In 1989, Nevins co-founded Midwest Custom Chemicals (MCC), Inc. a manufacturer and distributor of internationally recognized proprietary chemicals used in demulsification, waste water clarification, and oil and gas production. MCC had manufacturing facilities in the U.S. and Dubai, UAE. MCC was sold to Weatherford International in 2007; Nevins is currently the North America Business Unit Manager for Weatherford’s Engineered Chemistry Division.

In 1992, Nevins founded, and was president, of American Enviro Services, Inc. a regional leader in environmental consulting, emergency response, and used oil recycling. In 1997, AES was sold to U.S. Energy Systems, Inc., an international leader in “green energy” with a focus in geothermal, landfill gas, and combined heat and power systems. Nevins was named chief operating officer for North America and Sweden operations and served on the board of directors.

Nevins has remained active in numerous professional and community organizations and attempts to add value to these organizations to make the region where he lives and works a better place. He has been married to his high school sweetheart for 33 wonderful years and has two fantastic daughters that have exceeded all expectations he could have had, and this makes life a success. Finally, he has been blessed with two grandchildren that makes the circle of life complete. He has always been proud he chose to be a WMU Bronco.
Greetings to Alumni, friends, Faculty and Students,

Members of the Geosciences Advisory Council met at the WMU MGREE center both in the spring and fall of 2010, and again in the spring of 2011. The 2011 meeting was held Oct. 7 of this year. The Council recognizes that the Department of Geosciences has evolved into one of the premier geosciences departments in both Michigan and in the United States. As graduates and friends of the Department, members of the Advisory Council hope those who receive this newsletter recognize the Department as a family of faculty and supporters with a common goal. That goal is being the best in the geosciences community.

It is the wish of the council that all alumni and friends who have prospered from their relationship with the Department of Geosciences return in part the benefits they have received by offering their support either as a volunteer at local and other University functions, as an Ambassador of Geosciences at professional meetings where students and/or faculty are presenting papers, as an unofficial recruiter for the Western Michigan Department of Geosciences, and as a contributor, to the best of your ability to support the Department in its continuing initiatives and endowments. You may find information on endowments on the Geosciences Web site, see giving: http://www.geology.wmich.edu/how-to-donate.html

The council has been a major force in support of the relocation of the Michigan Geological Survey, supported field programs to MGREE, and the Department of Geosciences. It has provided guidance to both undergraduate and graduate students through informal meetings and events. It has provided support for the continuation of the hydrogeology-field program, one of the last remaining hydro-technical programs in the United States. It has tirelessly supported the establishment of a site for the field application of hydrogeology and other geosciences programs; and has assisted the Department in securing funds for both on-going and future projects and endowments.

The council represents you as an alumni and friend of the Department. It is our collective hope that all who are able will support the Department in its efforts to provide quality training and education to all who come to Western to learn.

The council encourages you to come to Western during Homecoming, or at any other time to visit the Department, to re-ignite old friendships, and to re-establish contact with the faculty and the University.

Lastly, the council welcomes four new members and presents the names of the current council, honorary and emeritus members.

Respectfully,

John A. Yellich
Chairperson

Thomas C. Kamin
Secretary

New Members 2011:
Tom Hanna ............................................... Durango, Col.
Thomas Howe.................................. Kalamazoo, Mich.
Howard Nevins ..................................Newburgh, Ind.
Kevin Wilson ..........................................Duluth, Minn.

Existing Council Members 2011:
John Yellich ...................................................Parker, Col.
Jerry Aiken .................................................Tuscan, Ariz.
Christopher Amore ..................Saint Clair Shores, Mich.
Paul Daniels ...........................................Kalamazoo, Mich.
Jim Feritto ...............................................Cadillac, Mich.
Kim Finkbeiner ........................................Kalamazoo, Mich.
Hal Fitch ...............................................Lansing, Mich.
John Fowler ...........................................Parma, Mich.
Jeff Hawkins .............................................Kalamazoo, Mich.
Thomas Kamin .......................................Flower Mound, Texas
Michael Kovacich ...........................................Arbor, Mich.
Richard Laton ........................................ Fullerton, Calif.
Ronald Parker ....................................... Kirkland, Wash.
Chris Roth ................................................. Trinity, Fla.
Bill Steinmann ........................................Kalamazoo, Mich.
Thomas Straw ....................................... New Harmony, Ind.
Gifts to Geosciences

Donations for 2010-2011

Alan R. Adams  
Angela L. Adams  
Jerry L. Aiken  
Christina A. Alexander  
Dane C. Alexander  
David Alan Balthazor  
Deborah K. Baranoski  
Michael J. Baranoski  
Kim Bass  
Elizabeth Blauvelt  
Carolyn A. Bloodworth  
James A. Bohlin  
Richard W. Bonawitt  
Terri Bonawitt  
Kathie Chaivre  
Kenneth R. Chaivre  
Christine J. Chase  
Dr. Ronald B. Chase  
Timothy L. Clarey  
Dr. H. David Cole  
Dana W. Cowen  
Timothy M. Cowen  
Cheryl Coy  
Michael N. Coy  
Ed Crain  
Jane L. Crown  
Kristine A. Daniels  
Paul A. Daniels, Jr.  
Ann Y. Erickson  
Ronald L. Erickson  
Kim L. Finkbeiner  
Judith L. Fruehauf  
Richard Fruehauf  
Harry R. Fruehauf III  
Susan Rezek Frund  
John H. Fowler  
Robert K. Garrison  
Dennis N. Gaulden  
Judy Gaulden  
Constance E. Gawne  
Linda C. Gillespie  
Dr. Robb Gillespie  
Marty Goodman  
Wayne Goodman  
Gary L. Gordon  
Dr. John D. Grace  
Dr. G. Michael Grammer  
Susan F. Grammer  
Michael C. Haines  
Pat Haines  
Thomas M. Hanna  
Linda K. Harrison  
Dr. William B. Harrison, III  
Dr. Allan P. Hascall, III  
Jeffrey C. Hawkins  
Geoffrey A. Hickok  
Diane Hickner  
James M. Horacek  
Janice R. Hylland  
Thomas D. Hyland  
Chanda S. Jensen  
Lars A. Jensen  
Edith J. Johnson  
Christopher K. Jones  
Bradley Clark Jordan  
Roy Kaplan  
Teresa Kaplan  
Alan E. Kelew  
Kay A. Kelew  
Joshua P. Kirschner  
Jeffrey B. Klan  
Teresa A. O. Klan  
Peter J. Klemikowsky  
Evija Kleshniki  
Jacob R. Koebe  
Steven P. Kohler  
Carla M. Koretsky  
Philip Koro  
Jinal B. Kothari  
Michael S. Kovacich  
Janet D. Lambright  
William E. Lambright  
Cathy Lance  
Franklyn D. LeGall  
Amy Lilly  
Santis Limes  
Robert J. Long  
Karen Lowder  
Gayle M. LoPiccolo  
Dr. Robert D. LoPiccolo  
Thomas K. Mahan Jr.  
Thomas Mall  
Todd Mall  
Peter J. Marsala  
Jonelle Mascott  
Lawrence B. Mascott  
Barry C. McBride  
Beth McBride  
Betty L. McHam  
Douglas Medema  
Jennifer D. Medema  
Daniel Milewski  
Dawn L. Adams Miller  
Michelle L. Mitchell  
Timothy J. Mitchell  
Mary Rebecca Moore  
Diana Morton-Thompson  
Howard A. Nevins  
Dean G. Newman  
James H. Nidy  
Douglas B. Otten  
T. Michael Pendergrass  
James C. Peterson  
Lisa K. Phillips  
Michael J. Phillips  
Paul Potter  
Mark Richard Powers  
Laura Rankin  
David C. Rapp  
Terri Runyon-Halbach  
Brian Samson  
Dr. William A. Sauck  
Barbara E. Savage  
Bruce E. Savage  
Lloyd J. Schmaltz  
Marilyn S. Schmaltz  
William R. Schorger  
Judy Shatter  
Rick Shatter  
David R. Steele  
William K. Steinmann  
Susan J. Stelzer  
William T. Stelzer  
Timothy B. Strong  
Dr. Mohamed Sultan  
Kenneth Tatum  
Linda Tatum  
Alix E. Thompson  
Douglas E. Thompson  
F. Donald Transue  
Mardelnya Troyer  
Melvin L. Troyer  
Carol J. Tucker  
Brian S. Valle  
Erin Vanhook  
Ronald E. Vanhook  
Thomas F. Walker  
Dawn M. Weingart  
James E. Weingart  
Andrew E. Whelpley  
Anita B. Wilson  
John K. Wilson  
Kathryn A. Wright  
Richard W. Wright  
John A. Yellich

Corporate Donations

Apache Foundation  
Barratt Consulting, LLC  
Brock Engineering  
Consumers Energy Foundation  
Core Energy, LLC  
Enviroltec Technologies, Inc.  
EOG Resources, Inc  
ExxonMobil Foundation  
Fidelity Charitable Gift Fund  
The Haggard Foundation  
Marsh & McLennan Companies, Inc.  
Michigan Basin Geological Society  
Michigan Petroleum Geologists, Inc.  
Michigan Wireline Services, Inc.  
Miller Energy, Inc.  
Nexen Petroleum U.S.A, Inc  
Pale Morning Dove, LLC  
Phillips Environmental Consulting Services  
Rock Management Group, LTD  
Shell Oil Company Foundation  
Trendwell Energy Corporation  
W. B. Osborn Oil & Gas Operations, LTD  
William J. Strickler, LLC

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.
<table>
<thead>
<tr>
<th>Name</th>
<th>Project Description</th>
<th>Funding Agency</th>
<th>Type</th>
<th>Start/End</th>
</tr>
</thead>
<tbody>
<tr>
<td>Carla Koretsky</td>
<td>CAREER: Generation of sediment heterogeneity by macrophytes and macrofauna and consequences for redox chemistry and trace metal speciation</td>
<td>National Science Foundation</td>
<td>Federal</td>
<td>8/04-7/11</td>
</tr>
<tr>
<td>Carla Koretsky</td>
<td>Development of surface complexation models for Cr(VI) adsorption on soils, sediments and model mixtures of kaolinite, montmorillonite, g-alumina, hydrous manganese and ferric oxides and goethite</td>
<td>DOE</td>
<td>Federal</td>
<td>9/10-8/12</td>
</tr>
<tr>
<td>Dave Barnes</td>
<td>Cambro-Ordovician Assessment</td>
<td>University of Illinois</td>
<td>Federal</td>
<td>12/09-12/11</td>
</tr>
<tr>
<td>Dave Barnes</td>
<td>CO2 Storage Infrastructure</td>
<td>Battelle Memorial Institute</td>
<td>Other</td>
<td>12/09-9/11</td>
</tr>
<tr>
<td>Dave Barnes</td>
<td>Midwest Regional Carbon Sequestration Partnership (MRCSP): Regional Geological Sequestration Assessment, Phase III</td>
<td>Battelle Memorial Institute</td>
<td>Other</td>
<td>2/06-11/11</td>
</tr>
<tr>
<td>Heather Petcovic</td>
<td>&quot;Development and evaluation of a problem-based field and laboratory environmental geochemistry course.&quot;</td>
<td>National Science Foundation</td>
<td>Federal</td>
<td>9/08-8/11</td>
</tr>
<tr>
<td>Heather Petcovic</td>
<td>Improving the STEM workforce by improving community college teachers of science</td>
<td>National Science Foundation</td>
<td>Federal</td>
<td>8/08-8/13</td>
</tr>
<tr>
<td>Michelle Kominz</td>
<td>Ocean Leadership</td>
<td>Consortium for Ocean Leadership</td>
<td>Other</td>
<td>11/09-11/12</td>
</tr>
<tr>
<td>Mohamed Sultan</td>
<td>Integration of Grace Data with Inferences from Hydrologic Models, Geochemical Data, and Field Data for a Better Understanding of the Time-Dependent Water Storage Variability in Large-Scale Aquifers: Case Studies from North Africa</td>
<td>NASA</td>
<td>Federal</td>
<td>4/08-4/11</td>
</tr>
<tr>
<td>Mohamed Sultan</td>
<td>Mojave Water Investigation</td>
<td>California State University, Fullerton</td>
<td>Education</td>
<td>5/10-6/11</td>
</tr>
<tr>
<td>Mohamed Sultan</td>
<td>Sinai Egypt Water Resources</td>
<td>NATO</td>
<td>Foreign</td>
<td>4/07-4/11</td>
</tr>
<tr>
<td>Mohamed Sultan</td>
<td>Detailed Studies on Landslides in Jazan Area</td>
<td>Saudi Arabia Geological Survey</td>
<td>Foreign</td>
<td>7/10-7/13</td>
</tr>
<tr>
<td>William Harrison</td>
<td>Petroleum Technology Transfer Council Michigan Center</td>
<td>Petroleum Technology Transfer Council</td>
<td>Other</td>
<td>10/09-9/11</td>
</tr>
<tr>
<td>William Harrison</td>
<td>Michigan Contribution to the National Geothermal Data System</td>
<td>Arizona Geological Survey</td>
<td>Other</td>
<td>5/10-8/11</td>
</tr>
</tbody>
</table>
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 _______________________________________ Address __________________________________________

City, State, Zip_________________________ Major ________________________________

Minor_________________ Degree__________________________ Year______________________

Phone ____________________________ Email _____________________________________________

Current Employment_______________________________________________________________

Professional Interests____________________________________________________________

___________________________________________________________________________________

___________________________________________________________________________________

___________________________________________________________________________________

News Items _________________________________________________________________________

___________________________________________________________________________________

___________________________________________________________________________________

Return to: Dr., Mohamed Sultan, Chair, Department of Geosciences, 1903 W. Michigan Ave., Western Michigan University, Kalamazoo, MI 49008-5241

Phone (269) 387-5485; Fax (269) 387-5513;

E-mail mohamed.sultan@wmich.edu
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
___ Envirolec 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
___ Geosciences Study Abroad Endowment
___ Barry and Beth McBride Endowment for Geosciences
___ Peter J. Kaczor Geology Scholarship
___ Ronald Chase Endowment
___ Allan E. Kehew Endowment

__$100  __$50  __$25

___ Chris Schmidt Endowment
___ Mohamed I. Sultan Endowment for Geosciences
___ Randall Kerhin Graduate Scholarship in Geosciences
___ Other____________________

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: ____________________

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