

Geology Department Newsletter



"Educating students to shape their lives, their professions, and their societies"

January 2010

Dear alums,

The year started with sad news. Our revered Professor Emeritus, Dick Lefebvre passed away January 1st. Some of you were aware that he had been battling cancer. He managed to exceed his doctors' early estimates. Dick was at home under hospice care and surrounded by his wife, children, and grand children. I have heard from several of you personally. Common themes ring true: Dick's expectations were high and his courses were challenging...but class was always fun. Each person noted that Dick's teaching made a lasting impression on their life and career. Personally, I appreciated his mentoring and professionalism. He was a gentleman and a scholar.

Although state support for higher education is waning, our department budget is stable. This is not ideal as we grow and offer more field experiences and research opportunities for our students, but we are faring much better than many of our peers both in and out of state. I'm thankful for the financial planning that is evident at GVSU.

There are many bright spots, primarily in the achievements of our faculty. **Peter Riemersma** and **Peter Wampler** ran a field trip for students before GSA in Portland. **Pat Videtich** worked with **JoAnn Webb** to bring middle-school students to campus last summer. **Kevin Cole** is ramping up his geophysical research. **Pat Colgan** has the paleomag machine humming efficiently. **Figen Mekik** and other faculty have students presenting their research at national meetings. **John Weber** received the Universities' first ever student mentoring award. **Ginny Peterson** published in GSA Bulletin and **Pablo Llerandi-Román** established local and international collaborations.

We were fortunate to add **Heather Miller** to the Department. Heather comes to us from Texas A&M University where she focused on the interaction between human society and eco-hydrological systems. Heather was hired for her geoscience education skills, which include research in undergraduate geology classrooms on the use of inquiry and on novice teachers' use of inquiry in class.

This year's cadre of students is impressive. Over 25 were involved with research projects with faculty and many presented their results at national, state, or local meetings. It's fun to watch the students plan for field camp, from Ireland to Auckland and outcrops in between. There's chatter of the recent graduates at universities from North Carolina, Ohio, Illinois, Texas, California, Oregon, to Alaska. Others tell tales of making extra money gold prospecting in Alaska or

working on drill rigs in North Dakota. A recent email from McMurdo, Antarctica made me envious. It's equally rewarding to see a graduate quickly find work with a consulting firm here in Michigan. Many of us appreciated the informal Alumni Night at GSA and I thank **Peter Wampler** for starting a Facebook group. The Geology Club is vibrant. In addition to the occasional field trip they are studying for GREs, planning for grad school, and coordinating large groups to the annual GSA meeting.



Dick Lefebvre in Arizona last February (photo by L. Fegel)

It was a pleasure this summer to give Norman Gibson's children, a tour of the department. They had an opportunity to meet a few of our students that have benefited from undergraduate field research. The department greatly appreciates the gifts from the Gibson family, many members of the Tulip City Gem and Mineral Club, and geology faculty in growing this endowment. There is a short note on the status of our scholarships later in the newsletter and we are currently discussing the potential of honoring **Dick Lefebvre** by establishing a new fund.

As I complete my three years as department chair I will take the liberty of making a request – elevate our science. It can be as simple as helping at a K-12 school, an informed letter to the editor, or offering an internship to a geology student.

All the best in 2010,
Steve Mattox

"Grand Valley State University is a public institution with a local, regional, and state commitment, and a global perspective. We are dedicated to providing our students with the highest quality undergraduate and graduate education."

Department of Geology
Padnos Hall of Science
Allendale, Michigan 49401
office telephone: (616)-331-3728
office fax: (616)-331-3740
electronic mail: geodept@gvsu.edu
<http://www.gvsu.edu/geology/>

**In Memory of Richard H. Lefebvre
December 12, 1933 – January 1, 2010**



Dick teaching in old Loutit 118 in 1974. (P. Videtich).

Richard H. Lefebvre was a native Michigander who grew up in Milford. After taking courses at Wayne State University and New Mexico Institute of Mining and Technology, Dick earned his B.S. in geology from the University of Michigan in 1957 and his M.S. in 1961 from the University of Kansas. For his master's degree he worked on joint patterns in a fault zone in Utah. Dick found his "true love" of volcanology, while working on his Ph.D. at Northwestern University. For his dissertation, completed in 1966, he worked on Columbia River flood basalts in Washington State. Before coming to Grand Valley State College in 1967, Dick was briefly an Assistant Professor at the University of Georgia.

Being only one of two tenure-track, geology faculty in the newly formed Department of Geology meant it was critical to build a viable unit with a sufficient number of majors. Early on he instituted a summer, geology field course that was an important tool for recruiting majors into the fledgling department. Although Dick was hired primarily to teach mineralogy, hard rock petrology, and optical mineralogy, later in his career he became very involved in geoscience education and taught courses for pre-service teachers including rocks and minerals and a field course in the Upper Peninsula with Larry Fegel, which used bicycles for transportation! For several years toward the end of his teaching career he was very involved in science curriculum development at the local and state level. He also devoted a great deal of time providing workshops for in-service teachers.

While on sabbatical in 1975, Dick worked for the U.S.G.S. on the EROS (later LANDSAT) Program, and, in the following years, occasionally worked for the Survey during the summer. In fact, Dick was the first geologist at Grand Valley with remote sensing experience, and he taught a course on the topic. Dick did a significant amount of work at Craters of the Moon National Park, some of it using remote sensing techniques, and a plaque on the wall at the visitor center there acknowledges his contribution to the understanding of the geology of the park.

In the last several years of his time at GVSU, he phased into retirement by working half-time. (At least he got

paid only half his salary – I think GVSU got a deal there!) Dick was replaced by Ben Edwards (petrology) and Steve Mattox (geoscience education and volcanology). Dick enjoyed proclaiming that it took two faculty members to replace him, and that he was only working half time!



Dick leading the singing at the player piano (P. Videtich)

But those are just the facts surrounding Dick's 31 years of service to our department, Grand Valley, and his profession of geology. These facts don't address his character or the nature of the man. Dick loved life. He loved a good time, a good story, playing cards, bicycling, and, in the old days, smoking his pipe or a cigar – sometimes in class! He enjoyed everything from electronic gadgets to bolo ties, the latter usually with a polished stone as its centerpiece. And he loved to sing. At the Soil Test Lodge where we stayed on our Baraboo field trips, back in the "old days" there was a player piano. Dick loved to get everyone singing along with the piano. Then he would lead us in a rousing game of charades. On field trips while driving along in the yellow Checker (an old, very long, airport limousine prone to numerous flat tires) he led us in song, a favorite being "We all live in a yellow submarine". And he taught us a song that I still try to pass along to my students today, "Where are we geographically? Where are we geologically? Where are we stratigraphically? Where are we?!" For many of us, Dick was our first geology professor, the first to introduce us to Earth as a geologist sees it. And for those of us who remember him rushing off to study the eruption of Heimaey in the Vestmann Islands of Iceland, he taught us just how exciting life as a geologist can be!



Dick (center front) and Bill Neal (far left) with the checker cab and a gang of geology students in 1974 (P. Videtich).

The early faculty in the Geology Department always stated that their goal was to build the best undergraduate geology program in the Midwest. Dick certainly always worked toward that end. In fact, although Dick didn't take the last "Activity Report" he had to write just before his retirement too seriously, he wrote in longhand across the last page, "Still working my butt off to make GV the best there is!" Bill Neal always says that Dick was one of the "rocks" around which the department was built, and he is correct. Another of Dick's guidelines for building the department faculty was "Always hire someone better than yourself." The faculty who followed Dick might not have met that criterion, but they were inspired to live up to his expectation. Many of his students look back and see Dick as an important mentor, but few realize that he was also a mentor to his peers. Years from now, when people look back on the history of our department, Dick will be seen as a leading, crucial individual in the development of the geology and earth science programs, building quality programs, and inspiring professionalism in all who were associated with him.



From left to right is **Kevin Cole**, **Norm TenBrink**, **Dick Lefebvre**, and **Larry Fegel** (photo by Susan Jansen).

Dick didn't just help develop a rigorous curriculum and hire strong faculty that produced knowledgeable and competent geologists, earth scientists, and educators. He also did much to make our department the community of faculty, staff, and alums that it still is today. Early on he advised the Geology Club and attended and gave talks at local rock and mineral clubs. Dick was the instigator of geology picnics and held his own on the volleyball court. For many years Dick and Sandy hosted an annual Christmas party, always highlighted by Dick standing up and naming every alum, and often their new family members. And, of course, there was the "Toto Story" he retold at every Christmas party. (Confused? Recall that Dick spent time in Kansas, and think about waking up on a geology trip in a field lightly covered in snow, and you will get the idea.)

Probably only one thing meant more to Dick than the GVSU Geology Department and that was his family. Dick and Sandy had three children, Lauryl, Jeff, and Curt. Not wanting to be away from his family while doing field work out west, he and Sandy would pack up and the whole family camped out for weeks at a time. Hopefully, Dick appreciated Sandy's efforts in that "little" enterprise! When Dick and Sandy's children became adults and the family grew with each new

grandchild, the family spread out across the country, but the family still remained very close knit, and they held family get-togethers as often as possible.

Dick retired in 1998 and enjoyed a couple of wonderful, surprise retirement celebrations put on by his family. One of these occurred when his entire family, most of whom had secretly arrived in town from around the country, walked into Padnos (Loutit) 122 during his last lecture and sat down to listen in! Dick was very surprised, and very delighted. Later he and Sandy moved to Green Valley, Arizona. Like everything else in his life, he was very enthusiastic about the opportunities offered at their retirement community. He enjoyed the workshops offered there, swimming in the pool, and riding home on his bike soaking wet in his bathing suit. That way he "kept cool on the ride home!" he declared. Dick valiantly fought pancreatic cancer for 1 ½ years and lived longer than his doctors had predicted. Dick passed away at his home in Green Valley on New Year's Day, 2010, with all his family at his side. He will be missed.

Written by Patty Videtich with help from Larry Fegel and Bill Neal.

Geology Department Faculty and Staff

Steve Mattox – Associate Professor & Chair
Kevin Cole – Associate Professor
Patrick Colgan – Associate Professor
Linda Davis – Visiting Assistant Professor
Larry Fegel – Affiliate Faculty
Kelly Heid – Adjunct Instructor
Tom Hendrix – Emeritus Professor
Pablo Llerandi-Román – Assistant Professor
Figen Mekik – Associate Professor
Bill Neal – Emeritus Professor
Ginny Peterson – Associate Professor
Peter Riemersma – Associate Professor
Norm TenBrink – Emeritus Professor
Becky Touchett – Adjunct Instructor
Patricia Videtich – Professor
Lindsey Waddell – Visiting Assistant Professor
Peter Wampler – Assistant Professor
John Weber – Associate Professor
Greg Wilson – Instructor & Lab Coordinator
Linda Noel – Academic Department Coordinator
Janet Potgeter – Department Secretary

Currently there are 74 Geology & Geochemistry majors, 8 minors, and 18 Earth Science majors, and 30 minors. There are 194 students in the Integrated Science Program (pre-service teachers).

Please consider a gift to one of our departmental scholarship funds. When giving to GVSU, please specify a specific fund or give to the Geology Development Endowment Fund which is used for special needs in the department such as matching funds for equipment or field trips.

2009 Graduates

This was a great year for graduating majors. We are very proud to present an excellent crop of new geoscientists to help build a better world! We now have almost 100 majors (94) in the Geology & Earth Science programs. We hope to have more graduates coming next year!

Kate Amrhein	B.S. Geology/Biology
Stephanie Anchak	B.S. Earth Science
Curtis Barclay	B.S. Geology
Christie Barzsewski	B.S. Geology
Sara Bostelman	B.S. Geology
Jacob Brenner	B.S. Geology
Michele Dam	B.S. Geology
Chris Denison	B.S. Geology
Keisha Durant	B.S. Geology
Jason Hernandez	B.S. Earth Science
Alex Koning	B.S. Earth Science
Miguel Merino	B.S. Geology
Amanda Perry	B.A. History/Geology minor
Anthony Rodriguez	B.S. Geology
Cameron Ross	B.S. Geology
Alex Snider	B.S. Geology
Nick Spicer	B.S. Geology
Adam Wrubel	B.S. Geology
Stephen Zdan	B.S. Geology

Nathan Noll (B.S. Geology) and **Andrew Dewitt (B.S. Earth Science)** were named outstanding undergraduate majors.

Graduates over the years 1968 to 2009

The Department of Geology now has produced more than 500 graduates between 1968-2009 in Geology, Geochemistry, Group Science/Geology, and Earth Science majors.

1968 - 1	1980 - 9	1992 - 7	2004 - 30
1969 - 5	1981 - 11	1993 - 16	2005 - 17
1970 - 7	1982 - 16	1994 - 13	2006 - 26
1971 - 2	1983 - 6	1995 - 16	2007 - 21
1972 - 5	1984 - 6	1996 - 12	2008 - 20
1973 - 14	1985 - 6	1997 - 23	2009 - 19
1974 - 9	1986 - 9	1998 - 13	
1975 - 11	1987 - 8	1999 - 15	
1976 - 7	1988 - 6	2000 - 15	
1977 - 14	1989 - 7	2001 - 24	
1978 - 11	1990 - 6	2002 - 28	
1979 - 12	1991 - 4	2003 - 25	

~ 324 Geology/Geochemistry degrees have been awarded from 1968 to 2009.

~97 Group Science/Geology degrees have been awarded from 1971 to 2008.

~ 72 Earth Science Degrees have been awarded from 1972 to 2009.

~ 8 Integrated Science/Geology majors have been awarded from 2006 to 2009.

Geology Club Officers

President – **Katie Carlisle**

Vice-President – **Mary Russo**

Secretary – **Kyle Crosby**

Treasurer – **Jim Buzzell**

Social Events Coordinators – **Ben Matzke, Austin Westhuis**

Student Representative – **Allison Stepniz**

Faculty and Staff News

Bill Neal (nealw@gvsu.edu) – “I still share a work space in the department and continue to work on coastal projects with the major focus of the past year being on co-authoring a global guide to beaches to be published by the University of California Press, perhaps by 2011. The book is patterned after *Atlantic Coast Beaches* (Mountain Press). A Geological Society of America Special Paper on Vulnerable Coastal Communities also should be out soon. If you are interested in updates on coastal issues go to <http://www.wcu.edu/1037.asp> the Program for the Study of Developed Shorelines (I am now an Associate), and <http://beachcare.org> for more information. In the coming year we are gearing up to start a new Puerto Rico Project in co-operation with Dave Bush at the University of West Georgia.

Mary and I attended GSA in Portland and then traveled along the Oregon Coast and through the Cascades; our first experience there and both Mt. St. Helens and Crater Lake are great wonders. We are also the proud great grandparents of great granddaughter number 3, **Ruby**, born last May. In the meantime, it's always good to hear from alums. **Dick Lefebvre's** passing has brought back many good memories of our days gone by, and has precipitated some reminiscing that has caused me to reflect on the history of the department and how much progress we've seen. The success of the department in general and for some of you as well professionally, is part of **Dick's** great legacy.”

Tom Hendrix (tehndx@gmail.com) “As you can see from the email address above, I have joined the host of you lost souls in cyberspace! A number of friends and former students have been bugging me for years, but the final straw broke last week when Steve Mattox “congratulated” me for “having absolutely no footprint on the internet.” So if you receive jumbled, incomprehensible e-mails from me you will have Steve to thank! On a more reasonable note, Nina and I had one memorable trip this past fall as we came back from an estate-clearing session in Pennsylvania. Instead of the usual turnpike, I-69, 74 and U.S. 131 route, we dropped down into West Virginia on U.S. 219 (the crookedest road I have ever driven) to the New River gorge east of Charleston, WVA. I didn't know that the Appalachians had such a spectacular river valley. I recommend it to anyone who finds themselves in that part of the U.S. But, first read “Follow the River” by Alexander Thom.”

Kevin Cole (colek@gvsu.edu) Kevin continues to teach mineralogy and geophysics along with numerous introductory courses in the department.

Patrick Colgan (colganp@gvsu.edu) “It was a good year with excellent students, interesting projects, and fun classes. In winter, I taught glacial and Quaternary to an enthusiastic class, and Earth History to a full class of new majors. In summer, **Pablo Llerandi-Román**, **Kelly Heid** and I ran a workshop for teachers on Earth system science funded by Michigan Space Grant. I had a paper accepted to be published in *Quaternary International* with my friend and colleague from China, Zhou Shangzhe and his students. The paper discusses a chronology of glacier advances in the southeastern Tibetan Plateau and its implications for climate history. **Steve Zdan** (Geology 2009) and I prepared a manuscript on the geotechnical properties of the Saugatuck Till for submission to *Environmental Geosciences*. This work grew out of a class project in my engineering geology class.

Kelly and I spent some wonderful summer days at the beach, in the garden, and with our dogs. On a sadder note, we lost our old sheltie (Toby) at the end of the summer, we were lucky to be with him for 11 good years. In September, we got a puppy (Sammy) from the SPCA. He is a rat terrier and he has really added a lot of fun and mischief to our household. Our biggest change for the year is that we moved into a new condo in Grand Rapids. We enjoy the views of the Grand River. I am in my seventh year since my kidney disease put me on dialysis. I am very grateful to be alive, but living with a chronic disease leads to impatience with the parts of the job that seems to waste our time (like meetings). I hope everyone has a great year! Enjoy yourself...life is good and our time is short!”



Petrology students on the Appalachian field trip (L. Davis photo).

Linda Davis (davisl@gvsu.edu) – “This was a very full and rewarding year for me professionally. During the winter term, I taught petrology to a very bright and accomplished group of students. We took a field trip to the Virginia Blue Ridge and studied the development of the Appalachian Mountain Belt, charnokites of the Pedlar Massif, and regionally metamorphosed rocks. For fun and excitement, we explored the Island Ford cave near Lexington, too. As usual for first-timers, it was a rush for all of them. We only had one emergency room visit – injury on the “off-duty” Frisbee field!

I made progress on my study of Cenozoic, potassic, mafic rocks in the western U.S. with the help of **Austin**

Westhuis. Austin and I traveled to Bill McIntosh’s geochronology lab in Socorro, NM, where **Austin** crushed rocks and separated out phlogopite and feldspars for Ar-Ar dates. A very engaging Ph.D. student trained Austin and took him under his wing there. I also began a new research project working with Kyle Siemer, trying to help solve the problem of bio-rock formation at a Kent County landfill. Each of these projects is continuing. I worked closely with three students who were awarded competitive S-STEMs scholarships this year, encouraging them to become involved in research and graduate school.

I led a teaching workshop hosted by the Honors College and focused on interactive classroom activities. It was well attended by college and K-12 geology faculty. I taught Living with the Great Lakes for the first time, and learned a great deal about the geology my new home: Michigan. I also taught Environmental Geology for the first time to two large class sections. Finally, I have joined the Association for Women Geoscientist Board of Directors as the new Treasurer. It is incredibly rewarding to work with the other Board members and to be involved in awarding scholarships to deserving recipients and to fund programs that support young women in the geosciences!”

Larry Fegell (fegell@gvsu.edu) – “My teaching continues to center on GEO 202, Hydrosphere for Preservice Teachers; GEO 203, Atmosphere for Preservice Teachers; and GEO 111, Exploring the Earth, GEO 100, Environmental Geology and Geology 300, Geology and the Environment. This past summer, **Peter Riemersma** and I taught the third year of the field version of GEO 202. We took a group of students on a trip throughout northern Michigan. This July and August, Peter and I will teach a field version of GEO 201, Geosphere for Preservice Teachers. Most of our time will be spent in the western U.P. **Peter**, **Pablo**, and I are planning a trip to the U.P. this May to develop a field guide for the class. During October, I took the 202 class to Mammoth Cave. We had a fantastic experience combining the walking tours and some wild caving. The students also learned many strategies for teaching about karst. There were many local field experiences this fall for the 202 and 300 classes. My statements last year about completing my curriculum work with Kent Intermediate School District were a bit premature. I am starting a new series of workshops for area elementary teachers. We will focus on inquiry-based science instruction. I will accompany a group of integrated science majors to Philadelphia in March. We will attend the National Science Teachers Association national conference. Approximately twenty students will be going on the trip. I am extremely grateful that I was able to go to Tucson last February and to spend a long weekend with **Dick Lefebvre**. We visited the gem and mineral show and Saguaro National Park. Mostly, we shared time together. Dick was my first geology professor. He became my mentor, colleague, and friend. I miss him.”

Kelly Heid (heidk@gvsu.edu) – “The past year was a busy one. I left the Regional Math and Science Center at the end of 2008 to focus on teaching. I continued with my four lab sections of the Geo111 Exploring the Earth for the department and taught an environmental geology course at

Grand Rapids Community College. This summer between gardening, going to the beach with Pat and playing in the back yard with our dogs L.C. and Sammy. I helped with a teacher workshop “Earth System Science: Climate, Geomorphology and Geology of West Michigan”. **Pablo Llerandi-Roman, Patrick Colgan** and I slogged the fourteen K-12 teachers down into the infamous ravines, into the waters of Sand Creek at Aman Park and along the beach at Lake Michigan for three days during the mid-90 degree temperatures (hottest week of the year). Everyone survived the heat and mosquitoes, and left with a better understanding of the geology of West Michigan. In the fall, I decided that I wanted to begin a second Masters degree. I decided on the Geoscience Education program offered by Mississippi State University. Organization was the key to keeping my sanity between teaching, grading and doing my own course work.”



Katie Carlisle drilling lava flows in Hawaii for her paleomagnetic studies.

Pablo Llerandi-Román (llerand@gvsu.edu) – “My family and I are adjusting well to our life in Grand Rapids at the beginning of our 6th semester at GVSU. **Yulaiza** and **Katsí** are excelling in 4th and 1st grade respectively. Both are involved in different projects ranging from sports to classroom representatives to homework clubs. **Miriam** keeps teaching breastfeeding lessons for Latinas and is active in a group of international women in Grand Rapids. The year 2009 brought great news. Several family members from Puerto Rico visited and will be visiting us (our parents and brothers) and we started preparing for the arrival of the newest member of the **Llerandi-Soto** family. Yes, **Miriam** is pregnant and the baby boy is due at the beginning of February, exciting news! Professionally, I have developed collaborative projects with colleagues from Michigan and Puerto Rico. I co-taught a field course for University of Michigan (UM) undergraduate and graduate students in Puerto Rico (summer 2009). My colleague Dr. Jacob Napieralski (UM, Dearborn) invited me to teach and now we are collaborating on a research paper about curricular development, metacognition, and reflective thinking in field-based education. I co-taught an earth system science course for teachers with **Pat Colgan** and **Kelly Heid** and presented science education research at the last GSA meeting in Portland. In addition, I am currently working on a project

related to the stratigraphy and structural geology of volcano-sedimentary sequences and serpentinite in Puerto Rico with Dr. Laó-Dávila (formerly at University of Puerto Rico) and Dr. Tom Anderson (University of Pittsburg). **Bill Neal** and I will be collaborating with Dr. Bush (University of West Georgia) on a coastal geology project in the Caribbean for the next two years. Finally, I keep leading field trips to Ste. Genevieve and the St. Francois Mountains in Missouri and Cahokia Mounds, Illinois.”

Steve Mattox (mattox@gvsu.edu) – “Time with students was the highlight of 2009. I had an energetic GEO 201 class that traveled to Canada after the semester was over. I dived into climate data for SCI 225, a new course for all non-science elementary education majors. They were an interesting crop that grew tremendously. I worked with six different students on individual projects. **Michelle Frasco** and **Molly Hazel** set exceptionally high professional standards at the MSTA conference. **Joe Russo’s** article was just published in NSTA’s *ScienceScope*. **Kristy Butler** and I have hammered out a manuscript (about teaching geologic time using zoo animals). **Stacy Schipper** is preparing for the national NSTA meeting. **Katie Carlisle** traveled to Hawaii to drill basalt from inflated pahoehoe flows and, with **Patrick Colgan’s** help, is using paleomagnetic data to show that some flow margins are rotated after the Curie temperature is reached. It was fun to give presentations at the national GSA meeting with alum **Chris Bolhius** (Geology 1994) on teaching geology at the high school and students earning credit-by-exam. I was honored to receive the Alumni Teaching award. The ceremony was on a lovely spring evening and it was great to see so many peers and former students. Thanks to many of you for your kind words and letters. In the summer I spent two weeks teaching for Michigan Tech. We had a class of twenty Earth science teachers from Grand Rapids Public Schools. Sandy Rutherford of Eastern Michigan University and I just received a modest National Science Foundation grant. We will develop a network between Earth science teachers and their students and state universities to offer a high school geology course that earns college credit by taking an exam. **Tari** continues to teach at Grand Rapids Community College and is supplying us with a couple of new majors each year. Our children are 11 and 8.”

Figen Mekik (mekik@gvsu.edu) “Greetings. 2009 was a year that went by way too fast. I started working on my National Science Foundation grant with two students, **Mike Wicker** and **Calvin Vander Boon**. I also received an Student Summer Scholars grant with an anthropology major, **Sarah Clark**. All three students did remarkably well on their individual projects and presented their research at the AGU meeting in San Francisco this past December. This was one of the highlights of the year for me. All three received comments from many well-established scientists about how their work is like a dissertation although they are still undergrads. I am very proud of them. I also led a very well attended session at AGU and gave a talk. All three of my students will also be presenting their research on Student Scholars Day 2010.

Otherwise, I continued my work as AGU Paleooceanography & Paleoclimatology (PP) focus group

secretary. My responsibilities include putting together the program for the annual meeting of the AGU. But this year we did something new and developed an e-mailing list joining the whole PP community together (over 7800 names). Also, I gave several public talks on global climate change and presented my research as the colloquium speaker at Northwestern University, Department of Earth and Planetary Sciences.

On the personal side, I am continuing to enjoy my new home and, this year, my nephew moved to Toronto and is majoring in Cognitive Sciences at the University of Toronto. So this means I get to go to Canada a lot. Have a great year!!!"



Heather Miller, a new assistant professor in geology, will teach classes in Earth Science and Integrated Science majors.

Heather Miller (millerhea@gvsu.edu) "Howdy! 2009 has been a year of big changes and the beginning of new adventures for me and my family. I feel that I have successfully transitioned from life as a graduate student at Texas A&M University to my new position as an assistant professor in the Geology Department. I truly enjoy working with the students, as well as, my new colleagues in the department and around the university. Everyone has helped smooth my transition from student to assistant professor. It is a true joy to be doing what I am doing. My first semester here, I taught two sections of SCI 225, an integrated science content course for pre-services teachers. It has been a delight to watch my students grow intellectually, as well as challenge myself to continue to develop as an educator in my new position. Since this was my first semester here I cannot report taking any grand field trips or being part of any extraordinary educational experiences with my students; however, I can say that since I have been here, I have completed two publications with several more in the works. These publications revolve around the influences of instructors' conceptions of learning in the classroom in geology at a research university and student conceptual model development of complex coastal systems while engaged in authentic science during an introductory physical geology class. I am also very happy to declare that **Matt, Mason, Logan** and I are all adjusting to life in the Midwest and have enjoyed exploring new activities around our new

home. **Mason** (3 years) especially loves the snow! I look forward to new adventures here at GVSU!"

Ginny Peterson (petersv@gvsu.edu) "I continued my sabbatical during the first half of this year, making several trips to the University of Massachusetts, where I used the microprobe facility, learned techniques of microprobe monazite dating and collaborated with colleagues there. I collaborated on an ongoing project to help constrain the conditions and timing of formation of rocks from northern Canada. I also collected data to begin to constrain the conditions and timing of movement along the Chunky Gal Fault in western North Carolina. This was interesting and challenging work and it was fun to feel like a graduate student again! I was fortunate to receive a small Research Opportunity Award from NSF to help support my research. Two GVSU geology seniors, **Curtis Barclay** and **James Barr**, were awarded Michigan Space Grant Fellowships to collaborate with me on research related to my sabbatical work and we collaborated on a presentation at the fall GSA meeting in Portland. I am in my 8th and final year on the GSA Education committee and am currently serving as committee chair. I am also in my second year as an Associate Editor for *American Mineralogist*. I received an internal grant last year to make changes to the Petrology course, aiming for a structure that is more project/inquiry-based (implemented in winter 2010). **Pablo** is a collaborator on the grant, helping with development, assessment and evaluation. My husband, **Jon Burr**, is still employed by Sylvan Energy and mentoring an internship project of one of our current students, **Mallory Morell**. Our daughter, **Casie**, is a sophomore in high school and has begun driving on her own. Our family took a trip to Maui this summer where we connected with members of Jon's family and enjoyed beaches, waves, volcanoes, and perfect weather."

Peter Riemersma (riemersp@gvsu.edu) "I continue to teach large introductory classes (Environmental Geology and Living with the Great Lakes) with over 140 students. I had a bumper crop of 19 students in hydrogeology (Geo 440) and we enjoyed the visit by GSA Birdsall-Dreiss Lecturer (and UW-Madison Ph.D.) Chunmiao Zheng and his discussion of tracer tests at the MADE site with the hydro class. I also assisted **Steve Zdan** (Geology 2009) in his internship this summer, offered by alumna **Julie Beaton** (Geology 1982), Director of Public Works for Grand Haven. This ongoing project is to develop a presentation to explain to the general public issues concerning the groundwater contamination that underlies the city of Grand Haven. I was the co-presenter of the keynote address to fellow faculty during the FTLC Teaching Conference on August 26th, 2009. The well-received presentation was titled *The Evolving Landscape of Teaching and Learning at Grand Valley State University*. I also received a FTLC grant *Assessment of Introductory General Education Geology Courses* to analyze exams in our general education classes and develop pre-and post tests to assist the geology department in assessment of student learning. **Larry Fegel** and I taught for the third time our summer Geo 202 field course for Integrated Science students and will teach a new Geo 201 summer field course next summer. I am

continuing to recover from injuries sustained while playing on the intramural geology soccer team. Finally, **Dakota** (age seven) and I am active in the Holland Tulip City Gem and Mineral Club, attending field trips, meeting and workshops.”

Pat Videtich (videtipc@gvsu.edu) - “If the number of students in sedimentation-stratigraphy is any measure, our numbers seem to be growing! GEO 312 had a new all-time high of 22 students! Those of you who took sed-stat in 2002 when there were four of you may find that number hard to believe! After recuperating from the busy school year, I joined **Greg Wilson** and his students on a field trip. We did some amazing hikes in slot canyons and Zion, and I still have scarred shins to prove it! Plus, I finally made it to the bottom of the Grand Canyon, and back up! I can check that one off my list! Much of the rest of the summer alum **JoAnn Webb** (Group Science – Geology 2005) and I ran a new program with the able assistance of **Peter Riemersma**, **Peter Wampler**, **Pablo Llerandi-Román**, and **Chris Vandergriff**. JoAnn and I obtained funding from the Michigan Space Grant Consortium for FRESH (Field Research in Earth Science Happenings), a program aimed at getting inner city, middle school students out in the field doing earth science. The students did hands-on activities at their school and GVSU, and went on field trips to nearby parks and the ravines. Plus, they went on an ANGUS cruise, helped put together a website, learned about the importance of a college education, toured the dorms, and at an open house showed their families what they learned. But not only did the students learn about geology, some of the kids had experiences new to them like seeing Lake Michigan, cruising in a boat, climbing over logs blocking a trail, and roasting hotdogs. So, although FRESH was an incredible amount of work, it was also very fulfilling. So . . . **JoAnn** and I hope to obtain funding to continue the program summer 2010.”

Lindsey Waddell (waddell@gvsu.edu) - “I was able to join the department last winter term thanks to a 2-year, \$500,000 grant awarded to **Shaily Menon** (Associate Professor of Biology) and **Kathleen Underwood** (Associate Professor of History and coordinator of Women and Gender Studies) from the National Science Foundation ADVANCE Program. The goal of the ADVANCE program is to increase the representation and advancement of women in academic science and engineering careers, and the grant included funding for a “collaborative pipeline” through which University of Michigan post-doctoral and graduate students could gain teaching experience at a university committed to undergraduate teaching and a liberal arts and science education. Through the pipeline, I have found a very supportive department at Grand Valley in which everyone is always eager to share their ideas and experience with me. In my time here, I have taught Geology and the Environment, Environmental Geology, and I am now in my first semester of teaching Exploring the Earth. I was able to complete the final requirements for my PhD at the end of January of last year and participate in commencement at the University of Michigan in May. Over the summer, my work on a new stable isotope record from the very poorly understood abyssal subantarctic Pacific region was published in

Paleoceanography. This new record contained surprising evidence that Antarctic cryosphere expansion during the late Pliocene may actually have aided in the growth of the Northern Hemisphere ice sheets by trapping CO₂ within the deepest areas of the Southern Ocean. I have also been correlating the timing of hiatuses in the subantarctic Pacific with hiatuses in cores from other high flow-velocity regions in an effort to pinpoint periods of increased global ocean circulation during the late Neogene. I presented these findings in December at the Fall American Geophysical Union meeting and should be submitting a manuscript to *Geology* within the next few weeks.”



Lindsey Waddell is a new visiting assistant professor.

Peter Wampler (wamplerp@gvsu.edu) - “I think perhaps the highlight of my year was returning to the Pacific Northwest for the GSA meeting in Portland, Oregon. It was refreshing to smell the Douglas Fir trees and see the tall mountains of the Cascades. Prior to the meeting **Peter Riemersma**, **Greg Wilson**, and I led a two-day field trip to explore the unique geology of Oregon with 11 Grand Valley State University Students. We explored cinder cones, calderas, lava tubes, and followed the path of catastrophic floods that transformed the western United States landscape during the last Ice Age. Our trip ended on a bit of a sour note when our field trip vehicle was robbed while we were parked in the Columbia Gorge.

I continued to try new methods of reaching students in my introductory geology courses using wikis, personal response systems, field trips, and hands-on activities to engage them in the learning process. I prepared a new course in the winter term, *Geo 380, GIS Applications in Earth Sciences*, which was both rewarding and challenging. I developed a set of hand-on activities which allowed students to become proficient using GIS to solve geosciences problems.

I continue to mentor students doing original research. Students completed projects on: constructing and modifying a hydrologic model for GVSU runoff (**James Barr**); Sand Creek substrate temperature variability (**Andrew Dewitt**); experimental river flume and river meandering experiments (**Ben Matzke**); and aquifers water levels and properties beneath the GVSU campus (**Mary Russo**)”.

John Weber (weberj@gvsu.edu) – “2009 has been another busy, productive, and growth-filled year for me professionally, personally, and for our family. **Teya Li** and **Sarah** gently remind me on a daily basis of how important family is, and help me keep my "I'm an actively curious scientist" side in balance. We spent our last Christmas and spring breaks in Miami where I worked diligently at the University of Miami Geodesy lab to get two important papers completed and published, and we enjoyed evening walks and dinners etc. together. One paper summarizes my 15+ years of research on the active strike-slip fault in Trinidad; the other lays out newer GPS work on the Adriatic microplate in Slovenia, Italy and Croatia. Thanks to the alums who helped collect the lead-up field data! We also have a new *Geology* paper coming out, and a USGS open-file report, on the fossil earthquakes that we have been studying in Trinidad. This work seems all the more important given the recent M 7.0 earthquake in Haiti, which is Trinidad's mirror image transform fault in the northern Caribbean plate boundary zone. Teaching-wise, we had our best-ever weather in Baraboo this year - 70s and sunny in early November! Another teaching highlight for me was teaching the YBRA field camp in Dillon, Montana this past summer for the University of Houston. The geology and scenery are great, but it was especially fun to work with a very diverse and international group of students who are mostly headed for jobs in the "oil patch". My research with GVSU-Geology undergraduate collaborators keeps chugging along, and is a source of great satisfaction and pride. In recognition of the impact and significance of this work, I was awarded GVSU's Center for Scholarly and Creative Excellence's Distinguished Undergraduate Mentor Award. It is a pleasure to serve students this way! Thanks.”



Greg Wilson (second to left) and honors students at Toroweap Point in the Western Grand Canyon.

Greg Wilson – “I continue to enjoy teaching geology in the honors program, and working with majors in the department. This past summer, I led a field trip to the Canyonlands region that included honors students as well as geology majors. **Pat Videtich** also met up with us for a couple of weeks including the trip into the Grand Canyon. This fall, I took part in the department trip to the Geological Society of American meeting in Portland. We saw shoreline features, volcanoes,

and the Columbia River Gorge during a 3-day pre-meeting field trip. My family is doing well. **Cooper** has been spending the fall semester in Japan before returning to finish his junior year at Kalamazoo College. **Luke** is going through his senior year of high school, and we hope to spend spring break skiing in Colorado.”

Student Scholarship Awardees

Edward Tremba Geology Scholarship - The Edward Tremba Geology Scholarship Fund is supported by your donations and goes to outstanding Geology and Earth Science majors each year. Students must have a GPA of 3.00 or higher to be eligible for the award.

Curtis Barclay
Alex Frye
Kelvin Koster
Mallory Morell
Stephen Zdan
Paul Bourdon

Ashley VandenBerg
Bradley Stevens
Adam Jorgensen
Sydney Cooke
Andrew DeWitt

Tulip City Gem and Mineral Club Award - The Tulip City Award is provided by the Tulip City Gem and Mineral Club and goes to majors who make significant contributions to the geology department.

James Barr

Geology Field Camp Scholarship Award:

Christy Barszewski
Sara Bostelman
Heather Brusnahan
Michelle Dam
Chris Denison
Sarah Dettloff

Keisha Durant
Alex Frye
Miguel Merino
Anthony B. Rodriguez
Cameron Ross

Please Support Geology/Earth Science Funding

Although the economy has influenced the balance of our endowments this year we are fortunate to note that we will be able to disburse funds from our accounts that have a current value greater than \$30,000. These funds help to assist over 20 students (see above), build the department collection of rocks and minerals for teaching, and match university funds for new equipment. If your personal budget allows a gift to the department this year please consider the Norman Gibson Geology Field Study program. This fund is generously supported by the Gibson family and Norman's friends at the Tulip City Gem and Mineral Club, our faculty, and others. We are also considering starting a fund to honor Dick Lefebvre. If you are interested in helping to start such a fund contact Steve Mattox or Ginny Peterson.

The endowment balances as of 12/31/09 are as follows:

Edward Tremba Geology Scholarship \$74,882
 Geology Endowment Development Fund \$114,631
 Geology Student Field Endowment \$37,777
 Paul & Florence Miller Mineral Collection \$49,388
 Norman Gibson Geology Field Study Scholarship \$24,966

Faculty-Student* Awards & Grants in 2009

Steve Mattox received the *Outstanding Educator Award* from GVSU Alumni Association.

Figen Mekik was nominated for the *GVSU Distinguished Contribution to a Discipline*.

Peter Wampler was nominated for the *GVSU Teaching with Technology Award*.

John Weber was a GVSU CLAS nominee for Center for Scholarly Creativity and Excellence *Distinguished Undergraduate Mentoring Award*.

Sarah Clark* received a Student Summer Scholars grant for her project with mentor **Figen Mekik**.

Patrick Colgan, Pablo Llerandi-Roman, and Kelly Heid received a grant from the Michigan Space Grant Program (NASA) to offer a summer workshop for teachers in *Earth System Science Seminar: Climate, Geomorphology, and Environmental History of West Michigan*.

Kelvin Koster* received a research stipend for his senior honors thesis project.

Steve Mattox received a National Science Foundation grant for *Opportunities for Enhancing Diversity in the Geosciences to pilot Collaborations for Building Michigan Geology Talent* with Sandra Rutherford (Eastern Michigan University).

Mallory Morell* was a McNair scholar this summer. Her mentor for her project was **John Weber**.

Ginny Peterson received a Research Opportunity Award to support collaboration with Dr. Michael Williams at the University of Massachusetts. This was a supplement to an existing grant of Dr. Williams (*Collaborative Research: Lower crustal flow, shallow fabric development, and cratonic assembly - East Athabasca granulite terrane, Canada*).

Pat Videtich received funding from Michigan space Grant program to run a summer geology program for kids from the Grand Rapids school district.

John Weber received a three-year extension in funding from the Petroleum Research Fund, Type B, (2003-2009) for his project, *Active Deformation and Seismic Risk in Slovenia from Global Position Measurements*.

Faculty-led Field Trips in 2009

Winter - Pat Colgan took students on a one-day trip in Glacial & Quaternary Geology in Muskegon & Ottawa Co. He also led a trip to Grand Ledge for Earth History students. **Pat Videtich** took Sed-Strat students to Grand Ledge State Park for a one-day trip. She also took introductory students to the gypsum mine. **Lindsey Waddell** led students in her

environmental classes to trips to Aman Park, Muskegon Waste Water Treatment System in Muskegon County.

Summer - John Weber taught field camp at Red Lodge Montana for the University of Houston. **Pat Colgan, Pablo Llerandi-Roman, and Kelly Heid** ran a 3-day field workshop for teachers. They studied sedimentology and geomorphology in the campus ravines, Aman Park, and Kirk Park beach. **Pablo Llerandi-Roman** taught a field methods course in Puerto Rico for the University of Michigan, Dearborn with Jacob Napieralski.

Fall - John Weber took his structural geology students to Grand Ledge in Michigan. They also went to Baraboo and they had excellent weather, sunny and in the 70s. **Pat Colgan** led geomorphology students on a one-day geologic traverse across Ottawa County to examine glacial sediments, soils, and landforms. Students also measured beach profiles on Lake Michigan. He also went on a one-day Grand Ledge with 4 physical geology students. **Lindsey Waddell** led students in GEO 300 classes to trips to Aman Park, Holland Water Filtration Plant, Ottawa County Landfill Superfund site, Rosy Mound Natural Area, and on a Macatawa Greenway canoe trip co-led by Dick Walkotten. She also led about GEO100 students on a trip to the Kent County Waste-to-Energy Plant, the Veolia Energy steam plant in Grand Rapids, and to Rosy Mound Natural Area,



Students and staff enjoyed Crater Lake on the GSA Department field trip (photo by P. Riemersma)

GSA Conference Field Trip - Portland Oregon

Eleven Grand Valley students enjoyed a 3 day field trip in the Portland Oregon area before the GSA Meeting. Led by our local expert, **Peter Wampler**, this third annual GVSU student field trip examined the many volcanic and Missoula flood features in the area including Crater Lake, little Belknap Crater (at Dee Wright Observatory) in the Cascades and Multnomah Falls in the Columbia River gorge. Unfortunately, a rental van breakdown and break-in (theft) on the last day marred an otherwise excellent field trip. Be on the lookout for the fourth annual overnight GSA field trip that will be held immediately following (after) the GSA meeting in Denver Colorado (alumni invited!). Submitted by **Peter Riemersa**.

Guest Speakers in 2009

2009 Birdsall-Dreiss Distinguished Lecturer (sponsored by the Geological Society of America)

Will China Run Out of Water?

Chunmiao Zheng

Department of Geological Sciences,
University of Alabama Tuscaloosa, Alabama



In this lecture Dr. **Zheng** examined China's water scarcity problems amid the country's unprecedented economic growth. The presentation called on the presenter's recent research work in the North China Plain and the Ordos Basin in western China. Dr. Zheng is a visiting professor and founding director of the Center for Water Research at Peking University (China).

The American agricultural expert and environmentalist Lester Brown published a provocative book in 1995 called *Who Will Feed China: Wake-Up Call for a Small Planet*. Today, however, of a greater concern may be the question of whether the unprecedented economic growth in China over the past two decades can be sustained as the environmental pollution and water shortage continue to worsen. Some people have asked, "Will China run out of water?" This question is not merely academic: China has to nourish a fifth of the global population with about seven percent of the planet's water resources. In fact, China's State Council, or Cabinet, warned in a drought-fighting directive issued in December 2007 that even after taking into full account water-saving measures, China's water use will reach or approach the total volume of exploitable water resources by 2030. Ample evidence suggests that China faces a daunting water resource crisis. The country has been battling water shortages in its northern and western provinces for more than a decade. But burgeoning economic growth and widespread environmental pollution have aggravated the water storage problem. Is China really running out of water? What does all this mean? What can be done? This presentation will take a close look at the current water situation in China and discuss the options available to deal with the worsening water shortage problem.

Earth Science Week (October 12-17)

We had record attendance of over 300 students at Earth Science Week talks that included presentations from GVSU alumni and professors as well as outside talks of regional geological interest. Thanks to everyone who made last year's Earth Science Week a success! We invite our alumni and friends to come and share your experience with our students. If you would be willing to speak during Earth Science Week in October 2010, please contact **Peter Riemersma** (riemersp@gvsu.edu).

Hydrologic Impairment in Streams: When Water Becomes a Pollutant, **Richard Rediske** Annis Water Resources Institute, Grand Valley State University.

Geology's Role in the Multi-Disciplinary Approach to Solving Today's Environmental Business Problems, **Eric J. Hanis (B.S. Earth Science 2000)**, P.G. Burns and McDonnell, Downers Grove, Illinois.

Putting Michigan's Geologic Assets to Work, **Victoria Peacey** Health, Safety & Environment Manager, **David Huey** Geologist Rio Tinto/Kennecott Eagle Minerals Company Upper Peninsula, Michigan

Walking on Lava: A Volcanologist's Journey, **Tari Mattox** Professor, Grand Rapids Community College

Dinosaurs: More Than Just Old Bones, **Christopher Noto** Department of Biomedical Sciences, Grand Valley State University.

Derk Walkotten, project manager for the Macatawa Greenway Outdoor Discovery Center, led two field experiences for the GEO 202 and the GEO 300 classes. He is leading the efforts to develop a greenway along the river and to restore some of the floodplain to its natural state.

Mark Walton a hydrologist with the National Weather Service presented a new physical watershed model to the GEO 202 and 300 classes.

Chili Contest 2009

Thanks to all who attended and especially to those that contributed a chili, bread or dessert. I also appreciate all the judges who helped make the event a success. A special thanks to Kevin Cole who made the great trophies and to GeoClub who provided the raffle minerals. ! I was very pleased by the enthusiastic student participation with 7 chilis and 4 desserts.

Best Student Chili

Best Dessert

Hottest Chili

Most Geological Chili

Best Vegetarian Chili

Most Popular Chili

Best Overall Chili

Chili Spirit Award

Mike Wicker

Christine Barszewski

Kevin Cole

Greg Wilson

Peter Riemersma

Peter Riemersma

Peter Riemersma

Amanda Perry

Submitted by **Peter Riemersma** (Chili Coordinator)

Publications by Students and Faculty

Peer-Reviewed Science Articles & Book Chapters

Awad, A.A. & **Mattox, S.R.** 2009, Recruiting Students to Undergraduate Geoscience Programs through Dual-Credit and Dual-Enrollment Classes. *GSA Today*, v. 19(4), p. 58-59.

Bush, D.M., **Neal, W.J.** & Jackson, C.W. 2009, Summary of Puerto Rico's Vulnerability to Coastal Hazards: Risk, Mitigation, and Management with Examples. In Kelley, J.T., Pilkey, O.H. & Cooper, J.A.G. (eds), *America's Most Vulnerable Coastal Communities*: Geological Society of America, Special Paper 460, p. 149-165.

Cummings*, J. & **Mattox, S.** 2009, The Importance of Poop (Coprolites), *Michigan Science Teachers Association Journal*, p. 56-59.

Hazel*, M. & **Mattox, S.** 2009, Visualizing the Impact of Burning Coal, *Michigan Science Teachers Association Journal*, p. 42-55.

Jackson, C.W., Bush, D.M. & **Neal, W.J.** 2009, The Coastal Compartment Management Plan: Using Puerto Rico as a Model: *Southeastern Geology*, v. 46(2), p. 69-84.

Llerandi-Román, P.A. in press, Geología, la ciencia nuestra de todos los días [Geology, our daily science]. In *Ciencia Boricua*, D. Colón-Ramos, M. Feliú-Mójer & González-Espada (eds.)

Llerandi-Román, P.A. in press, ¿La punta de un volcán? Puerto Rico visto por un niño que se hizo geólogo [A volcano summit? Puerto Rico in the eyes of a boy who became a geologist]. In *Ciencia Boricua*, D. Colón-Ramos, M. Feliú-Mójer & González-Espada (eds.).

Markley, C.E., **Miller, H.R.**, Kneeshaw, T. & Herbert, B.E. 2009, Influence of Teachers' Conceptions on Classroom Education in Geology at a Research University. *Journal of Geoscience Education*, v. 57(4), p. 213-223.

Miller, H.R., McNeal, K.S. & Herbert, B.E. in press, Students' Conceptual Model Development during Authentic Science Inquiry in an Introductory Physical Geology Course. *Journal of Geography in Higher Education*.

Pilkey, O.H. & **Neal, W.J.** 2009, North Topsail Beach, North Carolina: A Model for Maximizing Coastal Hazard Vulnerability. In Kelley, J.T., Pilkey, O.H. & Cooper, J.A.G. (eds.), *America's Most Vulnerable Coastal Communities*: Geological Society of America, Special Paper 460, p. 73-90.

Peterson, V.L. & Ryan, J.G. 2009, Petrogenesis and structure of the Buck Creek mafic-ultramafic suite, southern Appalachians: Constraints on ophiolite evolution and emplacement in collisional orogens. *Geological Society of America Bulletin*, v. 121, p. 615-629.

Waddell, L.M., Hendy, I.L., Moore, T.C. & Lyle, M.W. 2009, Ventilation of the abyssal Southern Ocean during the Late Neogene: A new perspective from the subantarctic Pacific. *Paleoceanography*, v. 24, PA3206.

Weber, J., Saleh, J., Balkaransingh, S., Dixon, T., Ambeh, W., Leong, T., Rodriguez, A., & Miller, K., in press, Neotectonics and seismic risk in Trinidad, West Indies, from Triangulation-to-GPS and GPS Geodesy, and implications for infrastructure and exploration. *Journal of Petroleum and Marine Geology*.

Weber, J., Vrabec, M., Pavlovic-Preseren, P., Dixon, T., Jiang, Y., & Stopar, B. in press, Adriatic microplate GPS-derived motion and rigidity from stable interior sites, Istria peninsula (Slovenia and Croatia) and Po Plain (Italy). *Tectonophysics*.

Crosby, C. J., Prentice, C. S., **Weber, J. C.**, and Ragona, D., 2009, Logs of Paleoseismic Excavations Across the Central Range Fault, Trinidad. *U.S. Geological Survey Open-File Report 2009-1228*.

Zhou, S., Wang, J., Xu, L., **Colgan, P.M.** & Mickelson, D.M. in press, Glacial advances in southeastern Tibet during late Quaternary and their implications for climatic changes. *Quaternary International*, doi:10.1016/j.quaint.2009.11.026

Articles, Editorials, and Book Reviews

Colgan, P.M. 2009, West Antarctica and the Threat of a Sea Level Rise Disaster. *Interchange*, v. 16(6).

Colgan, P.M., 2009, Glacial Erratics, in Gornitz, Vivian (ed.), *Encyclopedia of Paleoclimatology and Ancient Environments*, Springer, Dordrecht, The Netherlands, p. 354.

Neal, W.J. 2009, Book review of: "The Formation and Future of the Upper Texas Coast" by John B. Anderson: *Journal of Coastal Research*, v. 25, p.797.

Neal, W.J. 2009, Book review of: "A Coast for All Seasons: A Naturalist's Guide to the Coast of South Carolina" by Miles O. Hayes and Jacqueline Michel: *Journal of Coastal Research*, v. 25, p. 796.

Neal, W.J. 2009, New Web Site for Beach Information: *Interchange*, v. 16(4).

Videtich, P.E. & **Webb*, J.** 2009, FRESH – Field Research in Earth Science Happenings, A Hands-On, Field-Based, Earth Science Program for Inner City, Middle School Students, A Collaboration between Faculty at Grand Valley State University and the Grand Rapids Public School System, June 9 – August 11, 2009. Web URL - <http://gvsu.edu/fresh/>

Conference Abstracts

Bolhuis, C. & **Mattox, S.R.** 2009, Building A High School Geology Course That Earns College Credit, *Geological Society of America Abstracts with Programs*, v. 41(7), p. 163.

Burkholder, B.K., Grant, G., Haggerty, R., **Wampler, P.J.** & Khangaonkar, T. 2009, Can Gravel Augmentation Cool A

Large, Gravel-Bed River? *Geological Society of America Abstracts with Programs*, v. 41(7), p. 141.

Butler*, K., Mattox, S., Bostelman*, S., Breimayer*, J., Bumstead*, L., Check*, D., Cooke*, S., DeWitt*, A., Gray*, J., Harris*, N., Hazel*, M., Hendershot*, B., Hernandez*, J., Jorgensen*, A., Lewis*, E., Mathews*, E., Mishler*, R., Murray*, M., Pisz*, M., Rickens*, A., Rumpz*, S., Sauve*, R., Schmidtendorff*, A., Slider*, R., Stempky*, A., Stevens*, B., VanderBoon*, C., Gerald* & Verwey*, G. 2009 Comparing the Grand Rapids Press to Michigan's High School Graduation Requirements, *Michigan Science Teachers Association Conference Program*, p. 25.

Clark, S.*, F. Mekik, M. Kienast & J. Groeneveld 2009. Tropical Pacific Mg/Ca paleo-thermometry: A Contribution to the Core-top Calibration, AGU Fall Meeting, San Francisco CA.

Colgan, P.M. 2009, Holocene Alluvial Fill in a Small Tributary of the Grand River, Ottawa County, Michigan. *Michigan Academician*, v. 39, no. 2, p. 48.

Dewitt*, A.R. & Wampler, P.J. 2009, Seasonal Substrate Temperature Anomalies At Sand Creek, Aman Park, Ottawa County, Michigan, *Geological Society of America Abstracts with Programs*, v. 41(7), p. 225.

Frasco*, M. & Mattox, S. 2009, Activities to Discover Your Students' Perceptions of Geologic Time, *Michigan Science Teachers Association Conference Program*, p. 37.

Llerandi-Román, P.A. & Napieralski, J. 2009, Scaffolding Scientific Inquiry and Reflective Learning In Field-Based Geoscience Education, *Geological Society of America Abstracts with Programs*, v. 41(7), p. 273.

Mattox, S.R. & Bolhuis, C. 2009, Adding High School Students To The Career Pipeline Using A Successful Model Of Credit-By-Exam For Introductory Physical Geology, *Geological Society of America Abstracts with Programs*, v. 41(7), p. 163.

Mekik, F. & Anderson, R. 2009. Ventilation of the Deeps During the Deglaciation: Records from Tropical and Subtropical Cores. *AGU Fall Meeting, San Francisco*.

Morell*, M.A., Weber, J. & Llerandi-Román, P.A. 2009, Coastal Terrace Tectonic Geomorphology, Trinidad, West Indies, *Geological Society of America Abstracts with Programs*, v. 41(7), p. 265.

Posner*, E.S., Buzzell*, J.L., Barr*, J.G. & Zdan*, S.A. 2009, Determination of Paleolatitude of the Mississippian Michigan Formation: Jackson, Michigan, *Geological Society of America Abstracts with Programs*, v. 41(7), p. 161.

Peterson, V.L., Barr*, J.G., & Barclay*, C.J. 2009, Petrofabric and timing constraints on the exhumation history of the Buck Creek-Chunky Gal ultramafic/mafic complex and adjacent Chunky Gal Mountain Fault in the southern Appalachian Blue

Ridge. *Geological Society of America Abstracts with Programs*, v. 41(7), p. 130.

Russo*, J.C. & Mattox, S. 2009, Exploring the Timing and Location of the Next Hawaiian Volcano *Michigan Science Teachers Association Conference Program*, p. 40.

Snyder, E .B., **Wampler P.J.**, Nelson J. M., Drogowski J. & Harju M., 2009, An argument for the preservation and protection of a unique set of 1st order tributary streams experiencing a press disturbance. *North American Benthological Society Annual Meeting in Grand Rapids, Michigan*, Abstract # 4390.

Vander Boon*, C. & Mekik, F. 2009. Quantifying Calcite Dissolution in Shallow Pelagic Seas: A New Aragonite Dissolution Proxy. *AGU Fall Meeting, San Francisco*.

Videtich, P.E., Webb, J. & Vandergriff*, C.W. 2009, A Hands-On, Field-Based Earth Science Program for Inner City, Middle School Students: A Collaboration Between University And Public School Faculty, *Geological Society of America Abstracts with Programs*, v. 41(7), p. 195.

Waddell, L.M., Hendy, I.L., Moore, T.C. & M.W. Lyle 2009. Subantarctic Pacific hiatuses as clues to periods of enhanced oceanic circulation during the late Neogene, *Eos Trans. AGU*, 90(52), Fall Meeting Suppl., PP43A-1557.

Wampler, P.J. & Sisson*, A.J. 2009, Groundwater Resources and Contamination in Rural Haiti: *Geological Society of America Abstracts with Programs*, v. 41(7), p. 247

Wampler, P.J. & Sisson* A.J. 2009, Evaluation of Spring Flow, Bacterial Contamination, and Distribution of Fresh Water Resources in the Vicinity of Verrettes, Haiti, National Groundwater Association Meeting, Safety Harbor, FL.

Wicker*, M.A., F. Mekik & R. Anderson 2009, Mixed Messages from Multiple Proxies: Is There a Deglacial Carbonate Preservation Peak? AGU Fall Meeting, San Francisco.



Edward Tremba, a former faculty member in the Department of Geology (1974-1978) retired this past year from the Defense Threat Reduction Agency (U.S. Department of Defense). The *Edward Tremba Geology Scholarship* is awarded every year to an outstanding undergraduate geology major.

Alumni News

Jim Walters (Geology 1970) is Department Head of Earth Sciences at the University of Northern Iowa. He has worked in Alaska on permafrost studies in the Tanana Flats area south of Fairbanks. He also has been involved in siting 22 locations for the emplacement of seismometers in Iowa as part of the EarthScope Project.

Larry Austin (Geology 1974) continues to serve as President of Aqua-Tech Consultants, Inc. and as Chairperson for AIPG's National Screening Committee for Certified Professional Geologists. Daughter Stephanie is graduating in 2010 from the U of M studying Architecture and Economics. Son Robby is in 4th grade. Mary continues her career with Uncle Sam for the Social Security Administration. Larry and family did lots of traveling this year both out west and back east!

Gregg Swayze (Geology 1982) appeared in a National Geographic special as part of a project he did in Canyonlands National Park on spectral analysis of petroglyphs. The show was first aired on Thanksgiving Day and was titled "America's Wild Places: Canyonlands". Look for it on the NATGEO channel. He continues to work for the U.S.G.S.

Adam Wygant (Geology 1993) is working for the Michigan Department of Transportation as an Environmental Permit Coordinator. He reports the he still enjoys looking for fossils and checking out caves with the family.

Alexandra de Jong-Emmons (Geology 1998) got married and moved to Utica, New York this past summer. She works in Herkimer, NY teaching high school Earth science and French, only a few miles from the Herkimer Diamond Mine. She also climbed Mount St. Helens last summer.

Jonathon Miller (E.S. 2001) and wife Jenny are alive and well in Clare, Michigan. Jonathon is an adjunct instructor at Mid-Michigan Community College and Saginaw Chippewa Tribal College. He teaches introductory geology, astronomy, geography, archaeo-astronomy and environmental issues. Jenny and Jonathon have two children, Ethan and Makenzie.

Matt Zechmeister (Geology 2003) is finishing up his Ph.D. at the University of Oklahoma in Norman, Oklahoma.

Stacy Balwal (Silcox) - (Geology 2004) is living in Traverse City, Michigan. She married Greg Bawal in 2004.

Brian Beech (Geochemistry 2006) is working for Environmental Resources Management in Holland, Michigan.

Jill Kurek (Geology 2006) is finishing her Master's under Dr. Jim Hibbard at NCSU this semester working on the Carolina terrane in the eastern Appalachians, and then moving to the Denver area or further into the Rockies soon after she is finished.

Jennifer Deloge (Geology 2006) is working as a geoscientist for Shell Exploration and Production in Houston, TX.

James Rinke (Geology 2006) is working on an M.S. at Central Washington University. He is currently in Antarctica installing seismometers in Marie Byrd, West Antarctica.

Lisa Raternink (Geochemistry 2006) received her M.S. at Wright State University and is now working as an environmental geologist for CH2M Hill in Dayton, Ohio.

Carson Klemp (Geology 2007) is working for Freeport McMoRan in the Corporate Engineering Department in Phoenix. He continues to work at Chino Mines, in Hurley, NM on the 100 year old tailings pond reclamation project.

Ron Friend (Geology 2007) is working in the environmental field here in Michigan.

Andrea Magoon (Geology 2007) is working on a M.S. degree at the University of Oklahoma in Norman, OK.

Naoma Leonard (Geology 2008) is working on an M.S. at Western Michigan University.

Kat Barnard (Geology 2008) is working on a Ph.D in geology and viticulture in Oregon at Portland State University in Portland Oregon.

Emily Brehm (Geology 2008) is working for Horizon Well Logging in their Field Geologist Development Program. She will be training in Tulsa, OK and then off to West Virginia or Pennsylvania.

Sarah Nagorsen (Geology 2008) is currently working on a M.S. degree in tectonics at Central Washington University in Ellensburg, Washington.

Anthony Rodriguez (Geology 2009) is working on a M.S. at the University of Texas – Austin. His thesis is focused on the structural and tectonic evolution of the Gulf of Mexico and subsurface mapping of Late Cretaceous and Early Tertiary sequence in the Mexican sector of the Gulf of Mexico.

Chris Denison (Geology 2009) is working on an M.S. at Colorado State University involving fluvial geomorphology and pine bark beetles.



Sarah Nagorsen and Carson Klemp in New Mexico.

From the Geology Archives



James H. Zumberge (b. 1923, d. 1992)

James H. Zumberge was the first president of Grand Valley State University (1962-68) and he hired **John B. Lucke** (1963-1973), the first chair and founder of the Department of Geology (see 2009 Newsletter, "From the Geology Archives"). Zumberge was also an accomplished scientist before coming to GVSU and he published about two dozen scientific papers in peer-reviewed journals. His most cited scientific papers were either about his research in Antarctica or in Quaternary glacial history of Michigan. His Michigan work includes studies on glacial stratigraphy, pollen records, glacial till, and lake ice. His later works dealt with the Antarctic Treaty, the geopolitics and mineral resources of Antarctica, and Antarctic exploration history. He also published numerous opinion pieces, book reviews, and articles on a diverse set of topics. He participated in two early expeditions to Antarctica, one being in 1957-58 during the International Geophysical Year, when he was the chief glaciologist for the Ross Ice Shelf investigations. Cape Zumberge and the Zumberge Coast in Antarctica are named after him.

His most cited scientific paper reports on work that he did in the company of A.L. Washburn. They examined weathering of igneous rocks at Marble Point in McMurdo Sound while they were studying the geomorphology of the ice-free area. In the resulting paper Kelly and Zumberge argue that the weathering of diorite is mainly accomplished by physical weathering, not chemical weathering. The main processes breaking down the rocks are freeze-and-thaw, and salt weathering. Chemical analyses of six different samples in various stages of decomposition showed that they had changed little in their chemical composition. No clay minerals were found, suggesting that hydrolysis was not active. Oxidation of pyrrhotite and biotite was producing some limonite, but the volumetric changes were negligible. Evidence of salt weathering and freeze-and-thaw was abundant in the area. The paper reads well and is still cited as a case study in periglacial weathering.

Zumberge was born in 1923 in Minneapolis, Minnesota. He received his bachelor's and doctoral degrees (Ph.D. Geology 1950) from the University of Minnesota. Before coming to GVSU Zumberge obtained the rank of Professor of Geology (1960) at the University of Michigan. After his tenure at GVSU (1962-68), he went on to be the Dean of the College of Earth Sciences at University of Arizona (1968-71), Chancellor of the

University of Nebraska (1971-75), the President of Southern Methodist University (1975-80), and President the University of Southern California (1980-1991). James Zumberge died on April 15, 1992 at the age of 68, of a brain tumor. Zumberge made important contributions both to geology and to the founding of GVSU and to four other major universities.

Submitted by Patrick Colgan

References

Kelly, W.C. & Zumberge, J.H. (1961). Weathering of a Quartz Diorite at Marble Point, McMurdo Sound, Antarctica. *The Journal of Geology*, Vol. 69, No. 4, p. 433-446.

New York Times (1992). *James H. Zumberge, 68, Explorer And Former President of U.S.C.*, New York Times, Published: April 17, 1992.



James H. Zumberge (left) with Charles Swithinbank, head of the British Antarctica Survey near Beardmore Glacier (ca.1984, Archives of the University of Southern California).

Please send the following information about yourself in one of three ways:

Email to Linda Noel or to Janet Potgeter at:
geodept@gvsu.edu

Mail it to us @ Geology Department, GVSU, Allendale, MI 49401

We have an online form for direct electronic submission at:
<http://www.gvsu.edu/geology/>

Name: (If your name has changed since you were a student here, let us know your previous name also)

Graduation year: _____

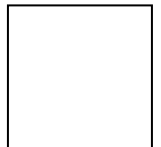
Employment/Life status or changes:

Contact information* (address, email, phone)

- Note that we will not post contact information on the web site apart from your city of residence – please let us know if you do not want us to share your contact information with alumni or friends who request it.



Department of Geology
Padnos Hall of Science
Allendale, Michigan 49401



TO: