



#### Inside this Issue:

Jeff's Journals	2
Moshier's Memoirs	3
Research Summer	4
Geology Scholarship	4
Water for Kosovo	4
Clark's Capers	5
Geologists at GSA	6
Rock & Mineral Sale	6
2009 Graduates	7
Alumni Updates	7

# CONTACT

The Alumni Newsletter of Wheaton College's Department of Geology

*When I consider Your heavens, the work of Your fingers, The moon and the stars, which You have ordained; What is man that You take thought of him, And the son of man that You care for him?*

—Psalm 8:3-4

## From the Chair....

### 2009 will be remembered as a turbulent year.

We were all touched in different ways by the global financial crisis. Wheaton College was no exception. But, the crisis was just another reminder that everything is the Lord's. If you have been on campus this year you could not miss the construction project that is our future home: the new Science Center. So, even when many activities around the country were grinding to a halt (or put on hold), our new building rose from the foundation up and continues to take shape.

We can't wait to get in there. Many of the new features of the building were described in last year's CONTACT, so they will not be repeated here. Even now, about six months before it is completed, we are preparing for the move. You will read about the colossal Rock Sale, which drew hundreds of people to campus over Labor Day weekend. We will tell you about some new additions to our specimen collection. But, life goes on and we will also tell you about the normal stuff: of classes and research projects, of field trips and publications, of our amazing students and alumni. But, before sharing all that joy, please let me share some important words with you.

We offer our deepest thanks and appreciation to all who have contributed to the Geology Department and Donald Boardman Black Hills scholarship funds in the past year. These scholarships are important incentives that recognize academic excellence, help with recruitment for the major, and assist students with financial need. In recent years, we have received significant donations to these scholarships. On the other hand, only a very small minority of geology alumni makes regular contributions. Please consider opportunities to assist and bless the current and future group of geology majors as they follow in your foot steps. If you are

called to give, please note that donations to the college for use by the Geology Department must be clearly designated for a specific scholarship or other purpose. Employer matching-gift programs multiply your donations.

We hope you have taken the time to look at the college website covering the Promise of Wheaton Campaign (<http://www.wheaton.edu/promise/>). The benefits of this effort to the geology department are truly revolutionary. Beyond the improved physical facilities for our department is the opportunity to gain an additional geology professor through the Faculty-Student Mentoring Initiative. We have already submitted a proposal to the administration that justifies the position and its contribution to geoscience education at Wheaton College. These lines will only be added across the campus as they are funded, meaning that we are looking to our alumni and friends with a vision for

taking our program to the next level. As reported recently in the Journal Nature, the US National Science Foundation (NSF) Advisory Committee for Geosciences reported that there will be "a growing national need for geoscientists to address the problems of climate change, resource depletion, energy sustainability and environmental degradation.... (G)eoscientists will increasingly be called on to assess how human behaviour is affecting Earth and its systems.... (T)he 4,000 US geoscientists who graduate each year will not be enough to supply these needs." Don't you agree that Wheaton College prepares uniquely qualified and capable geoscience professionals? If you have any questions or ideas of how we can advance this initiative for our department, please contact me, Stephen O. Moshier, at [stephen.o.moshier@wheaton.edu](mailto:stephen.o.moshier@wheaton.edu) or 630 752 5856. ●

## Jeff's Journals

Hello to you our extended family! It continues to be the greatest of blessings to know that Wheaton College Geology has such a rich heritage of graduates serving the Kingdom all over the world. Occasionally, I have the opportunity to become more acquainted with department alums from before my time here (1986-). As you read elsewhere herein, the new Science Center will be officially dedicated this coming fall. All of us hope that many Wheaton Geology grads will come to help us celebrate the 150th Anniversary of Blanchard's vision and our new home. Please accept the invitation to join us. Details of exact dates and activities will be provided as soon as they are finalized.

A big component of the new center will be the Lower Level Exhibits on our department's floor. This will exist below "Perry" Mastodon's snazzy display. Yes, we will be dwellers of the lower

*[Dr. Inderbitzen] wanted his collection to be donated to a Christian institution for the appreciation of all who will see these samples as God's genius in Creation.*

level. This is actually quite an upgrade from the "attic" of Breyer Hall. Geology was never meant to be elevated, but is completely appropriate as the new foundation of the sciences. In preparation for the move, we staged a huge sale of the geological materials that are duplicates (see Rock and Mineral Sale article). Overwhelming success made us some money for student services (to support travel to meetings, for research projects and to supplement scholarships). Graduating Senior Bryn Hendricks is cheered for her brilliant management of the sale.

Remaining in the department collections are many beautiful and fascinating pieces of earth history. We have also become the recipients of wonderful collections from friends and alums. In late September, Geology major Spencer Schultze (12) and I flew into Dulles airport in Washington DC so that we could move the Dr. Anthony Inderbitzen collection from Front Royal, VA. Dr. I was with the U.S. Geological Survey for many years as a top scientist-administrator. He wanted his collection to be donated to a Christian institution for the appreciation of all who will see these samples as God's genius in Creation. Sometime next year, the department is due to receive another splendid collection from distinguished Geology alum, Art Smith (57) in Houston. Art was a very well known expert on mineral occurrences as well as a former petroleum geologist. I think that Art is one of two Wheaton Geology alums with namesake mineral species, ARTSMITHITE and RIBBEITE after mineralogist Paul Ribbe

(56). We solicit prayers for Art's wife and family; he just recently passed beyond a very difficult and brave battle with cancer.

The new Lower Level Exhibits will take some tremendous dedication to see that everything is displayed well. However, a greater effort is being exerted to properly curate all specimens with careful cataloging. I truly feel guilty about not keeping up with the chore of curation. I am now enlisting majors as apprentice curators. Together we will identify, measure and evaluate all valuable items entered into a master database. The students should get an excellent educational boost from helping establish a quality, comprehensive collection.

My existence continues with a growing emphasis on geological projects for international development. At present, I am most invested in project work for a village in Kosovo. The development team consists of myself with Geology majors as research associates, along with Water-

For-Life, an affiliate of YWAM, and the beautiful people in Kosovo. Thus far, we have with significant effort, established a warm relationship with the community of Tushile. We partner with them, through a water committee, to plan and design actions to provide adequate clean water and sanitary systems that will rid the village of most water-borne diseases. The 2009 student scholar-servants are Peter Brice (11) and Forrest Webb (10). See Peter's article on Water For Life in Kosovo. I expect to return to Kosovo this next summer and have one or more of our students back to serve on the team.

International development geoscience is the theme of an application I made for an InterVarsity Christian Fellowship competition last winter. It was an honor to be classed as a finalist in the final awards. Mostly, I was pleased to demonstrate how very important geology is in the broader realm of global service. Meanwhile, I continue to



Dr. Greenberg and Dr. Eggmann and villagers in Kosovo.

seek financial backing for the Kosovo project and the concept of development training for undergraduate students. You might remember from an earlier newsletter that I have a proposal to use the glorious Science Station in the Black Hills as venue for academic-practical training in a) water resources, b) sanitation systems, c) local building materials and technology, and d) village-scale energy systems. I am convinced that we can and must take action applying the wonderful Christian education that Wheaton College affords.

Other news from me includes stepping down (was I up?) after three years from the presidency of the Affiliation of Christian Geologists. I was off to Washington D.C. early in December '09 to serve a special initiative of the Pew Charitable Trust, as they work to protect many roadless areas of our national lands. I guess they needed a token scientist. They were wise enough to ask a geologist! I am trying to get cooperation with an environmental consulting firm so that some of our majors can do some geological-structure mapping in Haiti. This project could occur over the Spring Break. The rationale is for the students to gain practical expertise as well as cross-cultural appreciation. Their work would contribute to the exploration for groundwater supplies. I plan on resigning from the Faculty Personnel Committee at year's end. The time involved will be needed for preparing the department's big move. ●



Dr. Moshier and wife Carol in Israel

## Moshier's Memoirs...

This summer I returned to the Harvard University-Leon Levy Expedition to Ashkelon, Israel. The excavation has become the field school for Wheaton College Archaeology majors and graduate students because the Associate Director of the project is Wheaton Archaeology Associate Professor Daniel Master. Archaeology majors are now taking more geology courses, typically Physical Geology, Geoarchaeology and Geographic Information Systems I & II. So, I already knew many of our archaeology students who were digging at Ashkelon this summer. Currently, archaeology major Ben Felker (10) is completing a minor in geology and another student, David Wheatley (12), is a double geology-archaeology major. Archaeology major Mike Resig (09) served as Jim Clark's TA in GIS.

At Ashekelon we drilled during four days and completed 17 holes, many to eleven meters, the maximum depth of the bucket auger rig we contracted (the guy's name is Efni, if you ever need him). Ben and David assisted me with sample description, but more importantly they carried gallons and gallons of water to the drill sites because of the soft, dry, nature of the material being drilled. It was ironic pouring so much fresh water down dry holes. This work is leading to a better understanding of the stratigraphy of the tell, especially in untested areas. I produced a topographic map of the Tell on the top surface of Pleistocene (Kurkar) sand that represents the landform before human settlement and modification.

A special treat this summer was having Carol join me in Israel after the geological work. She came along with a dozen other friends from our church, including our pastor and his wife. Together, we toured Israel on a traditional pilgrimage, starting at Ashkelon and including several nights in Jerusalem and Tiberius (on Lake Galilee).

For those of you with memories of the Historical Geology field trip to Baraboo, Wisconsin, we still make the trip in the more recent class incarnation-Earth History and Stratigraphy. Sixteen students in this required course for majors enjoyed a sunny mid-April weekend, with hikes along Devils Lake and numerous roadside stops to examine all the different rocks there. In recent years we have abandoned the ol' Spinning Wheel Motel for a wonderful Christian camp situated right next to the State Park entrance. In the fall, the Petrology and Petrography class traveled to Southern Illinois and the St. Francis Mountains of Southeastern Missouri. We camped (Halloween night) at Giant City State Park south of Carbondale. ●



## National Center for Earth Surface Dynamics Summer REU //Gabe Richarde '10

My head is still spinning from all the acronyms I had to learn this summer. I had the privilege of working with the National Center for Earth Surface Dynamics (NCED) in downtown Minneapolis, MN through the National Science Foundation (NSF) on a Research Experience for Undergraduates (REU). I worked as a research assistant in the Outdoor Stream Lab (OSL) at Saint Anthony Falls Laboratory's (SAFL's) pristine locale right on top of a huge waterfall on the Mississippi River. Also with NCED, I spent three weeks in Sandy, Oregon, at the base of Mount Hood, studying the removal of Marmot Dam, an 18 meter high and 96 year old hydro-electric diversion structure, and the ongoing effects its removal will have on the Sandy River's geomorphic forms and salmon habitat.

To top off the summer I spent a little over a week in the southwest of France with my roommate and fellow geology major, Fabien Laugier, collecting sediment from the bay of Arcachon for a project concerned with how heavy mineral analysis can aid in protolith identification and sediment route from said protolith. Needless to say, it was torture spending all day eating fine cheeses and oysters on a boat in one of the most beautiful parts of the world studying God's magnificent handiwork. I hope to start attending graduate school next fall anywhere in the Appalachians. ◉

## Geology Scholarship Awardees

The department awarded three Geology Scholarships this year to Christina Hedgahl (11), Amy Nielson (11), and Spencer Schultze (12). All three awardees demonstrate a passion for geology and are actively involved in the department. Christina served as a Lab Assistant in our introductory geology class in fall 2009, Amy was active in the Rock and Mineral Garage Sale, and Spencer (also on the Wheaton Thunder Basketball team) traveled with Dr. Greenberg to move the Inderbitzen collection (see Jeff's Journals) to Wheaton in September. In the Spring we will be awarding Donald Boardman scholarships to several students enrolled in the summer Field Mapping course at the Wheaton College Science Station. Again, all who have contributed to the scholarship fund in the past year have our deepest thanks and appreciation. ◉

## Water For Life in Kosovo // Peter Brice '11

Under Dr. Greenberg's supervision, Forrest Webb (10) and I spent six weeks in a small rural village in the green, beautiful hills of Tushile, Kosovo this summer. Together with staff from Water For Life, an affiliate of YWAM, we were there to aid in the development of one of their new projects (check out their website at [www.waterforlife.org](http://www.waterforlife.org)). It is hoped that in partnership with the village, through a five man water committee, the project will be able to rehabilitate wells and to bring an additional source of clean water into each household.

Forrest and I worked 5 days each week in the village creating maps of everything from houses and trees to sites of groundwater contamination and old junked cars. With the help of some new friends and through speaking lots of broken English, we measured flow rates of Tushile's main stream (yes, we did stop to jump in and swim enjoying the beautiful sunny weather a few times) and sites of potential septic systems. We created a structural geology



Peter Brice '10 (far left) and Forrest Webb '10 (second from left) and villagers in Kosovo.

and GIS survey map of all pertinent physical and cultural features. We also conducted a household survey through a translator of all 70 households in the village. These projects enabled us to develop strong relationships with the families in Tushile, sharing our faith and learning from these loving, very hospitable people.

We are continuing to compile and analyze data this year, and Forrest and I will present our research at a global development conference at Notre Dame University in February, 2010. In future work, we hope to begin rehabilitating household wells and the stream that traverses the village, also design and installation of septic fields should eliminate a great deal of the contaminants that now pour into the stream and pollute the wells. As more funding is raised for the project, more students will continue to serve and learn as part of the team in Tushile, Kosovo in the near future. ◉

## Clark's Capers

During the summer I visited HNGR intern Javan Miner (10) in the central highlands of Haiti. That was my first ever trip to Haiti and those two weeks reminded me very much of my experiences in Africa. Javan is interning with Haiti Outreach which specializes in community water development and so Javan has been able to participate in water well drilling with both mud rotary and cable tool drilling. He has also been testing my inexpensive resistivity and seismic geophysical instruments for water prospecting. We recently learned of a relatively new "seismoelectric" geophysical method. Actually it is an old method that has received much attention lately because it is possible now to understand and model the physics involved. Basically a seismoelectric signal is generated by seismic waves that agitate groundwater molecules. The shearing of these bipolar molecules by ground motion induces an electromagnetic wave that propagates to the surface and can be recorded as a very weak voltage signal. The method uses a typical seismograph, such as my inexpensive seismic unit, but the sensor geophone is replaced by a pair of electrodes (i.e. long bolts) pounded into the ground. Javan has had some promising results but we are still on the steep part of the learning curve. The large problem in the U.S. with this technique is the huge amount of electromagnetic noise propagating everywhere that hides the weak signal. Haiti, and other developing nations, is an ideal place to test the method because there is relatively little electricity and so noise is greatly minimized. Since my goal is to develop methods to improve water exploration in developing nations it could be that the seismoelectric method will be ideal.

*“Since my goal is to develop methods to improve water exploration in developing nations it could be that the seismoelectric method will be ideal.”*

I participated in a conference near Helsinki, Finland last summer which focused upon glacial isostasy and its effects upon sea level, lake levels and the geoid. It was an interesting mix of geophysicists, glacial geologists and geodists. I presented a paper with co-authors Kevin Befus (08) and Glenn

oldest daughter, Christel, gave birth to a girl, Tavifa (that is Russian for Tabitha). She is doing well and growing quickly. She is, of course, a beautiful baby. Because Christel is in her first year of medical residency in a hospital in Sacramento, and because that requires an average work load of 70 hours/week, my wife has been caring for Tavifa. That means I am all alone here in Wheaton and living in a basement apartment while Sue is in Sacramento for the year. I spent much of last summer in Sacramento enjoying my granddaughter and helping to remodel Christel's house. And I am certainly looking forward to being reunited with my family at Christmas, spring break and next summer.

Everyone in the department is eagerly anticipating life in the new science building. For me that will include enjoying a dedicated GIS laboratory with 20 computer stations and a research room designed for electronics research. ●

Sharman (08) on the predicted hydrology of the Great Lakes during the past 20,000 years. This included our results on lake level changes, outburst floods, groundwater processes and isostasy-induced river channel changes.

The best news I have to share is that I am now a grandfather. In March my



Dr. Clark lecturing Geology Majors in Geomorphology. With 21 students in the class, every seat is filled.



Dr. Clark enjoys a meal with villagers this past summer in Haiti.

## Wheaton Geologists at GSA

Steve Moshier represented Wheaton Geology faculty at the 2009 Annual Geological Society of America meeting in Portland, Oregon. Steve and student Ben Felker (10) presented an invited talk in the Geoarchaeology Session “Ancient Coastal and Subsea Sites: New Findings and Problems.” Their talk, “Field Recognition And Remote Sensing Of An Ancient Channel Of The Pelusiac Nile, Egypt” summarized several seasons of field work in the eastern delta and Ben’s remarkable remote sensing work with Landsat imagery to detect possible channel courses that have yet to be verified.

Wheaton geologists were active in the meeting. Recent graduates Andrew Luhmann (06) and Lindsey (Christiansen) Henry (04) reported on their dissertation research. Andrew described patterns of groundwater flow and heat transfer in karst systems of southern Minnesota. Lindsey estimated the amount of atmospheric carbon dioxide contributed from arc volcanoes along the margin of the Panthalsia (Pangea) ocean during the Permian. The Affiliation of Christian Geologists gathering featured a presentation by Katie (Lethe) O’Connor (04) on the theme of Science as Worship: Bringing Life, Faith, and Vocation into Focus. Katie’s presentation was illustrated with beautiful nature photography contributed by her husband Sean. Other Wheaton geologists at the meeting included Gregg Davidson (85) and Dawn Wright (83) (apologies if YOU were there and missed in this report). ●



## Rock and Mineral Sale Success

// Bryn Hendricks '10

On Labor Day weekend the Geology Department’s Rock & Mineral Sale (a.k.a. “Earth’s Garage Sale”) was a big success and a lot of fun. In preparation for our move to the new building next year, we sold thousands of rock, mineral, and fossil samples, as well as maps and equipment that the department amassed over the last 150 years. Over 20 students (plus the Geo faculty) were involved, and despite an incredibly high-stress first morning (the hallway was so packed it was difficult to move), we all survived without deformation. God blessed our efforts abundantly, too. The number of people attending over 2 days exceeded our wildest expectations- an estimated 750 - 1000+ people came from across the country to look and to buy. And how they bought! In early spring of this year, Dr. Greenberg (who, by the way, put in billions of hours on this project) estimated we could make ten thousand dollars. However, by the time the crowds melted away, they had deposited over \$21,000 in our till! That money will go a long way toward student scholarships, research funding and new collection acquisitions. We unloaded a lot of goodies that were appreciated by all sorts of collectors, educators and students who showed up for the sale. That multitude of items will no longer sit unseen in dark closets, nor will all the duplicates have to be transported to the new building. In addition, all of the volunteers enjoyed the deposition of the sale’s leftovers to their personal collections. Much thanks to everyone who attended! ●

## Class of 2009 Geology Graduates

Five geology majors graduated in May. We all went to dinner at Macaroni Grill for our annual celebration at the end of the spring semester. Nathan Brown has moved to the University of Illinois-Chicago to pursue an MS in Geological Sciences. Daniel Meeh is working in Southern California, where he married Lauren Merae over the summer. Daniel Parker is off to the University of Maryland for an MS in Geography. He got to work this past

summer on a GIS-forestry project in New England. Jeffrey Tutman traded his rock hammer for a stethoscope and began the MD program at the University of South Carolina Medical School. Nathan Williams was commissioned as a 2nd Lieutenant in the Army, Corps of Engineers and will be getting married this fall. We are extremely proud of them! Miss them too. Nathan received the Gerald Haddock Outstanding Geology Major Award. ●

## Alumni Updates

**Matt Soerens '06** has published a book with Intervarsity Press, "Welcoming the Stranger: Justice, Compassion & Truth in the Immigration Debate" March 2009.

**Cassie John '04** was accepted into the Columbia University Master of Public Administration in Environmental Science and Policy, in New York City.

**Rich Aram '76** lives in Katy, Texas and coordinates geoscience training for ConocoPhillips. His wife, Sarah, has completed one year of aggressive chemotherapy for leukemia, and has been in remission for over a year. She has started a second year of a lower dosage chemotherapy. They praise the Lord for His healing touch, and for the great prayer support from family and friends around the world.

**Ben Lowe '07**-Environmental Science, has published a book with Intervarsity Press titled "Green Revolution: Coming Together to Care for Creation" March 2009. Ben is also a candidate for the US Congress Illinois 6th District.

**Greg Davidon '85** authored a book with a self-explanatory title *When Faith and Science Collide: A Biblical Approach to Evaluating Evolution and the Age of the Earth*. Greg writes from his experience as a Geology professor at University of Mississippi and many years of critical thinking about the issues, including his Wheaton College days. The book is available from most online services or from [www.maliuspress.com](http://www.maliuspress.com)

**Arthur Smith '57** died on November 11, 2009. From the Houston Chronicle: "Art was a true 'rock hound', and his enthusiasm for minerals was displayed in his extensive collections. He was deeply involved with Houston Gem and Mineral Society, and was a published author of numerous books and guides, and a frequent contributor of articles in *Rocks and Minerals*. He discovered a new micro-mineral, artsmithite, which was named for him. Art was a friend, encourager, and mentor to many, and will be remembered for his intelligence, kindness, gentleness, and generosity."

**Ken Wolgemuth '65** is available to give lectures on geology and creation, with special attention to churches, seminaries, home schools and Christian Colleges. He recently participated in a symposium for Bible scholars in New Orleans. His email address is [wolgemuth2@aol.com](mailto:wolgemuth2@aol.com)

**Nathan Williams '09** is commissioned to the Air Defense Artillery beginning in September 2010. He is currently substitute teaching in California until he begins training.

**Recently completed PhDs**  
Steve Moss '99, U British Columbia; Christopher Williams '93, Southern Illinois U; Jamey Fulton '97, Penn State U, Andrew Adare '98, in Physics, U Colorado

**Recent weddings:**  
Chris Gregory '07 and Katie Rassi, Nathan Williams '09 and Meghan Meredith, Brandon Lewis '09 and Jennifer Parisi

**Recent births announced by:**  
Andrew Kulpecz '02, Lacy (Noetzel) Smith '01, Nicole (Titus) Havens '02, Bethany (Murphy) Thornton '07, Andrew Luhmann '07, among others!



Students sleep on the train on the way to the Grand Canyon ca. 1960.



The Perry Mastodon's new home. The wall behind Perry is glass looking towards Jenks.



Dr. Clark working in Haiti this past summer.



From left: Benjamin Felker '10, David Wheatley '12, Dr. Moshier, and fellow worker in Israel.

The new volume *Geology and Religion: A History of Harmony and Hostility* (Köbel-Ebert, ed., Geol. Soc. London Special Pub 310) contains a history of Wheaton's geology program. *From the Beginning: Faith and Geology at Evangelical Wheaton College* was contributed by Steven Moshier, David Maas (history) and Jeff Greenberg.

**Clockwise from top left:** Javan Miner '10, doing seismic work in Haiti. Javan is spending the semester in Haiti as part of Wheaton's HNGR program. ● Dr. Moshier stands in what will be his new office. ● The Geology Department toured the new Science Center in November. From left: Jamie Selander (lab associate/O.C.), Dr. Greenberg, Dr. Clark, Gary LaVanchy (lab instructor), Lisa Heidlauf (lab instructor). ● Geology majors on a class field trip for Earth History and Stratigraphy at Devil's Lake, Wisconsin.

