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Wheaton College
For Christ and His Kingdom

CONTACT

The Alumni Newsletter of Wheaton College's Department of Geology and Environmental Science

Wheaton geologists (current and alumni) at GSA in October. And that's just the crew that showed up for dinner! *Photo credit: Charles Carrigan*

INSIDE THIS ISSUE:

FROM THE DEPARTMENT CHAIR

Stephen Moshier

What a busy year since our last CONTACT! The Environmental Science and Geology majors are thriving, with over thirty students in each program. In January, Chris Keil brought together a team of external and internal faculty reviewers for a ten-year review of the Environmental Science Program. ES Alumni contributed valuable comments that were encouraging and reflective, so thanks to all of you who participated in the survey. Chris is filling lab space in the department with glassware, chemical instruments and, of course, student researchers. You will see evidence of their explorations of sustainable living inside this issue.

We dedicated the Art Smith Mineral Collection at Homecoming in October. Remarks from the ceremony are reprinted on page 3. There were easily fifty people or more at the event, including friends and family of Nancy Smith, representatives from the Houston Gem and Mineral Society, Natural and Social Science Dean Dorothy Chappell and Wheaton College President Philip Ryken. Dr. Ryken is known to bring campus visitors over to the collection, especially to see the stone frog exhibit. Senior Geology major Kaitlyn Wallett explained to the audience what the collections will mean to students.

The Geological Society of America annual meeting in Denver also served as a geology homecoming event for at least 35 Wheaton geoscientists. I found myself mostly going to talks by former students, which is a major blessing for an old professor! About 25 of us gathered one evening for dinner at Maggiano's Little Italy. Three current Wheaton students were presenters, others volunteered with convention duties at the meetings.

Keil, Greenberg and I will be back in the Black Hills this summer. Enrollments are strong for geology and environmental science majors and gen courses are filling, too. The students never get any older, but the facilities are sure not getting any younger. Anyone out there want to donate funds for a new lodge/dining hall? Just sayin... ■

WHEATON GEOLOGISTS SIGHTED AT GSA

Current Students: Mark Hansford, Ryan Kammer, Sammy Mallow, Joel MacKinney, Noah Miller, Katherine Paukert, Joshua Olsen, Ian Treat and Kaitlyn Wallett. Current Faculty: Clark, Greenberg and Moshier. Alumni: Ben Bader, Peter Brice, Nathan Brown, George Kit Carson, Steve Chignell, Jamie Fulton, Chris Gates, Lindsey C. Henry, Mallory Kinczyk, Fabien Laugier (seen lurking around Denver), Gary LaVanchy, Jacob Lepori, Leon Long, Katie O'Rourke, Glenn Sharman, Anne Shilaber, Bruce Sidebotham, David Wheatley, Christopher Williams, and Ken Wogelmuth. ■

GOODNESS GROWS SUMMER INTERNSHIP

Jared Elton '14 (ENVR)

During summer of 2013, I had the opportunity to work with a non-profit organization in eastern Ohio called Goodness Grows. Goodness Grows, financially supported by a local church, uses sustainable agriculture to supply food to low-income communities and bring about community development. In addition to planting, tending, and harvesting a wide variety of crops, I also spent much of my time leading groups of special-needs volunteers. About once a week, I was able to meet with other local organizations who were also involved in establishing ethical food systems. We worked collaboratively to plan community events and educate the general public about the importance of sustainable agriculture, fresh produce, and nutritious, home-cooked meals. ■

JEFF'S JOURNALS

Fall 2013 became my sabbatical leave for the third time in 27 years at Wheaton College. This was honestly the first time I have felt the real sense of relief, to avoid the stresses of teaching and focus upon the other chores of academic life. In particular, I have done some traveling away from Wheaton, written some for publication, written up grant proposals, supervised our WASTE Program, and spent some more energy in curating our mineral collections. That seems a fair amount of accomplishment, when I previously felt mostly wheels spinning and little sabbatical progress. I am very satisfied with this my last sabbatical. Thanks of course go to the Lord for provision. I also am thankful for and give thanks to my wonderful colleagues and students. Fall semester, both of my usual Physical Geology intro classes were taught with great passion by Lisa Heidlauf. She demonstrates a strong gift for connecting with Gen Ed students, and she has been quite effective in recruiting new Geology majors! Steve Moshier (in a moment of mental weakness) decided to cover my responsibility and teach our half-semester Fundamentals of Mineral Science course. Steve is brave, foolish, and mostly appreciated for the sacrifice. Spring 2014 is Jim Clark's turn for a sabbatical. I pray that he will gain the full potential of this time and that the department continues to survive, even without him.

I made four sorties into the "field" from the end of the summer (after having taught the Gen Ed Geology four-week course in the Black Hills) until the end of October. The first trip allowed some opportunity to collect samples for our petrology collection. These included a suite of Proterozoic anorthosites and related rocks from the San Gabriel Mountains in southern, CA. On the same tour, I sampled various units associated with the explosive rhyolite calderas in southwestern Utah, central Nevada, and into eastern CA. The Basin and Range geology also yielded some Cambrian trilobites and specimens of contact metamorphic skarns. An additional treat was photo collecting in amazing Zion National Park.

The next trip was quite different in location and purpose. I went to Florida in order to first of all, meet with potential partners, Dr. Tom Smith, ecologist at Ave Maria University, and the staff of the Christian NGO, ECHO outside Fort Myers. The south Florida venture is for the sake of our WASTE program, described below. Ave Maria may be the location for our first pilot system of wastewater treatment. Demonstrations and training would occur with the pilot to simulate conditions in tropical to subtropical climates where millions of the world's disadvantaged communities struggle. We just sent off an application for EPA support to help the south Florida venture. I submitted a brief paper concerning WASTE to the Waterlines journal in the UK. I next drove north to the Tallahassee area and visited alums Christopher and Heidi Williams ('92). I returned to my alma mater, FSU for the first time in about 40 years. Discussions with Dr. Chris and other geologists at the Florida Geological Survey prepared me to observe the condition of famous springs and their degradation in this karst region. Human "progress" too often equates to environmental regress.

Shortly after the FL exploits, I met colleagues in Kosovo to plan a new cycle of research studies for determining locations of community water and sanitation projects. We are serving as part of the Christian NGO, Water-For-Life, with Kosovar leaders and expat staffers including WFL Director, Dr. Derek Chignell, former Wheaton College Chemistry prof. The previous focus of one particular village is now shifting to the needs of several schools throughout the tiny nation. I am preparing a grant proposal to Geoscientists Without Borders (GWB) to support Jim Clark, myself, and at least one of our majors to go and conduct site surveys in determining project candidates. GWB funds projects that involve geophysics in service of human needs and environmental protection. Continuation of our WFL Kosovo involvement can go a long way toward improving rural life and bringing the love of the Lord to people ripped by warfare.

The Geological Society of America annual meeting has been growing in importance among Wheaton Geology faculty and majors. The last trip for me to Denver for the GSA in late October, was a true highpoint! We had three current students present papers, as well as all three profs and several departmental alums. Somehow, most of us (25!) got together and had a super good Italian supper. I never would have dreamed back 20 or even ten years ago, that little ole Wheaton would be so well represented. It is a huge blessing and delight to be a part of this academic-social family. For the third time, I co-chaired a session on "Geoscience and International Development". The session was wonderful and has inspired a new book project with the GSA, over which a new friend and I with the same vision will be co-editors. There is widespread enthusiasm for the Special Paper, Geoscience for the Public Good and Global Development: Toward a Sustainable Future. This is highly interdisciplinary and will ideally include connections with geography, economics, politics-policy (ugh!), ecology, philosophy, anthropology, health issues, etc. Some of you might be candidates for an article. We will accept short commentaries as well as longer, more technical manuscripts. The DEADLINE to submit a first draft for the papers is Nov. 1st.

The GSA abstract with U of Kentucky's Kent Ratajeski is an expression of one aspect that relates to my current "hard rock" research in the Black Hills. These projects move slowly, as they depend on undergrad research in the field and lab. Thus far, we have gained three wonderful professional colleagues in the effort. I am trying to pull together enough provocative information to present this work via the journal *Geology*. If you'd like to learn more about this research, let me know. I'm happy to bore anyone who asks. ■

Kaitlyn Wallet '14, Dorothy Chappell (Natural and Social Science Dean), Nancy Smith, Philip Ryken (President) and Stephen O. Moshier at the Art Smith Mineral Collection Dedication.

The Stones and Bones party was thrown in fall to honor the 50th anniversary of Perry Mastodon's excavation. Large crowds attended and enjoyed several stations with different activities. Here children work on the scavenger hunt.

Gathering for the dedication of the Art Smith Mineral Collection, Homecoming October 5, 2013. Photo Credit: Peter Vagt

DEDICATION OF THE ART SMITH MINERAL COLLECTION

Remarks presented at the dedication ceremony, October 5, 2013, by Stephen O. Moshier

We are here to thank Nancy and the Smith family for their efforts to bring the Arthur Smith Mineral Collection to Wheaton College; to thank God for the life of Art Smith and to honor and glorify God for His provision of this gift and to ask His blessing on the opportunities for learning and research that will be encouraged by the displays and collections in the Meyer Science Center.

Expressions of thanks and prayers of thanksgiving will be offered this afternoon.

I would like to acknowledge two individuals who are not here today. First my colleague Professor Jeffrey Greenberg, who is spending some of his sabbatical leave in Kosovo and regrets missing this event. Jeff has invested hundreds of hours preparing for the arrival of the collection and re-curating the collection into public displays and suitable storage for our collections. Our lab-associate Jamie Selander and her battalion of student assistants have also spent scores of hours cataloging the collection.

The second person I wish to acknowledge is David Lawrenz, a valued colleague in our Development Office who sadly passed away last year. As a regional director, David had a special role in receiving this gift. Dave's wife Ann wished to here today to share in this joyful event, but had obligations with her family in New England. She provided these thoughts in a letter to Nancy that she has given me permission to read here.

"Nancy, I have fond memories of the late summer afternoon three years ago that Dave introduced me to you and we spent the afternoon visiting and touring the soon to be dedicated science building. Dave shared your dream to see the donation of this beautiful rock collection to Wheaton College someday become a reality. The contents of this collection to be studied cared for and displayed for this generation and future generations to come. Dave, as I am sure you quickly discovered, was passionate about Wheaton College. His desire was to provide opportunities for his donors to define and realize tangible ways they could support the mission of Wheaton College that would in turn bring them the greatest joy. My prayer for you and your family today is that you would have the joy of the Lord Jesus as you so generously give this priceless gift of God's creation to help further the work of His kingdom."

The biography of Art that I am about to read was fashioned from a wonderful tribute written by Mark I. Jacobson and published in Rock and Minerals magazine. Arthur Edward Smith Jr. was born on 29 May 1935 in Teaneck, New Jersey. In 1953 he enrolled as a general science major at Wheaton College in Illinois. During his sophomore year, he took an introductory physical geology course and then was hired to assist on a school-sponsored geology field trip through the Southern Appalachian Mountains. This experience led him to register for the summer geology field course in the Black Hills. Art was "hooked" and changed his major to geology. The summer after his graduation in 1957, Art worked as a teaching assistant for the field course in the Black Hills. In the fall, he enrolled in the graduate program at the University of Missouri, where he wrote his thesis on the origin of layered igneous rocks adjacent to some of the Black Hills pegmatites.

Next, in 1959, Art enlisted in the army and was assigned to the Corps of Engineers in Washington, D.C., working as a geologist on beach erosion projects. This experience gave him an edge in obtaining a job in 1963 as an exploration geologist with Texaco in Houston. In 1965 he met and married Elizabeth "Betty Jean" McKim; their son, Brett, was born two years later. Elizabeth passed away in 2008.

In 1974 Art left Texaco to join the small, independent oil company Murphy Baxter as their exploration-development geologist. He stayed with them until the company was sold in 2000, when he retired at age sixty-five. He was a very successful "oil-finder" in the Texas Gulf Coast trends. His prospects resulted in numerous discoveries and many development wells, including the Alabama Ferry Field in the late 1980s.

In Houston, Art became an active member and leader of the Houston Gem and Mineral Society and founding member of their Mineral Section. Some of his contributions at the society included creating exhibits for the Houston Museum of Nature and Science, starting a school collections program providing teacher kits, many that he assembled, establishing a world-class library of books and periodicals on minerals, mineral locations, and mining history for the society, and leadership at many public events. Art's mineralogical activities are almost legendary. Eventually his examination of tiny minerals, called micromounts, resulted in the discovery of a new mineral in 1995: Artsmithite, a mercury-aluminum-phosphate from the Funderburk prospect, Pike County, Arkansas.

Art's literary activities were even more prolific than his collecting. He researched and knew the mineralogy and collecting histories of all the places he visited. For magazines and mineral club bulletins, he compiled numerous state mineral locality and mining bibliographies, state locality indexes for Rocks & Minerals, field collecting adventures, micromounting columns, and locality mineralogies. His articles were published in Rocks & Minerals (Art served as a consulting editor) Mineralogical Record, Matrix, Gems and Minerals, Lapidary Journal, and Mineral News. He books included *Bibliography of Colorado Mining History* (1993), Collecting Arkansas Minerals (1996), and, with Betty Jean, *Knowing Gemstone Beads* (1990).

Art passed away in November 2009 in Houston after a battle with cancer. He is survived his son, Brett; his brothers and their families; his wife of ten months, Nancy Farah Smith and her family; the members of the Houston Gem and Mineral Society; and his many friends in the greater mineral community. Art made provisions to donate the entire collection to Wheaton College, where he discovered his passion for minerals. ■

KEIL'S CORNER

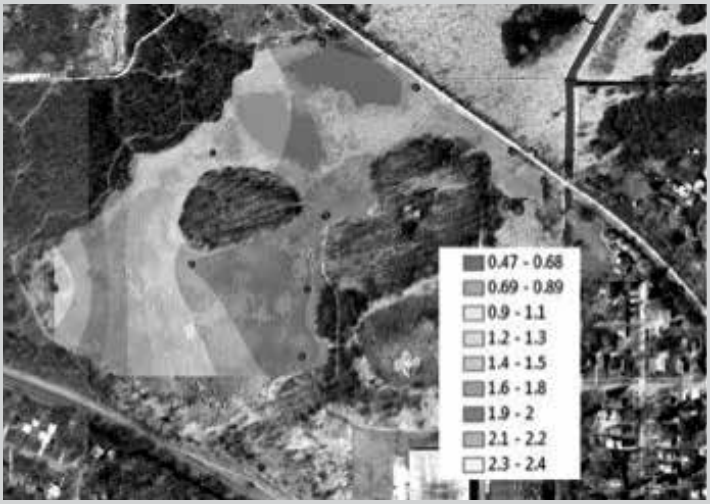
Environmental Monitoring Capacity Expands

My background includes a good deal of experience with environmental pollution assessment. Air pollution was my first specialty area in the environment field. This later expanded into water pollution monitoring. When I first arrived here at Wheaton College there was some basic pollutant measurement capabilities, but now I'm happy to say that these capabilities are greatly expanded. I'll describe some of the new equipment.

We now have the capability to monitor the concentration of particulate matter in the air with a really cool instrument. This sampler combines continuous real-time measurements using light scattering technology with traditional filter-gravimetric sampling. The instrument comes with different inlets that allow us to choose to sample total particles, PM10 or PM2.5. It has a solar panel as well so it can be deployed and operated for extended periods in the field. In the spring of 2013, a team of students used this instrument on the roof of Armerding Hall as a pilot test of the air quality on campus.

Our capability for water quality monitoring has also expanded. We now have a multi-function table top meter with probes to analyze ammonia, ammonium, and nitrate. We hope students will take advantage of this resource to explore aspects of the nitrogen cycle in the environment. Nathan Hadley did a project that demonstrated that nitrate levels in water decreased as it flowed through Lincoln Marsh. A map he made illustrating the results is shown here.

We have more capabilities than these two air and water quality examples. Pollution measurement is being integrated more and more into the Environmental Science classes. Students are increasingly doing projects involving environmental assessment as well. We are also looking to expand our capacity. If you know of working equipment that will be replaced, consider seeing if it can be donated to an educational institution. And if you have any interesting ideas for projects to which we can apply these new capabilities, let us know! ■



DOC MO'S MEMOIRS

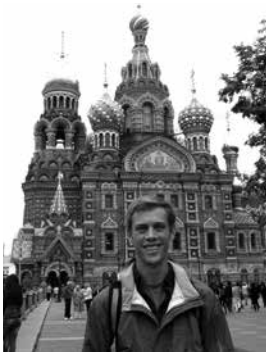
During the past year, I had two opportunities to participate in conferences organized around the theme of the Exodus bringing together different groups of archaeologists, biblical scholars and a few geologists (the latter apparently invited to keep the whole thing legitimate). The first meeting, in May, was *Exodus: Out of Egypt, Transdisciplinary Perspectives on Archaeology, Text and Memory*, held at the University of California, San Diego. My lecture was "Which Way Out of Egypt? Physical Geography Constraints on the Exodus Itinerary" based upon my field and GIS studies in the eastern Nile Delta and northwest Sinai. If you are completely bored you can watch it online at exodus.calit2.net (follow links under Geography & Exodus). The second conference, in January, was at the Lanier Theological Library in Houston. This time, in addition to the scholarly conference, my colleague, James Hoffmeier, Egyptologist and OT scholar at Trinity Evangelical Divinity School, and I presented a tag-team lecture for a more popular audience we called "Moses Did Not Sleep Here! A Critical Look at Some Sensational Exodus and Mt. Sinai Theories." I evaluated the merits of various ideas that invoke certain geological interpretations for the Exodus route, catastrophes, Re(e)d Sea crossing site and location of Mt. Sinai. A video of that presentation is available at laniertheologicallibrary.org/videos/.

For almost 20 years I have been part of a teaching team for the General Education course, *Theories of Origins*. There is no textbook for a course like that, so we decided to write one. In December we secured a grant from the BioLogos Foundation to help us with that task (funds for summer salary, initial production costs, stipends for reviewers, etc.). There were several grants awarded and all grantees were invited to Gordon College, Massachusetts, for a week of discussion and reflection in June, mostly on raising science literacy in the church around the world. We have made substantial progress on our chapters, and we are testing them on students in the course this semester.

In May and June, I worked with senior Joshua Olsen on a study of the geology of the Perry Mastodon site. We benefited from collaboration with Brandon Curry, Illinois State Geological Survey. Using the ISGS drill rig and hand auger tools, we managed to retrieve five probes through the Pleistocene strata at the site. We now have additional radiocarbon dates of sediment organics and one more from bone material. Perry's date is holding of about 13,500 years give or take 100 or so years BP.

In August, I was blessed to mentor eight new freshman women in the Wheaton Passage Program. Passage professors meet their groups at HoneyRock Camp after they have participated in a wilderness, camp or urban experience. My crew had spent an *intense* week in Chicago (in contrast, the wilderness group had a week *in tents*). It was thrilling to walk with these young women through their transition to the Wheaton College experience. It was also my first visit to HoneyRock.

Finally, I did something in the Fall I never thought I would do: I taught mineralogy! Knowing that Jeff Greenberg would be on sabbatical in the fall of 2013, I contacted local universities for mineralogy grad students who might teach the course. No luck. I haven't thought much about mineralogy, except for calcite and dolomite in my beloved carbonates, since taking mineralogy from Paul Ribbe '56 when I was an undergrad at VPI&SU (decades ago). The thought of teaching Miller Indices, stereonet plots, and those mysterious 4/m 2/m 2/m notations kept me up at night as I developed lectures. Jeff was a big help with the labs and answering my stupid questions when he was in town. Students were very gracious and I think we all survived the ordeal. ■



SUMMER EXPERIENCE IN FINLAND

Erik Swanson (ENVR)

Last summer I had the opportunity to do research in Finland through the National Science Foundation's Research Experience for Undergraduates program. Through this program, I was paired with two other American students and one Finnish student with whom I worked on a research project for 10 weeks. We were stationed in Lahti, a small city in the center of Finland that is home a campus of the University of Helsinki. Along with a graduate student from Lahti and her adviser, we assessed the ability of bacterial communities to degrade organic pollutants. Working on this project was a lot of fun and very interesting. It was cool to have a chance to connect with scientists in a different culture and see how those cultural variations effect the way science was done. One particularly striking aspect of lab life in Lahti was the schedule professors and students kept. The lab was very busy from 8am to 4:30pm, but only from 8am to 4:30pm. It was very rare to see someone stay late in the lab. The Finnish mantra was to work hard, and get home quickly to the really important aspects of life: friends and family. It was also interesting to work in a culture that tends to be reserved and quiet, and that values those characteristics highly. Coming from Wheaton where so much value is placed on a certain set of leadership characteristics that usually revolve around extraversion, it was thought provoking to see all members of the Lahti lab look up to some of the most reserved members of the faculty. The research experience itself was also exciting. We were able to use equipment and facilities that are simply not available to students at Wheaton. Working with multi-hundred thousand dollar instruments to measure changes in chemical structure as minute as the removal of a single atom was just plain fun, and seeing all our work come together in a meaningful study was also very rewarding. Furthermore, the comradery that was built during the many hours spent in the lab resulted in friendships have continued after the summer despite significant geographic separation. These friendships and the experience of working in the Lahti lab would have been enough to make last summer one of the best in my life, but the program also allowed enough free time for me to visit Sweden, Estonia, and Russia before we left for the states. Taking it all together, I have a hard time imagining a better way to spend the summer. ■

THERE AND BACK AGAIN: The Yearly Pilgrimage to GSA

Kaitlyn Wallett (GEOL)

In October a group of ten current Wheaton students and three professors joined thousands of geologists in Denver, Colorado for the annual Geological Society of America conference. Students Joshua Olsen ('14) (with Dr. Stephen Moshier) and Joel MacKinney ('14) presented posters on their summer research. Dr. Jeff Greenberg and Gary LaVanchy ('98) presided over a technical session about Geophilantropy in which Wheaton was well represented; professor Dr. Jim Clark, alumnus Steve Chignell ('11), and I all gave talks on various ways the Geosciences can contribute to improving the quality of life in the developing world. My presentation focused on the Water and Sewage Transformation Endeavor (WASTE) that I have been involved with for the last two years at Wheaton, which seeks to create a sustainable wastewater treatment system for implementation in the developing world. A highlight of the conference was a family-style dinner at Maggiano's where 25 Wheaton students, professors and alumni met, shared stories and reminisced.

The conference also provided a valuable opportunity for students to network. Many of my fellow students took advantage of the graduate school booths and explored the options for education after Wheaton. The various technical talks were ideal for those of us trying to find our niche within Geology, since we got to hear about current research from the leaders in those fields. Personally, the conference was the perfect venue for me to meet with some of the professors I had been in touch with and whom I hope to work with in graduate school. I also got to talk with those professors' current students who told me about their projects and the learning experience in their research groups. I look forward to the day when I get to encourage Wheaton undergrads to pursue graduate education in after having some experience of it myself. ■

A ROCHA COMMUNITY GARDEN

Elsemarie DeVries '14 (ENVR)

Elsemarie DeVries (center) at the A Rocha Community Garden

During the summer and fall of 2013, the Wheaton A Rocha Community Garden produced a successful harvest of vegetables and herbs. It also grew an organic community of students, faculty, staff, and family that came from all walks of life to work together in the dirt and sunshine. Despite poor soil conditions, we were blessed with just the right amount of rain and just enough workers to weed, harvest, water, and plant the 4,000 sq. ft. garden space. The harvests of veggies was shared with Wheaton College faculty and staff for several months.

The garden was officially started in the 2010/2011 school year by Curtis Witek ('12) and Jacob Carter ('14), and over the past 2 years efforts focused on improving the soil. Last summer a cover crop was planted, and during the fall of 2012 we planted garlic, a crop that incubates over the winter and was ready for harvest this past July. In the spring of 2013, A Rocha hosted a Planting Day, and seeds for the three sisters companion crop system (corn, pole beans, and squash) were sown as well as herbs, flowers, pumpkins, and beets. Throughout the summer and fall, over 50 people worked to keep the garden going. Volunteers took what they could use, and extra produce was sold to faculty and staff and given to local food pantries. The solid foundation built by several years of A Rocha leadership culminated in a wonderful harvest and a community of grace and, for the first time ever, campus grown food. We look forward to the next year of planting, tending, and harvesting with many more to come. ■

Each year the GIS class holds a poster session as a final project for the class. This year, with a large enrollment the poster session was held in the lower level exhibit hall.

How many Wheaton geologists can you cram in a photo booth? Sharing the joy with Fabien Laugier '10.

Joshua Ryken '15 used a quadcopter to capture images of the Wheaton campus for his Geomorphology project. The crisp images from the camera yielded an excellent stereo view of Blanchard.

CLIMATE RECORDS IN STALAGMITES: Summer REU Program at the University of Minnesota

Joel MacKinney '14 (CHEM)

In an unexpected display of God's blessing, I was accepted into the Earth Sciences Research Experience for Undergraduates program at the University of Minnesota during summer 2013. As an aspiring geochemist, I was excited to be part of Dr. Larry Edwards' research group that seeks to uncover the climate of the past.

My research involved using a stalagmite from Southeastern Minnesota as a proxy for climate history. I used the uranium disequilibrium dating method to constrain the age of a speleothem sample and made interpretations of the climate using carbon and oxygen stable isotope data. I was also able to implement an emerging technique to the field of paleoclimatology that entailed imaging fluorescent layers in a sample that resulted from annual cycles in organic matter.

It was a real privilege to be invited to the research program, but God also had plans to change my heart. I saw His hand in the events of the summer; He showed me His love in a tangible way. I lived with my brother, Ben, who lives in a community of forty believers. They exuded love in a way I had never seen and gave me a glimpse of the heavenly church. The experiences of the summer helped me to grasp the greatest commandment more fully:

Jesus answered, "The most important is, 'Hear, O Israel: The Lord our God, the Lord is one. And you shall love the Lord your God with all your heart and with all your soul and with all your mind and with all your strength.' "The second is this: 'You shall love your neighbor as yourself.' There is no other commandment greater than these." Mark 12:29-31 (ESV)

This past summer was a period to gain greater clarity on future vocation and by God's grace to glimpse His love and the fruit of the Spirit more fully. I presented the research in October at the GSA meeting in Denver. If you are interested, the abstract can be found on the GSA website or Geological Society of America Abstracts with Programs. Vol. 45, No. 7, p.778. It would be great to hear any questions or comments from you! Contact me by email at joel.mackinney@my.wheaton.edu. ■

Mark Hansford '15, David Wheatley '12, and Ian Treat '15

RECENT GRAD RECRUITS FIELD ASSISTANTS AND THEY GROW BEARDS

David Wheatley '12

This summer I had the privilege to work two of Wheaton's best and brightest, Mark Hansford '15 and Ian Treat '15. The three of us spend two months in the desert of Southern Utah. We spent the majority of our time exploring outcrops of the Jurassic Carmel Formation and describing the amazing sand injection features found within the Carmel. With the incredible help of Mark and Ian, we put together an extensive injectite database comprising nearly 900 injectites. This database along with field observations will form the backbone of my graduate thesis.

Spending so much time in the desert offers unique challenges and incredible rewards. The heat and harshness of the environment definitely affected us. We would each drink around six to eight liters of water every day, and needed many breaks to escape from the heat. However, with all its harshness, the desert has much to offer and unique beauty. The isolation brought us out of busyness and made us masters of our own schedules. We had the opportunity to be still and listen. Given our surroundings, God meeting His children in the desert became a major theme of the summer. I was so blessed to have such amazing field assistants not only because of their depth of knowledge within geology, but also because of their depth of character. Within our three-person community out in the desert we challenged each other and grew in our shared faith.

The beauty of the desert surrounded us at all times. During our free time we had the opportunity to explore Utah and Arizona including Grand Canyon, Zion, Bryce, Arches, and Canyonlands National Park.

I definitely miss being out in the desert, its simplicity, and its beauty. To Mark and Ian, thank you for all the desert living. ■

JOIN US ON FACEBOOK!

"The Department of Geology and Environmental Science"

CLARK'S CAPERS

Jim is now on sabbatical leave from Wheaton College, living with his daughter's family in Sacramento, California and enjoying his four grandchildren. This was the best semester to spend in warm California because when the temperatures at Wheaton were dipping to -15 degrees he was enjoying 70's temperatures during an exceptionally warm (but very dry) winter. His sabbatical research involves improving his inexpensive geophysical instruments for water exploration. Again students in Jim's Geophysics class built resistivity instruments and three of them have already been sent overseas for use in developing countries. He joined many other Wheaton students and alumni at the Annual GSA meeting in Denver and attracted some interest from the program manager of Geoscientists Without Borders after his talk about the instruments.

The GIS class continues to grow and to attract students from departments beyond the sciences such as history, international relations and business. It may soon be necessary to offer the class each semester instead of once per year. Student projects this year ranged widely in topic and demonstrates the broad applications of GIS throughout the Wheaton College curriculum (e.g. mapping relationships among underground railroad stations and census statistics in 1850; siting of the cubs baseball stadium; Lincoln Marsh changes during the past 50 years; damage from a local Illinois tornado; measuring gentrification risk in Chicago).

A new experience for Jim is that he is an external reviewer for Gary LaVanchy ('98) who is nearing completion of a Ph.D. in Geography at the University of Denver. Gary's thesis topic is a study in western Nicaragua of the interaction and tension between tourist resort owners and local farmers who each depend upon a limited supply of water. The social implications of a limited water supply is a scenario that will be prevalent around the world and Gary is attempting to use both hydrogeology and sociology to resolve the significant issues. It is a joy for Jim to be included in this important work.

Jim and Prof. A.J. Poelarends from the physics department have acquired a weather station for Wheaton College. This will be useful for the Climate Change class Jim will teach next year and for a Meteorology class that Prof AJ would eventually like to teach. The station is on top of the Meyer Science Center and Prof. AJ has been able to feed the output to the Weather Underground site. If you want to see exactly what the weather at Wheaton College is at an instant you can go to www.wunderground.com and search for the KILWHEAT10 station. It is possible to view monthly data and averages if you want to see how really cold it was there this winter. ■

STUDENT/ALUMNI NEWS

Ian Gottschalk '15 will publish in the student edition of *The Professional Geologist*. Ian submitted a revised class Geomorphology paper and it was selected for publication.

Rich Aram '76 joined a Living Waters trip to Nicaragua recently to drill water wells

Joshua Olsen '14 participated in a field trip sponsored by the Illinois-Indiana chapter of the American Institute of Professional Geologists in June. The focus of the trip was Quaternary glacial deposits exposed in the area surrounding the town of Henry, Illinois. Joshua was asked to contribute his reflections of the trip to the chapter's summer newsletter. Joshua and Ian Treat '15 participated in a week long seminar in May, "Quaternary Geology of the Great Lakes," hosted by the Illinois State Museum and faculty of the University of Arizona's Tree Ring Research Laboratory.

SCHOLARSHIP AWARDS

During this academic year, the department had the privilege of awarding the Geology Scholarship to three outstanding Geology majors. The merit based Geology Scholarship awarded a total of $2800 to three deserving majors, Mark Hansford '15, Ian Treat '15, and Kaitlyn Wallett '14. A passion for geology, involvement in the department, and academic achievement are considered when selecting recipients.

Thank you alumni for your continuing contributions to our scholarship funds – we are blessed to have scholarships to aid our students. Please remember that you must designate these scholarships when making a contribution to the college.

Far Left: Dr. Dave DeVries, 1978. Picture from Bruce Sidebotham '81.

Left: Class of 2013 Grads

CLASS OF 2013 GRADS

Six Environmental Studies majors and seven Geology majors graduated in 2013. We are very proud of our graduates and hope they come back to visit us frequently.

ENVIRONMENTAL STUDIES

Chris Tulimiero (Dec. 2012)
Erin Pyne
Gwyneth Dreyer
Layne Showalter
Sylvi Thorstenson
Ian Keil

GEOLOGY

Darcy Cornell
Kathryne Foltz
Christopher Gates
Frances Griswold
Josiah Hulsey
Sun Ho Hwang
Brit Rustad

DEPARTMENT OF GEOLOGY
& ENVIRONMENTAL SCIENCE

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STUDENT WORK

Left: Environmental Modeling class used the flume for experiments. **Top Right:** Jennifer Pfaff '13 and Jared Elton '13 work on aquaponics. **Bottom Right:** Elizabeth Kennedy '14 and Joshua Olsen '14 discuss Joshua's summer research on the geology of the Perry Mastodon site during the Homecoming Poster Session.