Greetings from the Chair

June 2012

It has been a banner year for Geology in northeast Ohio and at Kent State. We experienced a decent size New Year’s Eve earthquake and saw the growth of shale gas exploration and fracking. And it turns out that these were not unrelated. Chesapeake Energy hired four of our recent graduates this year and we expect this hiring trend to increase. Perhaps not surprisingly, our undergraduate enrollment has seen exceptional growth in the past three years. We have more than doubled the number of majors between Fall 08 (ca. 47) and Fall 11 (ca. 110). And over 50 students are enrolled in our fieldcamp course this summer!

Donna Witter resigned from her faculty position last year to start her own company Sapphire Geoscience Informatics, LLC. We miss her and wish her the very best. Last summer we welcomed Annie Krieger who replaced Karen Smith as the Administrative Secretary. And I’m delighted to report that four new faculty will be joining us very soon. Anne Jefferson (Hydrology) comes to us from UNC-Charlotte where she has been an Assistant Professor. David Singer (Environmental Mineralogy) is finishing a post-doc at Berkeley National Labs and Chris Rowan (Geophysics/Paleomagnetism) is presently completing a post-doc at the University of Chicago. Eric Taylor (Mineralogy/Medical Geology) who completed his Ph.D. at OSU this year will be a new Assistant Professor at Stark. We are very excited to have such a cadre of high-caliber young scientists joining the department this coming year. This year Rod Feldmann was made a Fellow of the Paleontological Society. Carrie Schweitzer and Joe Ortiz were both promoted to Full Professor. Jeremy Green won the Outstanding Teacher Award on the Tuscarawas Campus and Carrie Schweitzer was a Finalist for the Outstanding Teacher Award on the Stark Campus. Alison Smith became Vice Chair to the U.S. National Committee for INQUA and Don Palmer has been appointed interim Dean of the Honor’s College starting in August. Abdul Shakoor was selected to receive the 2012 GSA Meritorious Service Award from the Environmental & Engineering Geology Division.

We’ve had two Geology banquets since our March 2011 Newsletter. It’s always a thrill to be able to award so many scholarships and to recognize our outstanding students at our banquets. We want to thank those who have supported us through generous contributions, many of which directly benefit our students via endowed scholarships. Special thanks to those who contributed toward the Carlson Memorial Scholarships awarded in 2011. Also, we are grateful to Joe and Karen Struckel who this year created a new endowed scholarship for our department.

SAVE THE DATE!

We invite our alumni to come back and visit us on Friday, October 19, the Friday before Homecoming Weekend. The geology faculty would love to catch up with you, swap stories (all true of course!), and reminisce about things geological. More information will be provided later in the summer. Meanwhile we hope you will mark the date on your calendar and contact your geology alumni friends to encourage them to attend.

Sincerely,

Daniel K. Holm, Professor & Chair
M.S. Theses Completed (January 2011 –May 2012)

James Fisher: Collection and analysis of structural data for design of road cuts, I-81 expansion project, Virginia (Shakoor)

Mandy Razzano: Monitoring Algal Production in Akron Water Supply Reservoirs in Northeastern Ohio Using Satellite Imagery (Witter)

Lisa Nowicki: Engineering Geology Considerations for Re-alignment of Interstate 70/76 across the Landslide at New Baltimore, Somerset County, SW Pennsylvania (Shakoor)

Nivedita Mehrotra: Reconstructions of Holocene paleoclimate based on benthic foraminiferal assemblages from Soledad Basin (Ortiz)

Madan Maharjan: Interpretation of Domestic Water Well Production Data as a Tool for Detection of Bedrock Fractured Zones under Cover of the Glacial Formations in Geauga County, Ohio (Eckstein)

Kathryn Wells: Paleoeology of Beringian Lacustrine Deposits as Indicated by Northern Hemisphere Ostracode Biogeography (Smith)

Chandawimal H.E.R. Siriwardana: Paleoclimatic characterization of Arctic Ocean Sediments around the Northwind Ridge using XRF and VNIR (Ortiz)

Inoka H. Widanagamage: EMPA Dating of Monazite from High Grade Metamorphic Rocks along the Highland-Vijayan Boundary Zone, Sri Lanka (Holm)

Natalie Cope: Thermochronology and Geochronology of the Otter Lake Region, QC, Central Metasedimentary Belt, Grenville Province (Holm)

Wondwosen Seyoum: Hydraulic Relationships between Buried Valley Sediments and Adjacent Bedrock Formation (Eckstein)

Ph.D Dissertations Completed (January 2011-May 2012)

Ahmad Y. Dalqamouni: Development of a Landslide Hazard Rating System for Selected Counties in Northeastern Ohio (Shakoor)

Kay Amey: Hydrology And Predictive Model Of Headwater Streams And The Groundwater/Surface Water Interactions Supporting Brook Trout Habitat In Northeast Ohio (Smith)

Khalid Adem Ali: Prediction of Water Quality Parameters from VIR Spectral Radiometry: Lake Erie as a Natural Laboratory for Analysis of Case 2 Waters (Ortiz and Witter)

Geology Scholarship Awardees

Geology Field Camp Scholarships: 2012: Megan Court, Evan Green, and Lindsay Poluga

2011: Rachel Thornton, Chelsea Windus, and Matt Wayman

Emerald Environmental Scholarship: 2012: Kimberly Benedetti 2011: Lindsey Brenizer


John Allen Clark Scholarship: 2012: Carl Jacklitch

Bauer Experiential Learning Scholarship: 2012: Samantha Yost 2011: Linda Frank

Joe & Karen Struckel Scholarship: 2012: Anthony M. Banas

Katherine Moulton Scholarship: 2012: Ashley Tizzano 2011: Ode Frantescu

School of Hard Rocks Scholarship: 2012: Matthew Wayman 2011: Scott Scheiner

Amoco Alumni Scholarships: 2012: Chelsea Lyle, AnnMarie Jones, and Nidal Atallah

Donald C. Gifford Scholarship: 2012: Daniel Gardner, Jessica Nester 2011: Heathter Krivos

Glenn W. Frank Scholarship: 2012: Heather James 2011: Julia Yeakley, Tim Eyerdom

2011 Carlson Memorial Scholarships: Mike Reilly, Nick Piazza, Julia Yeakley, Dorothy Van Oss, Lindsey Brenizer, and Linda Frank
Second Annual Student Photo Competition

2011 First Place Winner—Scott Scheiner

At the end of each summer Geology students submit photos for the Annual Student Photo Competition. The faculty select the top three photos and the winning photo is selected by voting at the Geology open house during fall homecoming weekend. The 2011 winning photo was taken within the Kenai Fjords National Park by Scott Scheiner, a current MS student.

Graduate Student Senate Research Symposium

Congratulations to Geology graduate students at the 2011 Graduate Student Senate Research Symposium. The Geology Department was well-represented, with 7 entries in the poster and oral presentation divisions. Congratulations to Julie Gouin, who took top honors in the Master’s degree section with her poster! In the “nomination awards” categories, the Geology Department had two winners: Ovidiu Fantescu, who won “Best Creative Endeavor,” and Adiel Klompmaker was awarded “Best Research.”

A Thriller of a Discovery: Fossil Hermit Crab Named After Michael Jackson

Adiël Klompmaker, a Ph.D. candidate in the Department of Geology at Kent State, displays an example of the new species of fossil hermit crab named after superstar Michael Jackson. Klompmaker was part of a team of paleontologists that made the discovery in northern Spain.

The team made the surprising discovery on June 25, 2009. Later that day, while meeting at a restaurant in the city of Alsasua, the group saw on TV that international superstar Michael Jackson had passed away that day. The paleontologists decided to honor the “King of Pop” by the naming the new species after the late music icon: Mesoparapylocheles michaeljacksoni.

“Michael Jackson’s music will no doubt live a very long time and influence many people, so I think the name is appropriate,” explains Adiël Klompmaker.
Chesapeake Energy Hires KSU Geology Majors

Recent (2011) BS Geology graduates Mike Reilly, Erica Strohmeyer, Pat LaQuatra, and Rachel Thornton now work for Chesapeake Energy. All four are presently participating in the Field Geologist Development Program for Nomac Services, a subsidiary of Chesapeake Energy. The program consists of three training phases which takes nearly a year to complete, in part because of field work required in between each training phase. The program was designed specifically for recent geology graduates and involves training in basic company background, safety, and mudlogging terminology/techniques including learning specific rules for creating mudlogs, basic mudlogging interpretation and learning to identify lithologies of drill cuttings. Some of the training is here in northeast Ohio but some is also in Oklahoma at Chesapeake headquarters. All four recent alumni state that they are very excited about working for Chesapeake Energy.

Geology Department
Homecoming Float

First Place KSU Winner

This was first year in which all of the Kent State Geology student organizations banded together to build a float for the KSU Homecoming parade. It was difficult to decide on a float for the parade but the final decision went back to childhood science projects. The organization built a giant volcano that ran on the traditional baking soda and vinegar. It was a great time constructing the float and even more fun riding along with it. The best part about the float is that it took first place in the KSU Homecoming float contest.

Kent State Association of Environmental & Engineering Geologists (KSAEG) Workshop

In May, the Kent State Association of Environmental & Engineering Geologists (KSAEG) hosted a Student Field Workshop for 30 geology students. Local drilling company, HAD, Inc., volunteered time and equipment to demonstrate basic drilling and soil sampling techniques. Abdul Shakoor and graduate student Nate Saraceno, gave additional demonstrations on groundwater sampling techniques, well installation, monitoring equipment, and led discussions on hydrogeology and rock coring. These techniques are basic to subsurface investigations in many fields of geology, and easily applied to specific jobs, giving our students an edge in the job market for entry-level positions. The workshop was so successful that KSAEG plans to make this an annual event! Alumni interested in volunteering time as a practicing geologist at KSAEG’s next Student Field Workshop can contact Nate at nsaracen@kent.edu.
Yasaman (Jasmin) Rafighdoudt is currently a visiting Ph.D. student from Ferdowsi University, Mashhad, Iran. Jasmin completed her M.Sc. in Geology (Sedimentology) from Tehran, Iran, and she is presently focusing on environmental geology and sedimentology for her Ph.D. research. Specifically, her research lies in the determination of water quality and assessment of transport and fate of contaminant in rivers. She is seeking to identify the effects of hydrocarbon springs in concentration of organic contaminants and heavy metals in soil and water and also the effect of sediments in the absorption process of these heavy metals. Jasmin is working with Yoram Eckstein during her time here at Kent State (6-12 months).

Dr. Liang Yi just completed a one year post-doc with Joe Ortiz studying the Milankovitch-scale changes in the Asian Monsoon during the Pleistocene as recorded in marginal marine sediment off China. Dr. Yi completed his doctoral degree in Environmental Science from Yantai Institute of Coastal Zone Research, Chinese Academy of Sciences, in 2010. He also holds an M.Sc. in Quaternary Geology from the State Key Laboratory of Loess and Quaternary Geology, Institute of Earth Environment, Chinese Academy of Sciences, earned in 2006, and a B.A. in Geology from Geology College, Chengdu University of Technology (also known as the Chengdu Institute of Geology and Mineral Resources) in 2003. He is currently a Research Assistant in the Marine Geology and Quaternary Research Division of the First Institute of Oceanography, State Oceanic Administration, People's Republic of China.
What a terrific year! We made several visits to the Smithsonian Institution to examine fossils in the Natural History Building and pickled animals in the Museum Support Center in Maryland. Several students, including Adina Franțescu, Ovidiu Franțescu, and Cristina Robins, accompanied us to do their PhD research.

During the 2011 holiday break, we traveled to Argentina where we met Silvio Casadío for field work in Mendoza and Río Negro provinces. We were there before the volcanic eruption that buried the area in ash. The big adventure of the year was laboratory and field work in China. We were invited to travel to Chengdu, Sichuan Province, to study Early Triassic lobsters and shrimp from a remarkable assemblage of thousands of newly discovered fossils. The entire experience was exciting and rewarding. Based upon that visit, we obtained an NSF grant to return this year and have applied for National Geographic support for 2013. Fingers are crossed.

The Chinese effort has resulted in a paper on the fossil lobsters to be published in the Journal of Paleontology this year. In addition, work on the Treatise on Invertebrate Paleontology has progressed to the point that two sections dealing with some of the primitive crabs have been submitted for publication in Treatise on Line, an electronic publication series that appears in advance of the printed Treatise.

Several Stark Campus students have been involved, either as NSF Research Experience for Undergraduates support or as assistants supported by funds from the Stark Campus, in research at Kent Campus. These efforts provide valuable experience for the students and provide additional incentive for them to continue their studies. The Stark Campus Geology Club went to Penn-Dixie Quarry in New York to collect Devonian fossils. Rod has been teaching graduate paleontology courses each semester, and in the Fall, 2011, returned to introductory teaching – Earth History – for the first time in decades. He also worked with Adina and Ovidiu to develop an on-line laboratory in Earth History which had its debut in Summer 2011. We are still tweaking that effort.

All things considered, it has been an extremely busy and exciting time. With more travel plans and field work this year, we anticipate a great year ahead.
Over the past year I have enjoyed teaching Earth Dynamics, Earth History, Earth Dynamics Lab, Earth History Lab, Oceanography, Introductory Hydrogeology, and Summer Field Camp. This spring I also added an online version of the Geology of National Parks course. I am currently collaborating with Ann Harris, from Youngstown State University, on the new edition of the popular text book “Geology of National Parks” which will include new national parks and incorporate material for online teaching. In Hydrogeology we traveled to Mammoth Cave National Park again to study karst aquifer systems. We spent time exploring karst landforms and springs and ventured underground for six hours to study the formation of different cave levels, including the present level of Echo River with its blind fish. At field camp, we had another enjoyable field season of geologic mapping, rock studies, and eating at Sanford’s. The weather was very mild again which made field mapping very enjoyable, but at Yellowstone we woke up to ice on our tents. The field camp continues to grow in popularity with 26 students attending in 2011 and 50 students attending this summer.

Following field camp, I spent the rest of the summer in the Pine Valley Mountains of Utah conducting research on laccoliths and subvolcanic magma systems. I am also expanding my research on laccoliths, dikes, sills, and diatremes into the northern part of the Black Hills where very little research has been done to date. I hope to compare and contrast the different areas which experienced drastically different magma fluxes, which in turn control pluton implacement and eruption rates. Here in Ohio, work continues on the “Ohio State Parks Geology Project” where students are conducting geologic research to better understand the processes and geologic controls that created landscapes within the parks, as well as produce educational resources to communicate these concepts to the public. Currently several students are conducting research on the geology of Nelson-Kennedy Ledges, Mohican, Malabar Farms, Punderson, and West Branch State Parks.
Joseph Ortiz

I am pleased to say that I was promoted to full professor this fall. It’s hard to believe that I have been here at Kent State for over a decade now. Last fall I taught Scientific Methods for the first time since we redesigned the class for our upper division undergraduates and first year graduate students. This required significant development—all new lectures and lab activities focusing on analysis of real data. This spring, I taught Environmental Core and Well Logging, a subfield of geology that is rapidly evolving. We have a new text and I have revamped all of the lecture materials to keep up with the changes. The enrollment in Sed/Strat was so large that we had to offer two lab sections for the first time since I have been here at Kent. I had the opportunity to head down to the H.R. Collins Lab with both my Well Logging and Sed/Strat classes for a Workshop on the Paleozoic strata of Ohio that I developed with the Ohio Geologic Survey and to see their new spectral gamma logger in operation.

This year I worked with a post doc, Liang Yi, from the People’s Republic of China. Liang is researching Milankovitch-scale climate change in the Bohai Sea using grain size spectra and VNIR derivative spectroscopy. We’ve published one paper in Paleo., Paleo., Paleo., and have a second accepted pending revision in Boreas.

I’ve published three other papers in the past year. One was in collaboration with Doron Nof, a physical oceanographer from FSU in which we presented an analytical model of the Agulhas Retroflexion, the looping western boundary current that connects the Indian and South Atlantic Oceans. Our results suggest that during the last glacial maximum, stronger winds may have contributed to the decrease in heat flux from the Indian to the Atlantic Ocean. Another paper grew out of the lecture that I presented last year at the IODP Summer School on the use of physical properties as proxies in Arctic sediment. Lastly, in the Proceedings of the National Academy of Sciences we presented a 6,000-year long drought record for the Pacific NW, and explored the linkages between decadal scale climate there and tropical forcing.

I participated in two workshops, one in Wisconsin and one in Salt Lake City organized by NSF to help develop a research agenda for the RV Sikuliaq, the first global class Arctic research vessel to be built by the University-National Oceanographic Laboratory System in over a decade. I was also invited to participate in two IODP planning workshops in Copenhagen, Denmark and Kananaskis, Canada to develop plans for scientific drilling in the Arctic in general and the Beaufort Sea specifically.

I am also a co-PI on a new $600k NSF education grant which will provide undergraduate scholarships to help enhance the diversity of the STEM departments at Kent State University.

Abdul Shakoor

During the 2011-12 academic year, we invited the Jahn’s lecturer, Dr. Scott Burns, to give a lecture on Missoula Floods and AEG President, Jennifer Bauer, to make a presentation on landslide mapping.

Our AEG student chapter has been extremely active. Its members have been participating in numerous meetings of the AEG Allegheny-Ohio Section, Pittsburgh Geological Society, and American Society of Civil Engineers. Two of our students, Nate Saraceno and Mike Glassmeyer, were selected to present their research at the Student Night in Pittsburgh and their abstracts were awarded first prize by ASCE and AEG, respectively. Several of the engineering geology students and I presented papers at the 2011 AEG Annual Meeting in Anchorage, Alaska.

I am currently working on an ODOT grant, in collaboration with Ohio State University, on developing a model using LiDAR data that can be used to identify landslides. My role in this study is to suggest landslide areas, from a selected site, for use in the model as well as to validate the model. Once the model is developed, it will be extended to other regions in the state of Ohio. Additionally, my graduate students are working on a variety of projects, including geological investigations of a major landslide in Utah, landslide studies in the Cincinnati area, the influence of natural water content on engineering properties of clay soils, stability of underground caverns in the Cappadocia region of Turkey, effect of grain-size distribution on permeability of granular soils, engineering geology of the Mountain Lake area in Virginia, and stability of colluvial soils in Ohio.

I also continue to serve as co-editor of Environmental and Engineering Geoscience, a joint publication of AEG and GSA.
Liz Griffith

I’m happy to share some highlights from the past year. My first M.S. student, Greg Aaron (B.S. in Chemistry from Univ. of Pittsburgh) is finishing up a year-long investigation at two sites of coal mine drainage in eastern Ohio, with funding from a Society of Economic Geologist Foundation Student Research Grant. Students enrolled in Hydrogeochemistry investigated water quality in a wetland complex in the northern end of the Cuyahoga Valley National Park to aid with wetland reclamation efforts. As with many problems, most students determined we need much more data to make more informed recommendations! Also this past fall, an undergraduate student, Tim Eyerdom, did a project looking at the water chemistry at our Dix stadium well field.

My record of calcium isotopes in marine barite and coeval bulk carbonate over the Eocene-Oligocene transition was published in Geology this past summer. I also had two field excursions with my new Ph.D. student, Hasanthi Wadanagamage (KSU M.S. 2011) to Oklahoma, Utah, and Colorado. Hasanthi is still processing the sediments for her Ph.D. In December, I presented initial results of stable mass-dependent isotopic fractionation of strontium in marine barite at the Fall Meeting of AGU in San Francisco. I am always surprised how large this meeting is... with over 20,000 people attending last year. Afterwards, I went with Hasanthi to the Univ. of South Carolina to measure stable mass-dependent isotopic fractionation of strontium in water and barite prepared from samples collected this past summer in southwestern Oklahoma (see field photo taken July 2011, approx. temperature 110°F!). She will be presenting these results at the annual Goldschmidt conference in Montreal this month.

I will be presenting calcium isotope results from the Paleocene-Eocene Thermal Maximum 55 million years ago, which are affected by the extreme warming and ocean acidification event at this time (not too dissimilar to the experiment we are performing with our oceans today).

I taught Geochemistry this spring for the first time. Many of the students now take it to fulfill a requirement for the new Environmental Geology concentration. I am really enjoying interacting with so many undergraduate majors as they discover the many varied applications of geochemistry.

Neil Wells

I was thrilled to get a sabbatical this spring, which flew by way too fast but was a fantastic opportunity to pursue a new line of research on glacial lake shorelines in the Erie basin. These shorelines turn out to be wonderfully complicated, more so than I expected, but after several months of wrestling with some huge digital elevation models and a bunch of programming, I’ve got multiple new lake levels, large waves from the wrong direction, a change to the accepted sequence of the ups and downs of the lake, and some isostatic rebound where there wasn’t supposed to be any, all of which rather amazingly makes sense of a really complicated story. I’m midway through writing up the first two papers to come out of this, so it’s back to the computer to finish them up.
Alison Smith

The past year has been a particularly busy one! I continue with research into the applications of ostracodes as paleoclimatic and hydrologic tools in reconstructing Late Pliocene through Holocene aquatic environmental records. I have not done much fieldwork this year—its been a year for writing up and working in the lab. Doctoral student Kay Amey and M.S. student Katie Wells graduated in 2011. M.S. student Frank Mathias is working on a million year record of Butte Valley paleolake, the site of the modern Meiss Lake in northern California.

Don Palmer and I wrapped up work on a grant on Geauga County springs during 2011, and co-chaired a session at the Northeastern-Northcentral GSA Meeting in Pittsburgh. We also have two book chapters in press now on the environmental applications of the ostracode record. This year the Sage Environmental Handbook (2 volumes) was published, which has my chapter on the evidence of environmental change from terrestrial and freshwater palaeocology (biological proxies). NANODe, the North American Nonmarine Ostracode Database (www.kent.edu/NANODe) is now also available through the new public access community database Neotoma (www.neotomadb.org) which houses biological proxy data used in paleoclimate and paleoenvironmental analyses. Katie Wells who was funded on our Neotoma grant from NSF, produced the absolutely heroic effort needed to get the 600 sites of NANODe into Neotoma! Also, I received funding from NSF to organize two international symposia on ostracode research: the first occurred in Graz, Austria this past July with 36 ostracode researchers from 8 countries attending, and the second will occur as a short course just before the 2012 GSA meeting in Charlotte, NC this coming November. Finally, I have been appointed as Vice Chair to the U.S. National Committee for INQUA, so, things have been busy! I would love to hear from you, and remember, if you have any fossil collections taking up space needed for other things—please donate them to the teaching collection!

Yoram Eckstein

I have been working with one of my graduate students (Ramin Safaei) on construction of a numerical model of ground water flow in a small drainage basin impacted by coal mining operations in southwest central part of West Virginia. The coal mining operations are located at the headwaters of the drainage basin. Ramin is currently making model sensitivity tests and works on the model verification using stream elevations as a constant-head boundary. Independently of Ramin’s project I am personally working on the mobility of the neurotoxic metals (e.g. Aluminum, Arsenic, Lead etc.) originating from coal mining operations in the same region of West Virginia. Since the metals were detected in elevated concentrations in several residential water wells, this work is conducted in cooperation with Dr. Scott Simonton of Marshall University in Charleston, W.V. specializing in risk analysis and with a number of medical experts.

This Spring 2012 another of my graduate students (Darren Reilly) prepared his MS-thesis proposal. He is planning to test whether residential water wells in four counties of northeastern Pennsylvania were indeed contaminated with the flow-back fluids from the nearby gas drilling and hydro-fracturing (fracking) into the Marcellus Shale, as alleged by several residents there. Darren has special interest in this subject, as his home is located in one of the four counties. He has already obtained a large number of chemical analyses of the fracking flow-back fluids, and he will dedicate the months of May-July to collecting of samples from the residential water wells.

My summer will be dedicated to development of the Selected Topics course in Use of Numerical in Ground Water Flow and Transport Modeling scheduled for Fall 2012.
On the teaching front, I had the chance to develop online versions of Kent CORE courses, Earth Dynamics and Earth History. So far more than three hundred students have successfully completed these courses. This was as much a learning experience for me as it was for the students. The online delivery approach caters to a population of working professionals and non-traditional students, and properly done can be instrumental in Earth Sciences education for a much larger student population. This is still a work in progress and I plan on fine tuning and updating these courses to achieve an end product that can compete with other similar established online introductory Geology courses from other universities. A much more challenging task was to develop an online section for the Earth Dynamics Laboratory. I had the opportunity to work with exceptionally capable graduate students in developing a basic format for these 'online' laboratories and we plan on updating the material over the summer to a truly 'web-based' format that we will offer starting from Fall 2012. The online education at Kent State has also led to research opportunities. I am currently collaborating with faculty members from other science departments to prepare a research project which aims to compare traditional face to face class experience to the new online courses and thereby develop a rubric that can help develop effective online courses in the future and evaluate existing online courses.

Last year I also taught a selected topics class on the use of trace element and radiogenic isotope geochemistry to answer questions related to formation of granites. The class size, though small, had students who took up the challenge and handled the course material very well. I will continue teaching this course in the future with minor modifications.

Last summer I joined David Hacker in teaching field camp. I saw some world class geology and had the opportunity to observe and mingle with our student population much more closely. This was a great experience for me and I look forward to doing this again. Field camp also generated research possibilities. David and I have started a research project looking at shallow level intrusions in the Black Hills area to study the timing and mechanism of these intrusions using an array of radiogenic isotope, trace element geochemistry as well structural analysis techniques. We have already collected field samples which need to be analyzed and will collect more samples this summer.
Jeremy Green

This past year has been a wonderful flurry of teaching, research, advising, and community and professional service activities! I had the privilege of mentoring my first undergraduate honors student, Mr. Nicholas Resar, in the completion of his senior honors thesis. Since January 2012, Nick has worked closely with me on using the scanning electron microscope housed in McGilvrey Hall to examine tooth scarring (termed ‘dental microwear’) on the teeth of living sloths and armadillos. We were pleased to find that under high magnification (500X), dental microwear patterns correlate broadly with feeding behavior in these animals. For his honors thesis, Nick independently examined dental microwear in extinct ground sloths and was able to correlate the scarring patterns with diet in a few species. Nick successfully defended his honors thesis research this semester, and he looks forward to a successful future career in paleontology. In other areas of research, I continue to work closely with several colleagues from the University of Chicago and the Field Museum of Natural History on reconstructing life history patterns in Permo-Triassic dicynodonts from South Africa using growth lines from tusks. We plan on submitting our initial findings in consideration for a major National Science Foundation grant this summer, which will fund the major aspects of future directions in this ongoing project.

The vast majority of my time this past year was spent teaching undergraduates at the Tuscarawas regional campus about the natural wonders of our planet. My teaching curriculum includes nearly all of the Kent CORE courses in geology, plus my upper division All About Dinosaurs class. Beyond teaching, I have had the pleasure of serving both the Kent State community and the public community through opportunities to speak at various events. In particular, I gave a well-attended, community-invited talk at the Wilmot Wilderness Center in April 2012, entitled ‘Were dinosaurs really warm-blooded?’ I was pleased to have several student volunteers from my dinosaur class attend and serve as group discussion leaders among the audience members during our break out session. I look forward to very productive and fruitful year in both teaching and research in 2012 and remain thrilled to be involved in the Geology Department here at Kent State University. Please feel free to stop by my office and visit anytime!

Donald Palmer

In the last year I enjoyed teaching Earth Materials I (the course formerly known as Mineralogy), Engineering and Environmental Geophysics, Economic Geology and Oceanography. For my efforts I’m very pleased to have received this year’s Glenn Frank Outstanding Teacher Award and the Student Accessibility Services Faculty Recognition Award.

This summer I will travel to London and then to the Black Sea. In August I will begin a year long stint serving as Interim Dean of the Honor’s College. I will miss teaching in the Department but I look forward to working with Honor’s College students from across campus. I expect to return to teaching in the fall of 2013.

With beautiful April weather, Professors Rod Feldmann and Carrie Schweitzer lead paleontology students to Caesar Creek (Ordovician), Oakes Quarry (Silurian), and East Quarry (Devonian) to collect fossil specimens and map quadrats.
Sue Clement

This year, I continued to focus on teaching our Kent Core courses at the Geauga Campus and Regional Academic Center in Twinsburg and will be moving to the brand new building in Twinsburg as of August 13th.

I continue to serve as advisor for KSU Geauga's Gaia Society. In the fall, we completed another cleanup of a marsh in the Twinsburg Heights neighborhood and participated in a clean up event with their neighborhood association. I also participated in a workshop called Planning for Climate Impact in Northern Ohio, at Cleveland’s Natural History Museum, presented by National Oceanographic and Atmospheric Administration (NOAA) this past August. This program brought together a collection of urban planners, city and regional agencies, scientists and citizens to think about how climate change would impact infrastructure and ecosystems in northern Ohio. It provided an overview of climate change but, also the notion of mitigation and climate adaption. I plan to use these resources in the upcoming semester. I will develop exercises that ask my Environmental Geology students to review the data and determine which systems will potentially be impacted and then to discuss strategies to address those impacts.

Merida Keatts

I've had a busy year, but mostly because of my beautiful son, Nicholas: 24 lbs, 8 oz. and 32 inches at 15 months. I had a nice long bonding time last spring and summer, and came back to work full time in fall semester. Everyone at work has been very supportive and understanding of my first time motherly challenges. I thought I knew what I was getting into... what arrogance! Everything changes. My consolation - I can tell he understands me... he just doesn't WANT to stop doing whatever he's doing! There is nothing else in my entire life so amazing as this child. I'd love to hear from alumni, find out what your doing. What are your thoughts on the oil and gas boom in Ohio? We're moving the Alumni website to our department site, so I'll be managing the news updates. If you have news to share, please email me, Daniel, or Annie. I'd also be pleased to connect with you on Linkedin.
Karen Smith

What am I doing in my retirement? I work twice a week with Dr. Shakoor on *Environmental and Engineering Geoscience* (E&EG) journal. I’ve also been working (not very hard) for a year now on an inventory of the department keys. In the whole 28 years that I worked there, we had a bazillion keys. I’ve been picking away at identifying them and making charts so the right key can be found for a particular door or cabinet. I’m in the home stretch, finally. I do have a list, still, of those of you who left without returning your keys! I’m still involved with the 4-H horse program in Portage County. I do the paperwork for our club, the webpage for all the horse clubs, and I still spend a week at the Portage County Randolph Fair - the BEST fair in the area! I joined the Garden Club of Kent about 3 years ago and took on the job of webmaster. We meet once a month for dinner, social time, and a speaker. Last winter I worked part-time for a friend who has a tax prep service, I meet for dinner once a month with a group of friends who graduated together, I’ve been “cleaning” my basement and garage, I’ve taken day trips to NYC, Amish country, Holden Arboretum, Cleveland Botanical Garden, and have more “in the works.” Next summer I hope to take a loooong trip to the eastern-most end of Nova Scotia. I want to be able to say that I’ve been as far east and as far west as I can go.

Annie Krieger

I am new to the Geology Department, having started here after Karen’s retirement in June of 2011. It didn’t take me long to learn that I am surrounded by a great group of people, from our exceptional faculty and our wonderful students which have all helped make working here a pleasure.

Not only am I Administrative Secretary to the Department, I am also the mother of four teenagers which keeps me very busy. My eldest son will be a senior here at KSU next year, majoring in Communication Studies. He hopes to move on to Graduate Studies in Public Relations. My 17 year old daughter will start at KSU in the Fall majoring in Pre-Medicine with an emphasis in Chemistry. Her goal is to eventually become a part of KSU’s Neurosciences School. So that leaves me two children that I can still hope will become Geology Majors!
Pete Dahl (Emeritus)

In my second year of retirement I have discovered that September is a great time to travel because the crowds are down and the kids are in school. During that month Susie and I spent nearly three weeks sightseeing in the United Kingdom, from where my mother emigrated after World War II. We basically travelled in a clockwise loop starting from London in the south; proceeding to Inverness in the north by way of Stonehenge, Bath, the Lake District, and Loch Ness; and then heading back to London by way of Edinburgh, York, and Brighton. Also, in July and March, we went to Florida to visit our daughter, Elena, who is now a second-year graduate student at University of Florida, where she is enthusiastically pursuing her MFA degree.

Regarding geological activities this past year, I coauthored two new papers, one on Precambrian geochronology of SW Montana and the other on provenance of an enigmatic gneiss unit in the Adirondack Lowlands. These were published in CJES and Precambrian Research, respectively. Also, my Danish research colleague, Robert Frei, visited us for a few days in November, during which time we worked on three new collaborative manuscripts on Precambrian rocks from the Black Hills.

Lastly, I’ve discovered in the past year that the back of a painting I inherited from my parents preserves a color fragment of a long-lost masterpiece of Danish modern art that was exhibited in Copenhagen in 1918, then cut up by the artist for reuse in later paintings, given that the original work was not well received. To the subsequent lament of the Danish art world, all that exists of the original 3x4-meter mural is a black-and-white photograph. So, I’ve set about to recreate a partial color restoration of this 1918 work by digitally superimposing my own color fragment (as well as digital images of four other known fragments I’ve found out about) onto the original monochrome template. Then, with some careful extension of the colors beyond the rectangular fragment boundaries, I’ve been able to approximate nearly a 60% digital color-restoration of the original mural. The few Danes who actually care about this artist and his work are very excited, and a prominent newspaper in Copenhagen will soon publish a national feature story about this restoration effort, in the hopes of ferreting out yet more fragments of the 1918 mural from private collections, in time for a 2018 centennial celebration of the artist and of his one and only exhibition of a long-lost 1918 masterpiece.

Dick Heimlich (Emeritus)

Since the 2011 Alumni Newsletter, I prepared my second volunteer course on The Geology of Selected National Parks and presented it at the Baldwin-Wallace Institute for Learning in Retirement. I also took several of the Institute’s courses (on history, current events, movies, religion, and art). We had some great trips to San Diego, Cannon Beach (OR), Seattle, WA and Washington D.C.—mostly family-oriented. Although in retirement now, I still hear from a number of you out there, including some alumni from the 1960’s—and that’s a real pleasure!
Students had the opportunity to integrate what they learned in Earth Materials, Invertebrate Paleontology and Structural Geology as they identified geologic formations, found fossil plants and animals and studied erosive formation boundaries between sedimentary strata generated by the tectonic forces of continental collision. Photo by Sean Hunter.

The KSGS T-shirts, Polos and Hoodies are officially on sale! And all proceeds go to undergraduate scholarships! Visit the Alumni section of our website.

If you haven’t visited the Alumni Webpage lately, you’re missing a lot! There are lots of new photos and news items from recent grads and those with a bit more experience to share. Please contact Daniel Holm (dholm@kent.edu) or Merida Keatts (mkeatts@kent.edu) if you’d like to see something added to our Alumni Webpage.

Beautiful Blue and Gold Geology Bumper Stickers Available - $2.00, akrieger@kent.edu