

THE IUP GEOSCIENCE ALUMNI NEWSLETTER

# GEO TIDINGS

## *In this issue*

Tim and Deb Cejka '73  
help fund the new  
science building

Mike Jarvis '08 wins  
college alumni honor

Greg Mount joins the  
Geoscience  
Department

Our Spotlight Story  
Pat Imbrogno '78  
inducted into IUP  
Athletic Hall of Fame

**FALL 2014**

Volume 7 Number 1

Cover: Tyler Allen '15  
on Jones Ridge, Alaska

# Geoscience Department News

## Tim and Deb Cejka '73 Help IUP Take A Huge Step Toward A Brand-New Science Building



Tim and Deb Cejka, both 1973 graduates of IUP, have kicked off the fund-raising drive for our new science building at IUP by making a \$1.25-million gift from their personal foundation. Tim Cejka also serves as a member of the university's Natural Sciences and Mathematics Advisory Board.

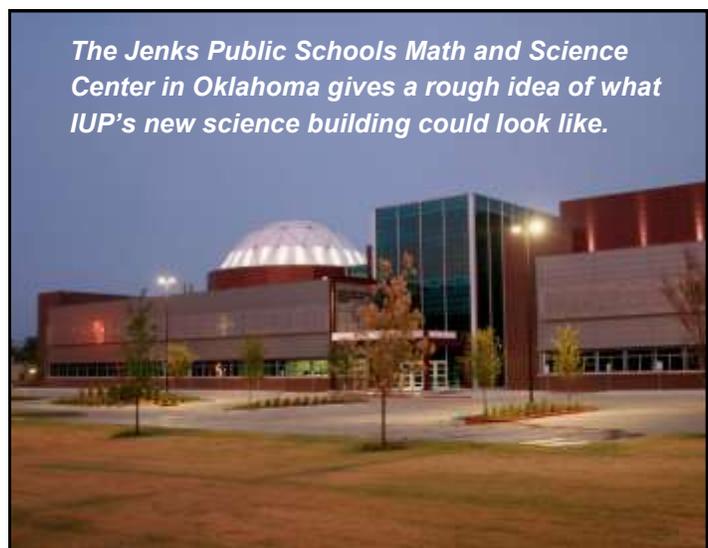
"We're both believers in the power of education," said Tim Cejka, an early Geoscience graduate and retired president of ExxonMobil Exploration Company. "Science is what funded my ability to go through the ranks and ultimately give this gift," he said.

While the Cejkas have philanthropically supported IUP through the years, they said conditions seemed right to support the new science building and to be the first ones in on a worthy project.

Our new science building is still in the process of being designed, and the final building size and structure won't be finalized until all the fund-raising efforts are completed. The current hope is that both Walsh and Weyandt can be replaced with a much larger building, constructed in two stages to mitigate the disruption to classes and research.

If fund-raising efforts are successful, a new planetarium will become a focal point of the building's entrance on the Oak Grove side, near the glass-walled atrium that will replace Walsh Hall. The new high school science building shown to the right gives an idea of what our building might look like when complete.

For more information on our current fund-raising campaign or on any of the naming opportunities in this project, contact Dean Deanne Snavelly at [snavelly@iup.edu](mailto:snavelly@iup.edu).



*The Jenks Public Schools Math and Science Center in Oklahoma gives a rough idea of what IUP's new science building could look like.*

# Geoscience Department News

## A Ninth Faculty Position is Approved

The Geoscience Department is expanding! We'll be conducting a search this year for a new tenure track position in sedimentary geology as part of IUP's new Energy and the Environment research cluster. Please pass this opportunity along to anyone you think might be interested in joining our department. More information can be found at <https://iup.peopleadmin.com/postings/1124>.

## Michael Jarvis '08 Receives Alumni Honor

### 2014-2015 IUP YOUNG ALUMNI ACHIEVEMENT AWARD WINNER FROM NATURAL SCIENCE

Mike Jarvis started his career as an IUP undergraduate intern at EXCO Resources. After graduation, he was hired by EXCO as part of their Marcellus Asset Team in Warrendale, PA. Since 2008, he has worked for several Marcellus-related companies, supervising teams of geologists in geosteering operations.

Mike recently served as the president of the Pittsburgh Association of Petroleum Geologists and is currently Range Resources Appalachia's lead geologist for Marcellus development in northwest Washington County.



# Geoscience Department News

## Dr. Greg Mount joins the IUP Faculty

Come to IUP they said. The weather is great! Snow? We don't get much of that. I guess Dr. Deardorff really didn't want to be the "new guy" anymore. As I left sunny Florida that hot August day, I wouldn't gain a true understanding of cold until I got to my hotel in Indiana and it was 47 degrees. In August. Seriously.

When I interviewed here, I knew that if the job was offered, that I would take it. The faculty, students and potential for research were outstanding. I should have been more aware of my surroundings and paid more attention to the students shivering on our way to lunch on day 2 of the interviews. Beyond being cold, I am honored and proud to be a part of such a great group, and look forward to adding my unique perspective.

For those of you that don't know that I love to hear myself talk, and for those that I haven't yet regaled with my stories of airboats, scuba diving, and fieldwork, this is a perfect opportunity to do so. I did my undergraduate work in New Jersey, moved to Florida for the scuba diving, stayed for graduate school.

My BA and MA are in Anthropology and Archaeology; I worked as an archaeologist in various capacities in the south east during graduate school. I made the cross over to hard science for my PhD, which is technically in Near Surface Hydrogeophysics (Florida Atlantic University). My research

was primarily in the characterization of shallow carbonate aquifers, although I dabbled a bit in carbon cycle and wetlands studies, quantifying methane gas storage and releases in northern and subtropical peatlands and swamps.

Since moving to Pennsylvania, I have gotten involved with a few initiatives for new externally-funded research on campus. I have a small part in the Dominion Educational Partnership, using geophysics to find orphan natural gas wells. I also am working on a NSF submission with the Energy group to set up long term monitoring and identification of potential contaminants from Marcellus exploration and drilling. Most recently, I have been picked to be a participant in the IUP Principal Investigator Mentorship Academy, so that I can further my grant writing skills and hopefully attract external funding to keep pushing our research and student involvement to our high standards. As I write this long-winded talk, I just wrapped up a decent week at AGU and I have submitted an internal grant to follow up on some research in south Florida, looking at the Biscayne Aquifer and Miami Limestone. This will add a new research field site for IUP students taking the Winter 2015-2016 Carbonate Field Workshop and Seminar. Let's hope they like frog legs!



***What makes me a unique addition to the department? If we ever get an airboat, I can get it stuck in the Oak Grove. Need a python caught, tagged and bagged? I actually have a permit for that. I am also an expert in Everbilly cuisine, studying for at least five minutes in the preparation of Cajun-spiced frog legs (from catching to eating).***



# 2015 Calendar of Events

## April 24, 2015 — IUP Geoscience Day and Geoscience Banquet



The annual celebration of IUP Geoscience student research will be held on the traditional last Friday of April again this spring. We expect to have seventeen seniors presenting their capstone research projects during the morning and early afternoon, with a featured alumni presentation at 2:30 PM by **Richard Parrish '75** who will talk about his career in oil and gas. Rich spent forty years in the oil patch and retired from Chevron in 2014 as Manager of Exploration and New Ventures for Latin America.

In the evening, the Geological Society of IUP will once again sponsor the annual Geoscience Banquet at which graduating seniors and other outstanding students will be honored with awards and scholarships. All alumni are welcome to attend both events. For more information, contact our department secretary, Tracey Emanuel, at [tracey.emanuel@iup.edu](mailto:tracey.emanuel@iup.edu).

## November 1- 4, 2015 — The National GSA Meeting in Baltimore

Join IUP faculty and students in the Inner Harbor of Baltimore for a week of exciting science. February 1 and 2 are the deadlines for proposing a technical session or short course topic. Talk and poster abstracts will be due sometime later in the new year.



If enough alumni are interested, we will organize a get-together at the convention or a nearby venue on the traditional alumni reception night (Monday Nov 2). Please plan to join us there!

1-4 NOVEMBER  
**GSA 2015**  
Baltimore, Maryland, USA



# IUP Student Research

## Troy Berkey '15 Studies Emplacement Conditions of the Davis Lake Lava Flow from Deschutes County, Oregon

Troy Berkey, a geology senior here at IUP, chose to focus on modern mapping and geochemical techniques. He will use these areas of interest to produce a morphometric and compositional analysis of the Davis Lake Lava Flow in Deschutes County, Oregon USA.

These two components will then be compared to determine the emplacement conditions for the lava flow. He created a field map and collected samples from the flow during this past summer's field course, *Oregon Field Experience 2014*.

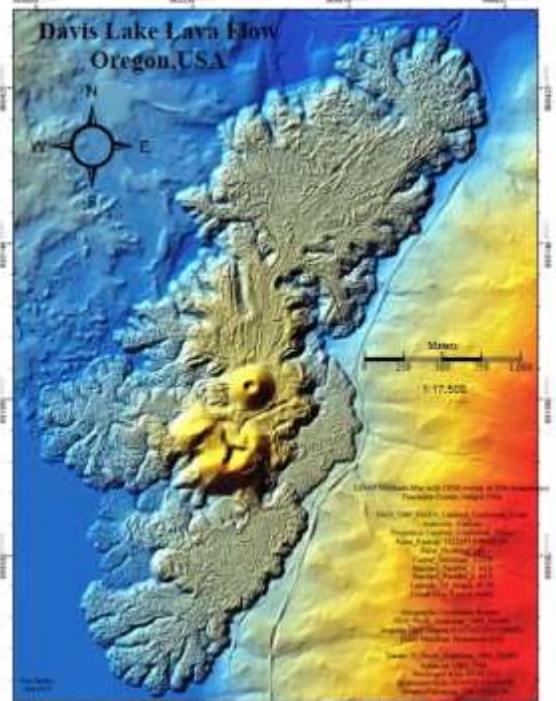


**Troy Berkey (right) studies lava flows in Oregon with fellow IUP students Aaron Seidel and Megan Barlow.**

To obtain the first component of this project, Troy has extracted morphological measurements from high resolution LiDAR DEM's, using ArcGIS. These extracted topographic measurements will be processed to construct multiple cross-sections of the flow unit (or units).

Over winter break, Troy will be performing a thin section analysis on the field samples collected. If all goes well, images will then be assessed for % crystal area this spring, using the image analysis software *Image J*. Additionally, a bulk rock analysis will be performed by way of XRF (x-ray fluorescence) to determine the bulk composition of the collected samples.

Finally, using the extracted topographic data in conjunction with compositional characteristics, Troy hopes to establish accurate flow dimension constraints for modeling purposes. Numerical modeling will be used to establish the effusion rate (eruption rate) and time frame for the flow. To determine the relationship between flow behavior and emplacement conditions, graphs will be created and evaluated. The comprehensive modeled data will be then examined to establish the overall emplacement conditions for the flow (or flows), just in time for Geoscience Day.



# IUP Student Research



*Eric Peroli examining samples under a stereo microscope.*

Eric is currently examining cut rock samples under a stereoscope to start constructing a history of volume gain and volume loss.

## **Eric Peroli '15 Estimates Volume Change History in the Water Street Fault Zone, North Hollidaysburg, Pennsylvania**

The Water Street fault, in North Hollidaysburg, Pennsylvania, has a history of volume loss through stylolization and volume gain through veining (Srivastava and Engelder, 1990). Senior Eric Peroli, working under advisement of Dr. Jon Lewis, is trying to piece together this history by examining the cross-cutting relationships between the two structures with samples taken from the outcrop.

The photograph shown here, courtesy of Macroscopic Solutions, illustrates some of the features Eric is looking at for this study. While he submits a grant proposal to Sigma Xi for petrographic thin-sections to be made, Eric is currently



*Older calcite veins cross-cut by younger stylolites. Photo taken by Dan Saftner '11 using a Macroscopic Solutions imaging system.*

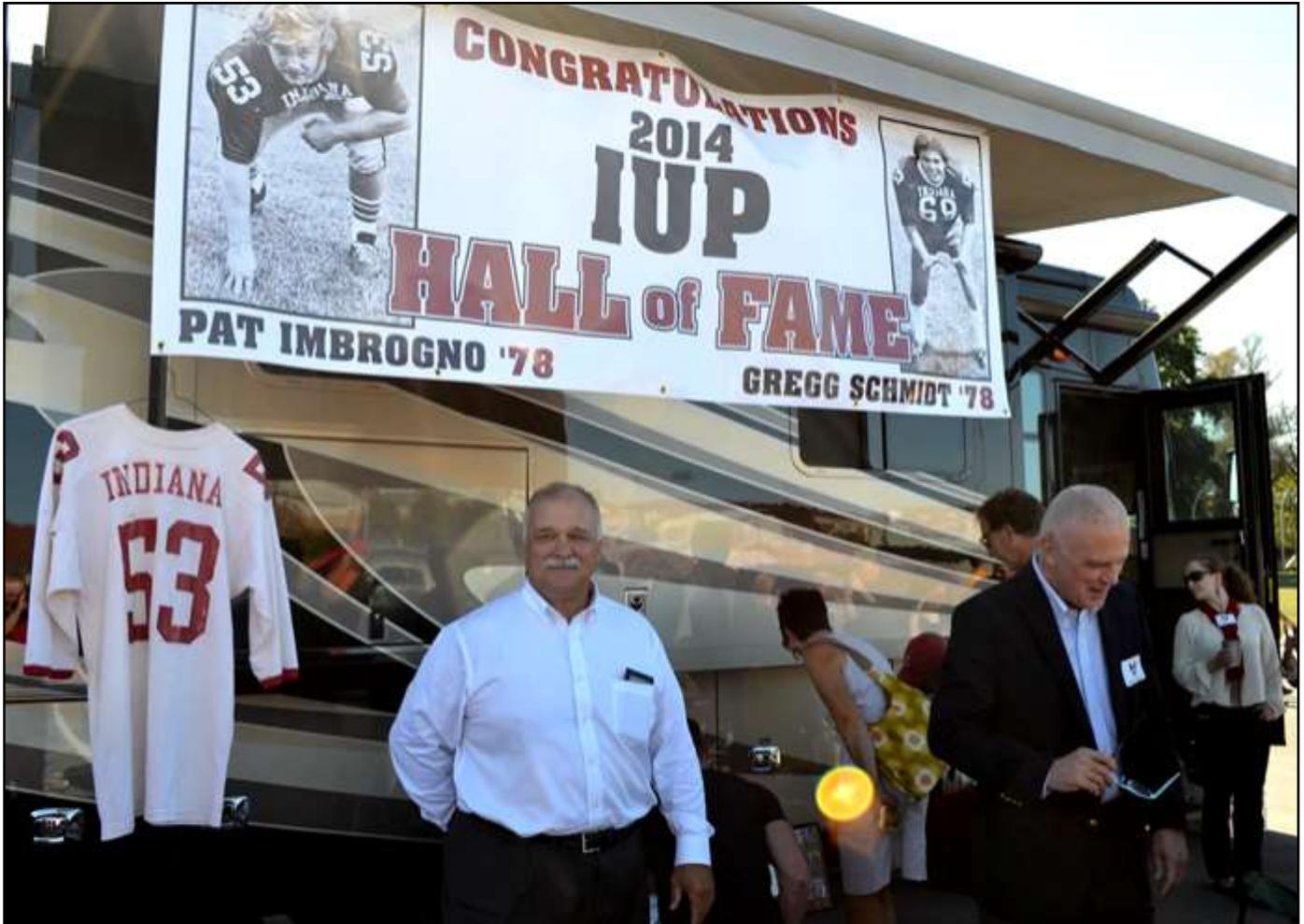
## **IUP Students Watkins, Carpinello and Wagner Present Senior Capstone Research at the 2014 PGS-AEG-ASCE Student Night**



Each year the local geologic and geotechnical engineering societies invite student members to compete for the opportunity to present their research to local members of the Pittsburgh Geological Society, the Association of Engineering and Environmental Geologists, and the American Society of Civil Engineers. On April 23, 2014, IUP students Dave Watkins '14, Jesse Carpinello '14 and Sage Wagner '14 presented the results of their capstone research projects in poster format. All three won awards for their research.

# Alumni Spotlight: Pat Imbrogno '78

## A Geologist Joins the IUP Athletic Hall of Fame!



The IUP Athletic Hall of Fame is officially rocking, now that they've inducted football standout and geoscience graduate Pat Imbrogno '78. Pat's many athletic accomplishments while at IUP include starting as the first true freshman under former coach Bill Neal, and serving as team captain in his senior year. From 1974-78, he was named two-time All-PSAC first team, four-time All-PSAC West selection, four-time Big Indianan Club award winner, and three-time ECAC all-district selection. He was also named Small College All American and NAIA All-American.

### How did you find out about your Hall of Fame Honor?

I have been working from my "GEO-COM LLC World Headquarters" on various Oil and Gas projects as a consultant. A lot is going on in this business from both unconventional horizontal drilling and conventional vertical drilling for energy. While keeping pace with this activity, I received a call from IUP informing me I had achieved induction into the IUP Athletic Hall Of Fame! Hard to believe, I know, but my family enjoyed this honored event in late September.

# Alumni Spotlight: Pat Imbrogno '78

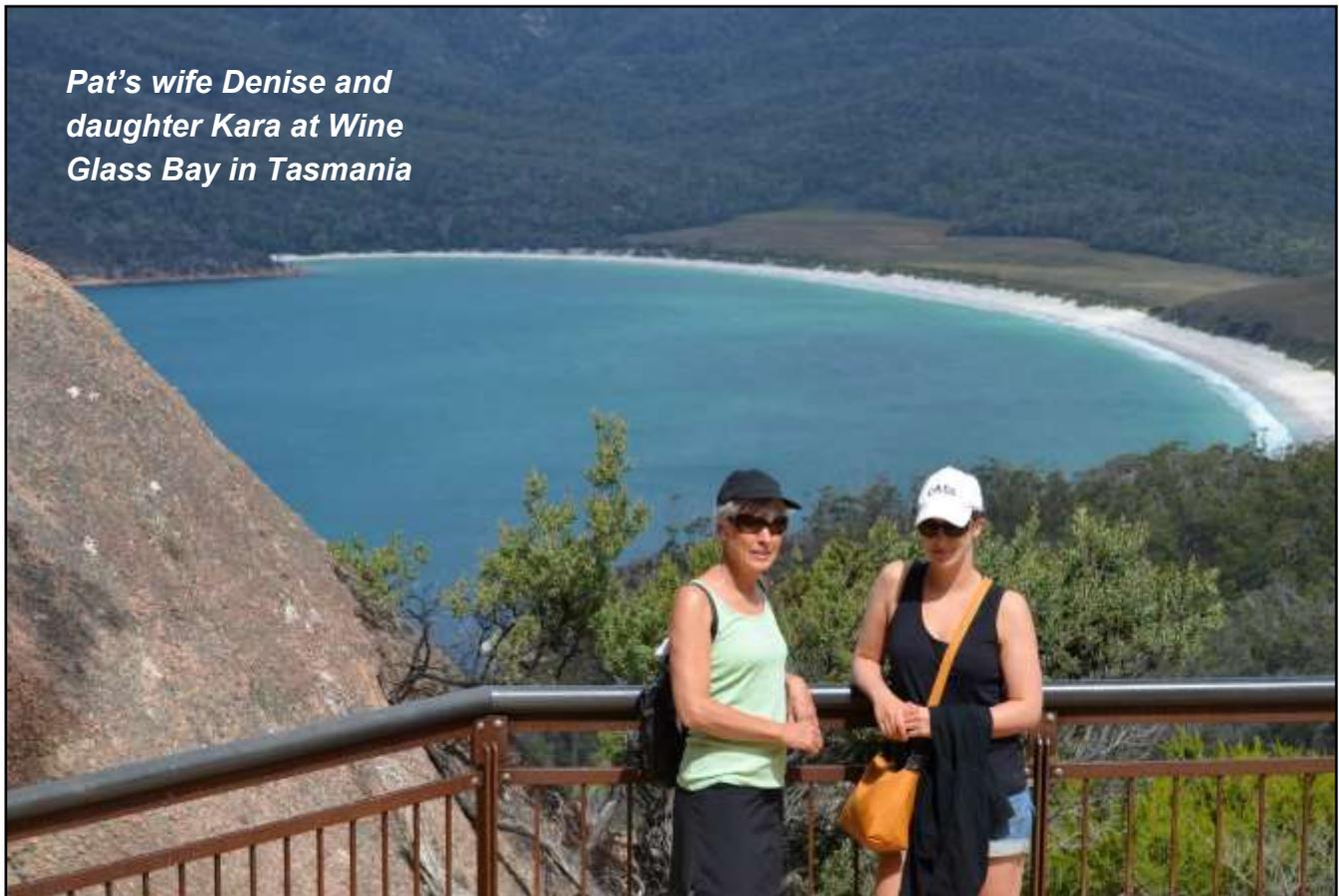
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## **Besides full-time consulting, what else has been keeping you busy?**

The rest of the time I have been tracking my three kids becoming productive working professionals. My oldest, Kyle, is working full-time and finishing his degree in Cyber Forensics and Security. My twin daughters recently matriculated graduate school with Kayla working in Anesthesia in DC and Kara doing research in Australia while applying to Medical School. My wife Denise is still working full-time keeping me out of trouble, but she rarely succeeds!

## **Any interesting geological experiences lately?**

We visited my daughter in Australia recently and spent three weeks looking at geology and occasionally other tourist sites on the main continent and Tasmania. What a geologist's dream vacation! I would recommend this to anyone who enjoys the science. Spectacular exposures and geologic history.



## **Anything else you want to share with your fellow alumni?**

I hope all is well at IUP and am looking forward to the new science building planned. This should add a lot of opportunities to attract new students into being future "Rock Doctors."

**Congratulations to Pat from the IUP Geoscience Department!**

# Alumni News: 1970 - 1990

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## **Dr. Ralph Feather '71**

I have been promoted to Full Professor at Bloomsburg University and have published three more books in Texas, iScience, Grades 6, 7, and 8 with McGraw-Hill Education (2015). I also published a six-textbook nationwide series for middle school, iScience Grades 6, 7, & 8, iScience Life Science, iScience Earth and Space Science, and iScience Physical Science with McGraw-Hill Education. In addition, I published a high school textbook, Physical Science with Earth Science, and a three-textbook series, Florida iScience, Grades 6, 7, & 8, all with McGraw-Hill Education. This places the number of separate publications at over 70 since beginning my textbook writing in 1988. I have been writing for the same publisher, as its name has changed from Merrill to Glencoe and now McGraw-Hill Education.

My teaching at Bloomsburg University includes Teaching Science in the Secondary School, Principles of Teaching, Psychological Foundations of Education, Classroom Management and Effective Discipline, Assessment and Measurement, and Research in Education. Over the past two years, I served as the Chair of the Department of Educational Studies and Secondary Education. As our department recently merged with the Early Childhood and Adolescent Education to form the Department of Teaching and Learning, I have moved back into the classroom full time. It has been a fantastic 10 years at Bloomsburg University!

## **Rich Parrish '75**

In retirement, the past year has found Wendy and myself spending the summer in New Hampshire, where, along with sitting by a lake in the woods, I was catching up on igneous/metamorphic geology while hiking in the White Mountains. (I must have slept through some of our hard-rock classes with Fred Park in IUP, as I was having trouble telling my schists from gneisses). A road trip in our new RV then took us to Glacier National Park and many points in between, via 30 different states. Back in Houston now, I do some volunteer work at a nearby

nature center with native prairie restoration. In summary, I am doing anything I can outdoors to make up for the last 40 years!

## **Tom Watkins '75**

I have nothing very exciting to report this year, other than to say: 1) I continue to enjoy retirement combined with part-time consulting, 2) my wife and I keep up our travels (This year's adventure was to the Holy Land after Easter), and 3) we have relocated to the St Louis area from Springfield, MO.

## **Jon Pina '78**

I just retired from IUP Safety Science / OSHA consultation. BS Geoscience Education '72, Geology MS '78, Safety Mgt. '89 all from IUP. Taught Earth & Space Science at Westmont, Johnstown for four yrs. Worked in coal gasification and clean coal technology for 12 years, environmental remediation 12 years, at IUP for 15 years and am still consulting. I still use my geology background quite often in my consulting! The IUP Geoscience Department was awesome.

## **Diane England Miller '88**

I am in the midst of my third year as a Senior Geologist with Applied Geology and Environmental Science, Inc., an environmental consultant near the Pittsburgh airport. I continue to work on a wide variety of projects ranging from Phase I ESAs to long-term groundwater monitoring of fly-ash landfills. I've also learned way more about PCBs in paint and concrete and the inner workings of natural gas compressor stations than I ever wanted to know.

My son is in the middle of his senior year at IUP. He's actually "studying" in France for the entire year - although most of the pictures we see of him involve food and seem to be taken in every European country except France. My daughter is a freshman in high school and is on the rowing team which has forced us to learn a whole new vocabulary including "Catching a crab," "Rushing the Slide" and "Washing Out".

# Alumni News: 2000-2010

## **Yvonne Branan '01**

Another busy year is coming to a close and I'm happy to report that I was able to get out and see some new geology during a big road trip in the Spring. I have been teaching Geology of the National Parks for several years now, and while I have been to a good bit of them, I'm always excited to add to that list. In April, my family and I visited the Great Smokies for the first time. It was



amazing and I was able to report back to the class that I was currently teaching about it with pictures of rocks!

## **Steve Smith '01**

Well, it is that time of year again to just give an update on the family. We are all doing well and hope the same for you. Aurora is progressing well in second grade at Porter Traditional School. She enjoys reading and math the most, but also likes when they have their "specials" of music, art, and physical education. Since "Frozen" came out last year, everything has been Elsa or Anna – mostly Elsa. She has also shown more interest in dolphins

as well. Dolphin Tails 1 and 2 aided that thought process enough to where she went to a career day at school as a dolphin trainer.

Kate is still at Potomac View Elementary as a cafeteria hostess. She has also gotten more involved with Girl Scouts as one of the assistant leaders for the troop of Brownies that Aurora has now bridged into. She is still the cookie mom, so things will soon get crazy around here with soo many cookies. Cookie Monster would be in his element!

I have continued to do some Civil War reenacting and living history events with the Liberty Rifles. I'm now able to participate as both a Yank and a Reb since the group does both sides of the conflict. The majority of the events this year were living history ones, which means that the unit portrays a specific unit from the war and retraces their routes into battle and some of the camp life as well. With the coming year, it will likely be a quick and busy finish to the 150th Anniversary events as the war came to an end in April 1865. The World War II veteran Honor Flights have also been a staple for the yearly activities, ending with the past weekend's arrival and departure of 14 Pearl Harbor Survivors. Always a treasured experience!



The family stayed a little more local this year for the summer trips. We took two smaller trips mostly within Pennsylvania, but made it into Canada by going to Niagara Falls. Aurora got her first country outside of the U.S. by heading over to the Canadian side to see the Horseshoe Falls. She

# Alumni News: 2000-2010

really enjoyed the Cave of the Winds and the Hurricane Deck, but also had fun on the Maid of the Mist boat ride. A longer stay will be coming sometime in the future, though. The earlier part to this trip was to Pittsburgh for the 4th of July, but then to Moraine and McConnell's Mill State Parks in PA.

The other, longer trip was to the Pennsylvania Grand Canyon made up by the Pine Creek Gorge and Leonard Harrison and Colton Point State Parks in north central PA. We all got T-shirts after doing the hours long hike to the creek level, and then back up on the Turkey Path Trail. We also went to Hershey Park at the beginning of the trip and the PA State Museum where we did get the chance to see PA's state fossil and finished with our first ever trip to Williamsport, PA to see the Little League World Series. We got to see two of the quarterfinal games in between some rain.



Not much new on the job front. Still working at NGA, and still not doing any geology - unfortunately. Have a safe and happy holiday season, and we hope that 2015 is a good one for everyone.

## **Jeremy Bader '05**

I do not have too much to report on since I last submitted to GeoTidings. I am still working as a geologist and Imaging Specialist with Halliburton here in Fort Worth, TX.

The only major thing of note is on October 27, 2013, I got married! I know that is hard to believe, but yes,

it is true! Her name is Beth and now I have gone from a life of simple bachelorhood to now having a wife, 2 step-kids, and 3 dogs on a small ranch south of the city! We are now preparing the ranch in order to add horses, donkeys, and maybe even llamas or alpacas! Oh how things swiftly change in life! I am also still heavy into researching the Pennsylvanian here in north Texas (and elsewhere) with my good friend Dr. Steven Roscoe from Hardin-Simmons University in Abilene, TX. Progress is being made, just slowly...the way I figure it, the rocks were deposited slowly, so the research goes slowly! A few preliminary papers have been published by Steve already, but we are currently working on more detailed writing and finishing up things here in Texas before we concentrate on moving the research to the Appalachian Basin. I hope all is well with my former classmates and professors from IUP Geoscience and also with all you current students and profs!

## **Charlie Burger '05**

All is well here with the Burger Family!! Hadley is now 3 and our little guy Charles Jeffrey (CJ) is now 15 months! Time flies when you're having fun! I recently started a new job in State College working for ARM Group, Inc after working at Mountain Research, LLC for 9 ++ years. The new job has me doing a lot of water supply sourcing, both groundwater and surface water for a number of the large natural gas companies in the Marcellus. Pretty exciting and a welcome change of pace from the environmental consulting industry. Still doing some of that stuff as well so not a complete career switch. Hope all is well with the IUP GEO Alumni and Staff! Wishing everyone a happy and healthy 2015!

## **Kalin McDannell '08**

I'm entering the last year of my PhD and am trying to finish before the end of next calendar year. Working on finishing my work for Mongolia and writing a paper on the long-term landscape evolution. Loosely related, I am working on a laboratory component that will be a chapter as well that will be published using apatites from Mongolia,

# Alumni News: 2010-2014

the Durango apatite lab standard, and some other samples from elsewhere doing cumulative heating experiments on our helium extraction line trying to understand degassing behavior and how that relates to natural samples and the possible intrasample dispersion we see in helium cooling ages.

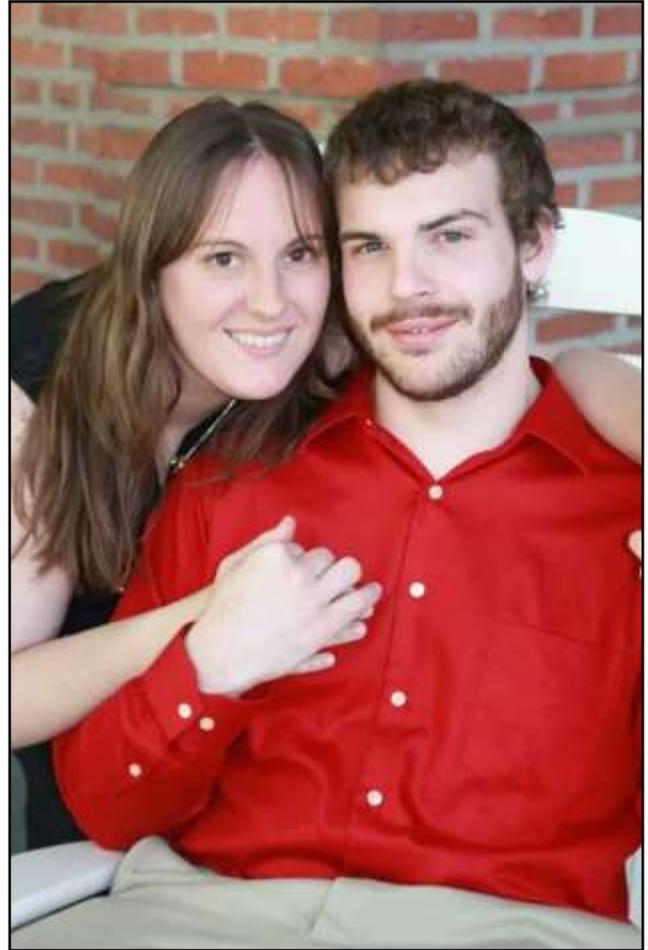
I finished a 2nd internship at Chevron over the summer. I also interviewed with Exxon and did a short course they offered here at Lehigh. I did a second round of fieldwork in Mongolia this past summer and wrote an NSF proposal for funding this last year (fingers crossed) for my lithosphere evolution of the craton work. In September I presented my ongoing Canadian craton work at the 14th International Thermochronology conference in Chamonix, France which was pretty cool! I also just published my MS work in Alaska in the journal *Geochemistry, Geophysics, Geosystems*. Jon Lewis was involved with that as my external committee member. I'll also be heading out to San Francisco in December to present my Mongolia work. I think that pretty much sums up all the things I have going on. I look forward to seeing what everyone is up to in the newsletter.

## **Ellen Lamont '12 and Daniel O'Hara '14**

A whole lot has changed in the past year for us, so we are glad to give a quick update. Dan just graduated summa cum laude from IUP with dual B.S. degrees in geoscience and computer science. While he was sad to leave IUP, he is happy to have started a PhD program, completing his first quarter at the University of Oregon this month. At UO, he is working as a full time research fellow as he was also awarded an NSF graduate fellowship which will fund him for the next 3 years. Currently he is involved with a project looking at landscape response to laccolith growth in the Henry Mountains, UT and is presenting his progress at the AGU Fall Meeting in San Francisco.

As for me, I just graduated in June with my master's degree from the University of Connecticut. My thesis was titled "Cross-structures and their role

in the development of the Taiwan fold-and-thrust belt" and presents work funded by both a GSA graduate grant and an NSF summer fellowship/grant. Following graduation, I moved out to Oregon with Dan. I decided to take a year off from graduate studies to work on publishing my thesis work,



assist with another Taiwan geomorphology project, work on grad school applications and to finish planning our upcoming June wedding to be held back in PA (pictures to follow). In the meantime, I am holding a full-time job doing my second love, home improvement, at a great family-owned establishment named Jerry's Home Improvement.

## **Renee Heldman '12**

I am currently living out in the Philadelphia area. I moved out here in February to take a LTS Science teaching position at Phoenixville Area HS and am currently substitute teaching here this year. I am also enrolling in the MA in Geoscience program at

# Alumni News: 2010-2014

West Chester University this coming spring. I am really excited about the program and looking forward to enriching my geological background, hopefully allowing me to snag a field or lab tech position in the future. I will channel as much geological spirit from Dr. Taylor and Dr. Hovan as I can to get me through the term. You all helped me so much, with special thanks to Dr. Coles for his advisement throughout my 4.5 years at IUP, and I truly miss the department and the alma mater. As a teacher, I know that students cannot thank you enough for the work that you do and I am truly, truly appreciative.

## **Joy Keefer '13**

I have accepted a position teaching Earth Science and Environmental Science at Harford Technical High School in Bel Air, Maryland. I'm really excited about this opportunity, it seems like an excellent school (average of 97% graduation rate) and is about two hours away from my home. It is also cross the street from Harford Community College and next to the community college's observatory.

## **Kellie Kerner '13**



It has been a year and a half since I finished my geology degree at IUP. I miss IUP along with all the great friends and professors I have crossed paths with during my time there. I am currently working on the second year of my Master's degree at New Mexico Tech in Sedimentary Geology with applications to Petroleum Geology. I have been a teaching assistant for the past three semesters,

though it has taught me a lot I am looking forward to industry funding next semester through the Chevron Fellowship. This past summer I interned with Pioneer Natural Resources in Dallas, Texas working with the New Play and Shale Technology team. My project focused on using oil geochemistry to define margins of commercially producing acreage within the Midland Basin. I am excited to be joining the Pioneer team upon graduation in 2015 as a member of their geosteering team.

## **Samantha Ritzer '13**

A few things have happened for me since graduation. I'm here at Virginia Tech pursuing a Masters' in Sedimentary Geochemistry. I recently completed the first part of my field work for my thesis, so I've attached some pictures of our group drilling holes to get my core. The core is through a very specific lacustrine cycle that preserves soft body parts of insects and reptiles.



I'll be presenting whatever data (geochemical and sedimentological) I can gather at Southeastern regional GSA in Chattanooga in March. I accepted a second internship at EQT for the upcoming summer and am really looking forward to it. I thoroughly enjoyed the last one. In non-geology news, Brandon and I recently got engaged and we're planning the wedding for June 2016 after graduation.

# Alumni News: 2010-2014

## Zachary Tolbart '14

I got cited as an author for a GSA Talk and of all things a French paleontology manuscript:

*Miller, J.F., Taylor, J.F., Ripperdan, R.L., Loch, J.D., Freeman, R.L., Evans, K.R., and Tolbart, Z.C., In Review, Proposed GSSP for the base of Cambrian Stage 10 at the lowest occurrence of Eocondontus notchpeakensis in the House Range, Utah, USA: Annales de Paléontologie,*

Nothing else exciting really. I've put in three graduate school applications for University of Utah, Montana State University, and Oklahoma University.

## Andrea Osowski '14

Texas has been amazing. I've been teaching 8th grade at Woodcreek junior high. The amount of support they provide for new teachers is incredible! I also have so much technology in my classroom and soon we will all have Apple TV's as well. I am also going to be helping out with science Olympiad! I definitely made the right decision by moving. I'm working for Katy ISD, which has been named a fast-growth district. It is estimated that the district will grow by 2,000 students each year for the next two decades! And we already have 70,000 students! They love teachers from PA here, so there are a lot of opportunities!

## Featured Alumni Speakers

This past fall, we were fortunate to have not just one or two but five different IUP alumni visit the IUP campus to give talks about their careers and research projects to our faculty and current students.

Starting us off in September was Shaun Malin '00, project manager with HRP Associates Inc. who spoke about his fifteen-year career in hydrogeology.

Shaun was followed in early October by Mark Zellman '99, senior geologist with Fugro Consultants, who discussed his research on the Cheraw fault in south-eastern Colorado.

A more recent alumnus, Dan Saftner '11, stopped by the department in mid-October to demonstrate the microscopy system being brought to market by MacroPod, Inc., the scientific imaging company he co-founded with fellow IUP alum Mark Smith '11.

Dan was kind enough to set up the system and take some research pictures for our students.

In early November, our college alumni award winner Mike Jarvis '08, a geologist with Range Resources, gave a talk to our students about his work in the Marcellus Shale and careers in energy.

Our alumni speaker slate concluded with a panel featuring Mark Ios '81, Vice-President of Skelly and Loy, Inc and currently an Executive Board Member with the Pennsylvania Council of Professional Geologists. Mark explained how the state Professional

Geologist licensing system worked and gave our students some great advice on how best to prepare for the required licensing exams.

Thanks to all our alums for taking the time out of their busy careers to share their experience and wisdom with the next generation of IUP geologists!



**Career Opportunities for the Geoscience Workforce:  
A Presentation by the PCPG Executive Board**

<small>Mark Ios, RUP '81, Vice President at Skelly and Loy, Inc.</small>	<small>Brenda Costa, Vice President at Moody and Associates</small>	<small>Martin Helmke, Geology and Astronomy Chair, West Chester University of Pennsylvania</small>
		
<b>Geoscience Seminar Walsh 104</b>	<b>Free Pizza!</b>	<b>Friday, Nov 7, 2014 12:15 PM</b>

## Faculty News — John Taylor

John reports that 2014 was a year of extremes, starting with a barrage of winter storms that made January and February quite the ordeal. It didn't help that the young neighbor lad, who in previous years cleared the Taylors' loong and steep driveway with his dad's tractor, had the audacity to graduate from high school and move on with his life, leaving John (and Adam) to clear the miserable thing repeatedly, equipped only with shovels and colorful language. This did, however, provide numerous impromptu stress tests for an aging ticker that proved reassuring later in the year (read on).

As winter faded, snow removal gave way to countless hours of specimen preparation and photography to expedite several student projects. New faunal data from Utah and Texas, fortifying the proposal to adopt the base of the *Eoconodontus* Zone as the base of global Cambrian Stage 10, formed the basis of student Zachary Tolbart's talk at Geoscience Day in April. These data also were incorporated in a poster for the Geological Society of America meeting in Vancouver in October, and in a manuscript currently in review with an international journal (*Annales de Paléontologie*) – both with Zach and former student Jim Loch (83') as co-authors.



*John Taylor examines a perplexing outcrop of deep water ribbon carbonates on a frigid June day.*

John also delivered a talk in Vancouver on trilobites and conodonts he and student Tyler Allen collected from the Jones Ridge Limestone in Alaska late in the spring. Tyler and fellow student Savannah Irwin were among the co-authors on the talk, Tyler for his work on the conodonts under direction of Dr. John Repetski (67') at the USGS, and Savvi for her efforts in sorting out numerous species of the trilobite genus *Symphysurina* in the collections.

Day 1 at Jones Ridge in late May also had been an extreme, but a good one, with spectacularly nice weather and the satisfaction of having managed to return to this exquisite, remote location and finish sampling that couldn't be completed in 2011. Not that it was a walk in the park; the 4-man crew left base camp at 9AM the first morning and arrived at the top of the section to begin work at 1PM, much the worse for wear (at least the old guy) from the exertion required to cross over the ca. 2000 foot hogback. Still, the splendid conditions and satisfaction made for one of the truly memorable days of the year.

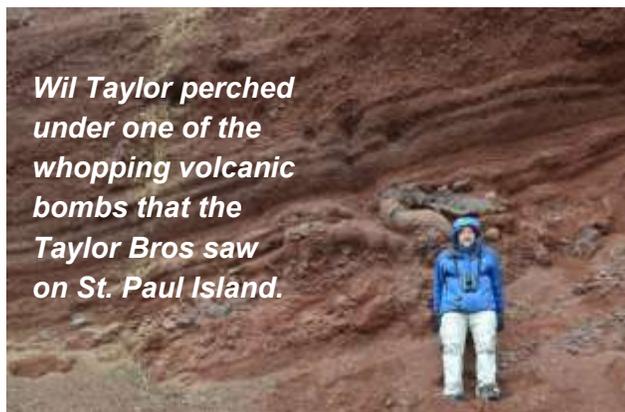


*Tyler Allen (red), John Taylor (blue), and colleague Justin Strauss descending the slick south slope of Jones Ridge in Alaska.*

as base camp. Then came snow, freezing rain, and swirling winds that spawned whiteout conditions to compound the difficulty of navigating the steep slopes and treacherous talus, especially on the return trip with overloaded packs. Despite the

## Faculty News — John Taylor

horrendous conditions, the work was completed, and where others had recovered only two faunal collections from an estimated 30-35m of Ibexian strata, the 2014 crew came away with 13 collections that confirm an Ibexian age for more than 75m of strata within the Jones Ridge Limestone.



*Wil Taylor perched under one of the whopping volcanic bombs that the Taylor Bros saw on St. Paul Island.*

Moreover, it appears that the abuse endured on that trip earned John a certain amount of good weather for excursions later in the year, in particular a joint Sedimentary Petrology/Historical Geology weekend trip that he and Cercone ran to West Virginia and Virginia in early November, and some similarly lovely (60's and sunny) conditions for fieldwork on newly discovered exposures of the Ore Hill Limestone exposures in central PA for student Jeremiah Thomas's senior project during Thanksgiving Break.

Add two uncharacteristically clear days for birding with brother Wil Taylor '82 (shown left) on St. Paul Island in the Bering Sea in June, and another on the coast of British Columbia after GSA, and it looks like John made out exceptionally well on his deal with the weather gods this year.

## Faculty News — Karen Rose Cercone

Karen Rose Cercone spent the first weeks of 2014 traveling with 11 IUP students to the Florida Keys for a new winter version of the Carbonate Geology Field Workshop. Unfortunately, the trip coincided with a poorly-timed blast of cold air courtesy of the polar vortex. Although the students did get to enjoy a mosquito-free trip to the Florida Everglades thanks to the chilly temperatures, they found the snorkeling a bit brisk!



The spring semester was devoted to a service sabbatical. Most college professors think of sabbatical as a time to get away from their university and concentrate on research. However, since the focus of KR's sabbatical research was program review at IUP (specifically the design of a new tracking system for strategic planning and reporting) she spent most of the spring in her usual campus office. She did take

advantage of the time off to take an extended spring break in New Zealand, where she got to see volcanic hot springs, glow-worm caves and a certain small town made famous by hobbits.



Summer was devoted to collecting data for the department's five-year program review, including some great alumni feedback (thanks, everyone!) The report has been approved by the dean and has gone to the provost for the next stage of review.

Karen Rose's non-geology accomplishments for the year were completing a Teacup Agility championship with her border collie Kyanite and adopting a new 'geologic canine': a male border collie named Mica (registered name:

Blitzen's Schist Happens.) All she needs now is to get a dog named Quartz and she'll have enough canine minerals to make a metamorphic rock!

# Faculty New — Steve Hovan

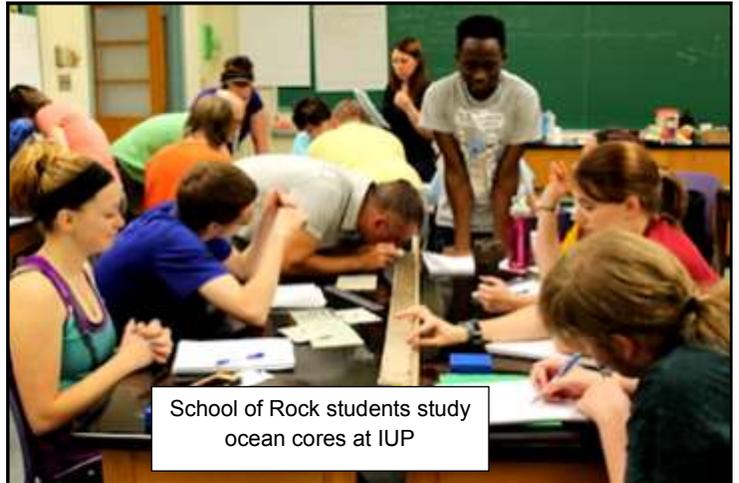
Steve Hovan spent this past summer bringing the ocean to IUP. As part of the International Ocean Discovery Program, the Consortium for Ocean Leadership, and IUP Geoscience faculty offered a unique, immersive course focused on how seafloor sediments and rocks are collected and analyzed to understand important Earth history questions.

Deep sea cores were shipped to campus and used to inform about sedimentation, global change, and geological hazards. Participants learned a range of techniques, practiced spatial learning, and connected basic scientific concepts to societal interests.

Geoscience Department professors Jon Lewis and Steve Hovan teamed with educational expert Jennifer Collins (from Ocean Leadership) to offer participants from all over the country a chance to learn about the significant discoveries made through the study of ocean sediments.

Immediately following the course, students and instructors shared their experiences and knowledge at a special Deep Blue event held on June 16 at the Carnegie Science Museum.

Later in the Fall, Steve took three IUP undergraduate students (Sierra Davis, Michael Barber, and Jules Dill) on an NSF-funded oceanographic research expedition to the Atlantic Ocean. The IUP team spent five

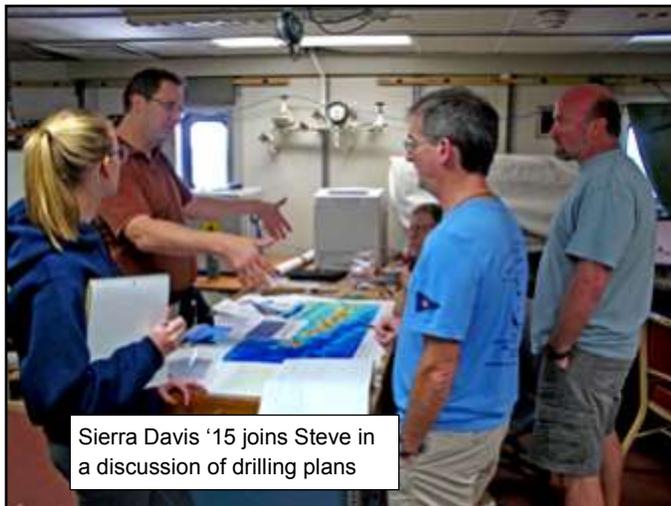


School of Rock students study ocean cores at IUP

full weeks aboard the R/V Knorr collecting sediment cores and geophysical data that will be used to assess how deep ocean current circulation has changed since the last glacial ice age and the influence this has on global climates.

The expedition departed from Woods Hole, Mass., on October 25, 2014 and headed southeast to several coring sites about 600 miles east of the Lesser Antilles. Along with the scientists from IUP, shipboard researchers came from the University of Rhode Island, Boston University, and Woods Hole Oceanographic Institute. Their

mission: survey the seafloor region and identify/collect a suite of sediment cores from water depths up to 6,000 meters deep. This was the last cruise of the R/V Knorr before being retired from service.



Sierra Davis '15 joins Steve in a discussion of drilling plans



Jules Dill '15 examines ocean sediment at sea

## Faculty News — Jon Lewis

Jon has kept mostly out of trouble during the last year (other than trouble of the orthopedic variety; thumb meet bike, bike meet thumb). As promised in last year's update, Jon took Allie Berry and Chaz Cavallotti to the southern Central Range of Taiwan for some fieldwork in January (see photo). The fault data garnered coupled with a bit of earthquake modeling led to an abstract that Jon presented as a talk at the American Geophysical Union meeting in December. The fieldwork and hard work by Allie and Chaz have put us into a position where we are collaborating on a manuscript with National Taiwan University graduate student Wei-Hao Hsu. The learning curve on these things is steep so don't be surprised to hear some groans coming from the Lewis lab in the coming months.

Senior student Matthew Magill continues to work on the Heart Mountain detachment. He earned a paid internship with the PA Geological Survey over the summer and they were so impressed that they extended his internship through the fall semester. He used the Survey's Scanning Electron Microscope to do some analyses of his samples and this has led to grant funds from the IUP Chapter of Sigma Xi. Matthew now has cash to get some thin sections made. Good work, Matthew!

Two more seniors joined the lab, Katie Snyder and Eric Peroli. Katie is consolidating some published literature on Costa Rica in order to set the stage for future big projects. In essence she is providing the framework for a proposal. This is no small task. Eric is unraveling the history of volume loss and volume gain in an exposure of Bellefonte Formation in

Waterstreet, PA. Volume loss is recorded as stylolites and volume gain is recorded as veins. As of this writing it looks like he will be guiding new lab member Shane Simcoviak as he begins thinking about continuing work on this project. Two more newcomers to lab aim to work on the Taiwan project, Aaron Seidel and Jarad Trout. They'll be working with Allie and Chaz.

Lots of things happened this summer. Jon had the good fortune to travel to Oregon with Aaron, Chaz, Eric, Katie and Jarad for Nick Deardorff's research experience class. While there, he snuck away to the Blue Mountains to scope out a new field mapping class. Look for that in a coming summer, to be team taught with Nick. Jon was also fortunate to teach with Steve Hovan another episode of School of Rock. This time it was on campus at IUP. This was the first time that the Consortium for Ocean Leadership's Deep Earth Academy had focused this class on an undergraduate audience and it was a great success. Historically this class has been offered primarily to formal and informal educators. Many students came from off campus but we were

lucky to have IUP students Jules Dill, Mike Barber, Troy Berkey and Jon King in the class.

One of the things that did not get completed this summer is the manuscript written with recent graduate Dan O'Hara and collaborator Ruey-Juin Rau. It's almost finally ready for submission to the Journal of Geophysical Research.

This year Jon also got good news that his sabbatical was approved. He aims to spend spring 2016 in Taiwan bouncing between Academia Sinica (Taipei), National Cheng Kung University (Tainan) and doing fieldwork somewhere in the southern Central Range (Lidao village and environs).



## Faculty News — Ken Coles

This past year saw a successful test of the new 20-MHz (15-meter wavelength) radio telescope for observing the Sun and Jupiter. Because of issues with nighttime access at the previous site, it is being moved to the back yard of Physics Prof. Ron Freda for the winter and spring of 2015. Senior geology major Luke Tatarko is observing Jupiter, specifically the radio outbursts, to look for any patterns related to the rotation of Jupiter or the orbit of its moon Io. We look forward to Luke's results at Geoscience Day 2015.

Testing of the three-axis seismometer in the vicinity of Walsh and Weyandt Halls revealed significant high-frequency noise, probably from the hot- and cold-water lines buried nearby. The Department is investigating sites for a permanent installation farther from the central campus that will still have access to power and the campus computer network.

Nick Deardorff and I look forward to planning a revised version of the Newfoundland field workshop, to be offered in 2016. One possibility is adding study of some of the geology of Nova Scotia. We hope to make a trip to eastern Canada in summer 2015 to scout the geology.

Earth and Space Science majors continue to become successful teachers in small but dedicated numbers. They, along with geology majors, make use of the venerable planetarium. Though the equipment is aging, we look forward to continuing to use it until we have a modern, replacement facility in the new science building.

Mars is a big planet, and making maps of it seems to take a long time! After going through some 15,000 images, the Mars atlas project is starting to take shape. When it is finally done I'll have lots of ideas for student mapping projects (from spacecraft images, not on the ground!) with a focus on the red planet. I attended the Eighth International Mars conference in Pasadena over the summer to keep up on

the latest discoveries. An exciting future project was the topic of another conference at John Taylor's alma mater, the University of Missouri, in August: planning outreach for the summer 2017 total solar eclipse that will be visible across the U.S.

Astronomy is too interesting and varied to keep to oneself, so I share it whenever I can. Astronomy weekend, run by the Amateur Astronomers Association of Pittsburgh at the Carnegie Science center in October was a great chance to show some easy ways to get

started with simple telescopes.

In May, I received an Outstanding Achievement Award for Service in the College of Natural Science and Mathematics. In particular, the shows for students and the public in the planetarium (nearly 150 in ten years) were highlighted in the citation. It is gratifying to be recognized and motivates one to do more in the future!



## Faculty News — Katie Farnsworth

Another year is gone, and who can believe it. I thoroughly enjoyed teaching a Coastal Geology and Processes class, and am even more excited that it has made it into the permanent rotation of classes so I get to do it again soon. This spring was busy as usual with four students doing their senior independent research with me.

Their topics varied from local river systems dynamics, linkages between California climate signals and river discharge and working with our EmRiver Em2 stream table. It was busy, but resulted in a wonderful Geoscience Day celebration. I also co-led a fieldtrip to California in March for a group of graduate students from the College of William and Mary. This year, thanks to alumni donations (thanks!), I could bring

two of our seniors along on the trip as well. So we had an independent study in California River Systems for the first half of the semester and then followed it up with the week long fieldtrip. We all had a great time, and I think they learned something along the way. I also had much fun taking the students from the senior seminar course to Lancaster PA for the regional GSA meeting.

This fall I have been on sabbatical out in Santa Cruz, California working with colleagues from the USGS Marine Geology group. The road trip across country was extra fun as I brought my nephew along, and

then put him on a plane to his first semester of college. I am sure if you asked him, much 'useful wisdom' was passed along on our trip. Well, at least he would tell you CarHenge was worth a stop. While here in California I have been working on numerical modeling the interaction of river plumes in the

coastal ocean. I have also been enjoying my time near the ocean which has included a banner year here in Monterey Bay for whale watching. A great trip up to Yosemite this fall reminded me of how spectacular and majestic geology can be. It has

been great fun working on new projects, meeting new friends and colleagues and being on the coast again. I will surely miss the sound and smell of the ocean, as well as Ukulele on the beach, when I get

back to Pennsylvania at the end of the year. My sabbatical continues for the next semester, but I will be back on the East Coast spending time in Williamsburg with family and working with colleagues at the College of William and Mary as well as in Pennsylvania.

It was great fun this past week seeing Jon Lewis, Nick Deardorff and Greg Mount here in California at the annual American Geophysical Union meeting. Even more fun was seeing current and former students at our IUP-AGU meet-up, let us know if you attend AGU and we will include you next year.



## Faculty News — Nick Deardorff

I am now in my second year at IUP and I am certainly enjoying myself thanks to the support and enthusiasm of the department. While teaching and doing research in the daily grind at IUP is enjoyable enough by itself, I must admit the most exciting event for me over the last year was leading a summer field course in central Oregon. Thanks to generous donations from our alumni, a Next Generation Fund has been established covering all travel and necessary expenses (other than tuition) for our field courses. As many reading this may recall, completion of one field course is required to graduate with a geology degree, and is also a culminating and often transformational experience for young geologists.

Supported by the Next Generation Fund, Dr. Jon Lewis and I flew nine undergraduates to Portland, OR where we picked up the traditional field camp, non-descript white vans to do some proper field work in central Oregon near Bend, OR. For the first two weeks we were in the central Oregon High Cascades, working around the Three Sisters volcanic complex and Newberry Volcanic National Monument; both spectacularly beautiful areas. This course was double duty for the students as it was partially a field methods course where they learned traditional geology mapping skills and also a research experience, by

which they helped me collect samples and data on grain sizes of lava flows. Needless to say it was a busy first couple of weeks where the students learned about effusive vs explosive deposits, cinder cone morphology, lava surface morphologies and emplacement conditions, and mapped andesitic lava flows that were several kilometers long. These lava flows were VERY blocky and treacherous to walk on as they would occasionally shift

when stepped on. Despite the extreme nature of the terrain, the students endured, even in temperatures in excess of 100°F on the flows. The terrain had such a foreign appearance it was mentioned, more than once, that the experience was like hiking on another planet (with a pack full of rocks).

In the third week of the course we moved away from the lava flows and became volcano tourists hiking up a portion of South Sister, observing a tuff ring and tuff cone that erupted through a Pleistocene lake (Fort Rock and Table Rock, resp.), explored lava tubes, and examined explosive tuff deposits around Crater Lake National Park. Crater Lake and its spectacular ignimbrites was a truly fantastic culmination to the trip, and seemed to be the group favorite.



*Students (mostly) hard at work sketching the inside of a cinder cone (known as Mokst Butte), while sitting on a pile of agglutinate that was broken up and rafted a short way when the cone was breached by a lava flow that extends 8km to the northwest. The agglutinate is formed from still hot and ductile volcanic bombs that pile up and weld together before cooling. Fluidal textures of the bombs were still intact and we brought way too many back with us (It was a long hike back to the vans). I am on the right pretending to take notes.*

## Faculty News — Joe Clark

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Greatly enjoyed attending our Friday Geoseminars this past year, where several of my former IUP students including Mark Zellman '99 and Shaun Malin '00 were featured. I am proud of their accomplishments.

Continued drilling shallow Upper Devonian gas wells in Indiana and Cambria Counties with Jeffery Greenawalt (IUP '80) as Senior Geologist despite the increasing burdensome regulations and the low natural gas prices.

Neotectonics paper that appeared online thanks to the AAPG resulted in working on Earthcaches on the Monterey Peninsula that hopefully will get some people looking at active faults.

In September, hiking and fishing in Montana Glacier National Park, but certainly could have used Frank Hall's guidance on the Belt Series geology.



I am looking forward to the November National Meeting of the Geological Society of America in Baltimore in which many of our IUP geologists will be participating.

***Editor's Note: see page 5 for more information about this meeting.***

### **A note from Michael Poage**

We are thrilled to announce the birth of Leila Rose Kelly (pronounced LIE-la) at 11:05 pm on November 2, 2014. She arrived a few weeks earlier than planned but is a healthy 5 pounds 9 ounces and is eating (and digesting!) well. We are enjoying this amazing time as a now larger family.

# 2014 Field Research Experiences

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**Nick Deardorff and students studied recent eruptions in the Oregon Cascades while Karen Rose Cercone led a study of modern and ancient reefs in the Florida Keys**

This year IUP was able to offer two very different field experiences to our growing ranks of majors—over 150 this fall! From the ash falls and lava flows of Oregon to the Florida Keys, IUP students got to see how rocks form and learn how to interpret them.



**Chair's Note:** we try to offer field workshop classes each summer and are adding new trips to in warm locations such as Florida in the winter term as well. In today's economy, however, many IUP students would be unable to afford to take these trips if they weren't also supported by the IUP Geoscience Foundation. We are especially grateful to have received extra support from one generous alum who has underwritten our Next Generation Field Geology Fund to allow Geoscience students to pursue outstanding field opportunities when they arise.

# Please Stay in Touch!

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**FaceBook:**

**GeoTidings**

Geoscience news for your Facebook wall. Add us to your 'Interests' lists so you will be sure to see all of our posts.

**Geological Society of IUP**

Facebook updates for student club projects such as t-shirts and trips.

## And Thanks for Your Support!

Your gifts have helped IUP students conduct field work and attend professional conferences including national meetings of the American Association of Petroleum Geologists, the Geological Society of America and the American Geophysical Union. Alumni gifts will also support next summer's research field workshop in the Southern Rocky Mountains so more of our hard-working geoscience majors can afford to go.

If you have the ability and desire to continue supporting IUP students, you can make year-end donations to any of the following special funds in the IUP Foundation:

- Geoscience Fund 224530
- Joseph C. Clark Research Scholarship 630545
- Walter Granata Memorial Fund 224784
- Paul Prince Memorial Fund 224783
- Next Generation Field Geology Fund 224789



*IUP's secure online donation web-page makes it easy for you to select your areas of support, including the general IUP fund which helps the entire university. Click on the IUP license plate and select 'Specific Area at IUP' to indicate where your year-end gift should go. And thanks again!*

*Photo: Tyler Allen '15 and John Taylor '75 ascend the north face of Jones Ridge, Alaska*

*Photo Credit: Justin Strauss*