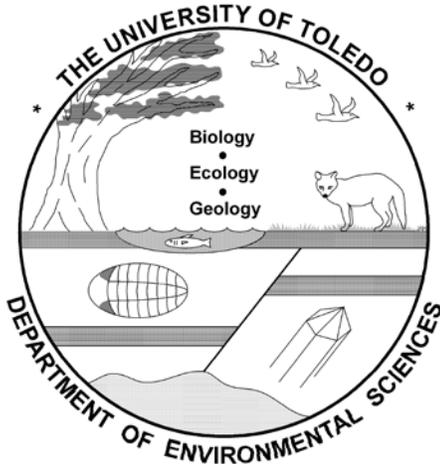




# ALUMNI NEWSLETTER

SPRING 2018



[utoledo.edu/nsm/envsciences](http://utoledo.edu/nsm/envsciences)

Mark J. Camp, Editor



Dr. Timothy Fisher  
Chair

## DEPARTMENTAL NEWS

Hello, friends and alumni of the Department of Environmental Sciences.

It continues to be a wonderful time in the department with many exciting items to report. Our newest faculty members are receiving significant grants and engaging students in their research activities; new courses are being offered; faculty, staff and students continue to collect awards; and our campus community is beginning to respond to changes initiated by President Sharon L. Gaber and Provost Andrew T. Hsu. Last year saw completion of a new strategic plan for the University, with goals and elements pertinent to our department's activity and targets on which we can focus.

We welcome our newest faculty member, Dr. Heidi Appel from the University of Missouri. Heidi is the new Honors College dean and full professor in the department. She, along with her husband, Jack, now working in the Office of Research as senior executive director of research development, are distinguished plant biologists whose research has gained international attention, most recently for how plants sense browsing insects and respond by releasing defensive chemicals. In addition, last fall Heidi was elected a fellow of the American Association for the Advancement of Science.

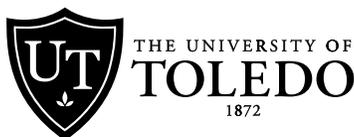
While we were sad to see Walter "Butch" Berger, longtime machinist in the department, retire this past summer, we're excited that he can turn his full-time attention to farming and his growing antique-tractor collection. Butch was with the department for more than 30 years, providing invaluable assistance to our research and teaching lab. Not only could he fix or refabricate a part "essential" to these activities, but he could construct new devices from what many would think were detailed plans, but to a machinist likely appeared as a 17th century treasure map! Butch was a coveted asset to the

department whose expertise help solved problems throughout the campus. Our new machinist and technician is Steven Murphy; read more about Steve later in the newsletter.

Many of our faculty and staff are award recipients. Drs. Jon Bossenbroek and Tom Bridgeman were promoted to full professor status. Jon is the new director of the Office of Undergraduate Research, and Tom had a paper in the Journal of Great Lakes Research recognized for being highly cited. Dr. Song Qian was tenured and promoted to associate professor. Song won the 2015-16 College Excellence Award in Research, and Dr. Mark Camp won the College Excellence award in professional service, the Eco-Educator of the Year (2017) from S.A.V.E., Lourdes University, and the Samuel F. Pees Keeper of the Flame Award from the Petroleum History Institute for his books on Ohio oil and gas. Dr. Todd Crail won the 2016 Clean Stream Partner Award from the Board of Directors of Partners for Clean Streams, Inc. and a 2017 UT Outstanding Teacher Award. Dr. James Martin-Hayden was awarded a sabbatical for fall 2016. In May 2016, our business services officer, Scott McBride, was named Outstanding Staff Member at UT. In 2016, the Stranahan Arboretum was ranked #40 by Best College Reviews, with Dr. Daryl Dwyer as its director. And, finally, Dr. James Harrell was the 2017 Alumni of the Year at CSU Fullerton, where he graduated in the first class of the Department of Geological Sciences.

Our students also are award recipients. Geology MS students Jon Luczak in 2016 and Eric Armstrong in 2017 received Ohio Rocks! License Plate grant awards to support their research. The award is from the Division of Geological Survey of the Ohio Department of Natural

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Resources, and valued at \$2,000 and \$2,500, respectively. Jessica Sherman received the best presentation award at the 2016 Midwest Graduate Research Symposium. In May 2016, Caroline Beck was the outstanding graduating senior in the department and in the College of Natural Sciences and Mathematics. Doctoral student Dileepa Jayawardena won for best student poster in the “physiological ecology section” at the 2016 annual meeting of the Ecological Society of America. New PhD student Gunnar Kramer won the 2016 American Ornithologists’ Union Council Student Presentation Award. Doctoral student Nate Marshall was awarded a Mark B. Bain Fellowship from the Hudson River Foundation. In April 2017, Matthew Snyder received a Great Lakes Fishery Commission travel award to present on new eDNA project results at the American Fishery Society meeting in Tampa, Florida. Master’s student Jessica

Susser won the best oral presentation at the 2017 Midwest Graduate Research Symposium. In fall 2017, Eva Kramer received the International Association of Great Lakes Research (IAGLR) 2017 Best Student Poster Award from the summer meeting. The award consists of a \$250 prize, as well as a one-year membership to IAGLR.

Our graduate program is recognized on campus as being particularly effective at student success, and is becoming noticed nationally. Graduate student coordinator Dr. Daryl Moorhead attended the “Future of Bioscience Graduate and Post-doctoral Training Workshop” in Denver last summer. His contribution of how graduate students are mentored in DES was well received. Recommendations from the workshop extensively highlighted Daryl’s contribution, effectively putting our department on the national stage as an exemplary model of graduate student advising.

In fall 2017, an enrollment milestone was reached. For the first time, our number of majors exceeded 200. The growth was in the areas of environmental sciences and biology (BIOM). Such growth is testament to our faculty, advisers, and students who promote our programs, especially in freshmen-level classes.

As you read our newsletter, I would encourage all graduates of our department to provide us with some feedback regarding your experiences as a student in the department. Exit and five-year surveys are available from the department homepage – we also welcome getting your updates to [utoledo.edu/nsm/envsciences](http://utoledo.edu/nsm/envsciences).

The University hosted its first annual Day of Giving in October to recognize Jesup W. Scott’s donation of 160 acres of land for what is now our Main Campus. I would like to thank our faculty and alumni for their generous gifts.

## Our New Ornithologist – Dr. Henry Streby

I joined the faculty in the fall of 2016, and the Toledo Ornithology Lab has seen rapid growth during its first 18 months.

In general, we study avian populations and communities with the goals of answering critical questions for land managers, as well as those about the ecology and evolution of bird behaviors. Before coming to UT, I was an NSF Postdoctoral Research Fellow working with the University of Minnesota, the University of Tennessee, and the University of California, Berkeley. Before that, I earned a BS and MS from Ohio University and a PhD from the University of Minnesota within the Minnesota Cooperative Fish and Wildlife Research Unit.

This year, with co-PI Dr. Jeanine Refsnider, I received a large grant from the Ohio DNR, Michigan DNR, and U.S. Fish and Wildlife Service that will fund new and expanded research on the reproductive ecology of turtles and birds in managed Oak Openings areas of



*Streby*

northwest Ohio and southeast Michigan. My lab also recently received a sub-award through a grant to the Nature Conservancy, which will fund us in conducting winter and spring surveys for

several bird species throughout the Kitty Todd Nature Preserve.

I currently have four graduate students in the lab working on a variety of projects.



**Gunnar Kramer** (PhD student) is analyzing and publishing extensively on a large migration dataset we collected during the past few years across eastern North America. Our lab developed the methods to safely-mark tiny songbirds with miniature tracking technology, and Gunnar has been revolutionizing the way these migration data are analyzed. Some early results are already published, and we will have papers in the next couple of years about migration routes, timing, wintering locations, and annual cycle conservation representing the global populations of golden-winged warblers and blue-winged warblers.

**Annie Crary** (PhD student) joined the lab in fall 2017 on a prestigious University fellowship from the UT College of Graduate Studies. Annie will work with long-term bird banding datasets from banding stations at various locations in the U.S. that have been capturing birds during migration for 25-50 years. With about 2 million data points, Annie will address questions about how climate change and land-use change may be affecting migratory bird populations during recent decades.

**Sarah Fischer** (MS student) also joined the lab during spring

semester, but she started her field work last year. Sarah is studying reproductive ecology and migration patterns in gray vireos. Most of her research takes place at Sevilleta National Wildlife Refuge near Socorro, NM, but she's also gathering migration data on birds from southeastern Utah. Sarah will use her field data to address questions about habitat associations, nest productivity, fledgling survival, and migratory connectivity in a species for which very little is known.

**Kyle Pagel** (MS student) is on the same schedule as Sarah, but is conducting his research closer to UT. You may have seen Kyle on TV or in the [Toledo] *Blade* last summer, when he received some great media coverage for his new project on red-headed woodpeckers in the Oak Openings region. Kyle is monitoring nesting behaviors, tracking adults and fledglings throughout the summer, and determining when, where and why these birds migrate and why they sometimes stay for the winter. Despite their public popularity, there are some big, unanswered questions about red-headed woodpeckers. We hope Kyle's work lays the foundation for a long-term study on the species by the Streby Lab.

## Our new Machinist/ Technician – Steven Murphy



*Murphy*

Steve comes to us from Marathon Petroleum, where he was an advanced analyst working on control systems. Previously, he had worked at Monsanto Company in a variety of engineering capacities, including systems

controls, automation, and best practices analysis. Steve has two undergraduate degrees: most recently, a BS in computer science and engineering technology from UT in 2016 and a BS in molecular biology and microbiology from the University of Central Florida in 1999. His wife, Julie Murphy, is a faculty member in the College of Pharmacy and Pharmaceutical Sciences and they have an 8-year-old daughter named Mary. Not only does Steve have the capability for machining and fabricating, but he also has expertise in the many types of equipment in our laboratories. Steve started in mid-November 2017. Welcome to the department, Steve!

## IN MEMORY



*Ruedisili*

Lon Chester Ruedisili  
Professor of Geology

Feb. 7, 1939 –  
Aug. 26, 2017

Lon Chester Ruedisili, age 78,  
died Aug. 26, 2017  
in LaCrosse, Wisc.

Lon earned a bachelor's degree  
in geology from the University of

Wisconsin-Madison in 1961 and  
returned after a stint in the military  
to complete his master's and PhD in  
geology in 1965 and 1968, respectively.  
After three years in a Texas oil patch,  
Lon took a teaching position at the  
University of Wisconsin-Parkside in  
1972.

In 1974, Lon accepted a position as  
associate professor of geology at  
The University of Toledo, where he  
continued to advance its geohydrology  
program. In 1993, he was awarded a

Fulbright scholarship to teach at the  
National Centre of Excellence at the  
University of Peshawar in Pakistan.  
Co-editing *Perspectives on Energy:  
Issues, Ideas, and Environmental  
Dilemmas* (1975) and *Perspectives on  
Water: Uses and Abuses* (1987) were  
among the highlights of his many  
publications. At UT, he was recognized  
repeatedly by his students as an  
outstanding teacher and mentor.

Lon retired to his native Wisconsin in  
1994.



## NEWS FROM FACULTY AND STAFF – PAST AND PRESENT

### Butch Berger

As noted previously in this publication, Walter “Butch” Berger, longtime machinist in the department, took advantage of an early-retirement opportunity and retired in June 2017. Butch is missed by faculty and students, along with many others scattered across the University who benefited from his many skills. On his last day, we hosted a celebration of his time at UT with cake and friends across campus. Last I heard, a UT tractor in Butch’s home shop was being repaired, demonstrating his strong association with UT. He’s got about 1,000 acres of land to farm, so we don’t expect Butch to struggle with keeping occupied!

### Dr. Mark J. Camp

*On a Handshake – Humble Beginnings to Global Impact: Ohio’s Oil & Gas Industry*, my latest book, hit the market in 2016. It’s a coffee table-style book covering the history of oil and gas exploration and production in the Buckeye state. I was approached by the Ohio Oil and Gas Association and HPN Books in San Antonio, Texas to author this book. It’s loaded with vintage photos and lesser-known details regarding Ohio’s contributions to the energy industry, from the first discoveries to the current production from eastern Ohio shales. After a nearly 10-year hiatus (unconformity), I am back at writing the final two books

in my Ohio railroad depot books series through Arcadia Publishing.

We have a new, 12-passenger van after our first major accident on a field trip led to a totaled 12-passenger van during my 2016 Colorado-Utah trip. It happened in northern Arizona, when another vehicle was headed directly toward us on the wrong side of a two-lane highway. My driver swerved to avoid a head-on collision, but could not maintain control, and we ended up upside-down in a roadside ditch. Although the van suffered major injuries, none of us were hurt beyond some scrapes and bruises. As a precaution, three students were checked out at hospitals. After relaxing for a bit, we decided as a group to continue the trip and eventually made it to Mesa Verde National Park to “chill out.” Although cramped, we were able to rent a smaller van the next day to continue our trip. Regrettably, we missed a visit to Natural Bridges National Monument in Utah.



Whittington

### Dr. Michael Weintraub

We started a new, NSF-funded project studying the below-ground controls on the position of the Arctic treeline in September, and my lab had two graduate students rotating through the Arctic throughout summer 2017. The photo above shows my student, Ruth Whittington, collecting a soil core behind a snow fence (used to increase snow depth, which warms the soil in the winter) in the Arctic. Also, I am president-elect of the Soil Ecology Society, and will take the reins in 2018.

## CONTRIBUTIONS AND ACTIVITIES OF OUR LABORATORIES AND CENTERS

### Dr. Tim Fisher and the GLASS Lab

Research activity in the glacial lake and sediment science (GLASS) lab continues to be steady. Mitch Dziekan defended his thesis earlier this fall, after beginning his career at Barr Engineering Co. in Ann Arbor, Mich. He began work on a Flint River project based on his expertise with sediments, and was quickly included

in a project on Lake Michigan when his bosses found out he had experience vibracoring. Mitch’s thesis, “Origins of Basal Lake Sediment in Kettle Lakes: Northern Indiana and Southern Michigan,” explored the time lag between deglaciation and first appearance of terrestrial macrofossils in lakes on and adjacent to the Sturgis and Shipshewana moraines. One of his committee

members was Dr. Henry Loope (MS 2006), who is a research scientist at the Indiana Geological Survey. Henry is busy investigating numerous sites across Indiana and generating chronology to constrain timing of the last glacial maximum and recession of various lobes in Indiana. New student Jon Luczak from the University of Wisconsin-Eau Claire is partially through his EDMAP-



funded MS, investigating the chronology and geomorphology of the Imlay Channel. This spillway cuts across the “thumb” of Michigan and was an outlet for glacial Lake Maumee. Brian Samsen, a current geology major, has been assisting Jon on this project as Brian works on a related, undergrad research project funded through UT’s Office of Research.

Tom Valachovics is a new student from Grand Valley State University in Allendale, Mich., and he already has his first cores from the Pigeon River meltwater channel in northeast Indiana, where he will be working with the Indiana Geological Survey to develop more chronology in the geologically complex stratigraphy and geomorphology associated with the Saginaw-Huron interlobate zone. Alex Sodeman from Indiana University-Bloomington started in spring 2018 and will be co-advised by Dr. Ricky Becker. Beyond my administrative duties, I continue as associate editor of the *Canadian Journal of Earth Sciences* and managed to publish a few papers that address chronology of the eastern outlets of Lake Agassiz, a book chapter on the northwest outlet of Lake Agassiz, and a short technique paper for splitting vibracores. Updates from the lab include Amber Boudreau and her husband, Armand, who now have 2-year-

old Marshall to keep 6-year-old Gladys company. Amber continues to work part-time for the Wisconsin Geological and Natural History Survey.

In other lab news, Barb Hanes (MS 2010) now works for the Pennsylvania Environmental Protection Agency, Melinda Higley (nee Campbell, MS 2009) is finishing her PhD at the University of Illinois-Champaign-Urbana. I am in my eighth year as chair and second year as interim director of UT’s Lake Erie Center. I hope to hear from other GLASS graduates!

## Lake Erie Center

Dr. Carol Stepien stepped down from directing the LEC in the summer of 2016, and is currently on leave. She lives in Seattle, working as the ocean environment research division leader in the National Oceanic and Atmospheric Administration’s Pacific Marine Environmental Research Laboratory. The interim director is Dr. Timothy Fisher.

The Lake Erie Center was once again very productive in meeting its mission goals. A substantial amount of research took place, and the REU program was successful and well received by students. Rachel Lohner was active with pre-college students through visits to schools

and science camps at the LEC. Again, this year the “big news” in the Mayer lab focused on the continued discovery of invasive grass carp eggs (>7,000) in the Sandusky River and the implications such species could have in the Great Lakes. Once again, Lake Erie experienced significant algae blooms, which put Dr. Tom Bridgeman and his lab in the media spotlight. The Dwyer lab continues to monitor the beach at Maumee Bay State Park, analyzing its modeling approach to improving beach closing decisions and investigating ways to reduce nutrient loading in the Maumee River and western basin. Our search for a new director did not result in a hire. The communications position was abolished, and a new position in a different direction will be announced this year.

LEC faculty were featured in the media 28 times last year! Christian Moldaenke from BBE Moldaenke Company in Kiel, Germany, the manufacturer of numerous water-quality instruments used globally, was a visitor to the Bridgeman lab. They have been working on new instrumentation and techniques to identify microcystin in water samples. Also, Dr. Doug Kane from Defiance College was a visiting researcher, working with Dr. Bridgeman and sampling water for HABs in the Maumee River.

## IN MEMORY

**Paul D. Epstein** (1939-2017) MS in geology 1998  
Paul was a Toledo Public Schools instructor for 26 years, teaching mostly science classes at McTigue Junior High School. His travels in the U.S. and abroad also allowed him to pursue his interest in geology and expand his rock and mineral collection. From *The Blade*.

**James M. Meinhart** (1946-2018) MS in geology 2006  
Jim completed a comprehensive survey of building stones used in many Toledo buildings in 2006 under the direction of Dr. Camp.



## NEWS FROM OUR STUDENTS – PAST AND PRESENT

For further information on our alumni of the month, please visit [utoledo.edu/nsm/envsciences/alumnispotlight.html](http://utoledo.edu/nsm/envsciences/alumnispotlight.html).

**Joel F. Banaszak, MS** in geology 2011, Alumnus of the Month in September 2017

Joel is a professional geologist III for Amec Foster Wheeler, where he specializes in the characterization and remediation of groundwater and soil impacted by industrial manufacturing processes. His career has taken him across the U.S. to oversee environmental drilling activities. He also recently traveled to Poland in support of a potable water well supply project.

*“If I had to give one piece of advice to a current student, it would be to train yourself to be solution-oriented and curious about the world in front of you.”*

**Caroline Beck, BS** in ecology and organismal biology 2016, Alumnus of the Month in March 2017

Carly recently accepted a research technician position at Sateletics, a corporation that is part of UT’s LaunchPad incubator. Carly looks forward to this challenging opportunity and possibly using it as a springboard to a graduate program.

“Throughout much of my undergraduate time, I stressed myself out to find out exactly what I wanted to do after graduation or with my life in general. If you ever get these feelings, trust me, you are not alone, and many other college-aged people are feeling the same way!

*“My advice would be to simply take advantage of all the opportunities available – apply for internships and research jobs; really get to know your professors; volunteer; go on the department field trips; join organizations; and*

*network even if you don’t like to. Work hard, keep an open mind, and you never know what opportunities may arise!”*

**Julius Blanco, BS** in geology 1981; MS in geology 1985; Alumnus of the Month in May 2017

After an early career with a number of drilling and environmental firms, Julius took a position with Marathon Petroleum in the area of spill prevention, control and countermeasures. He is coordinator for facility response planning. As the underground storage-tank compliance coordinator, Julius mixes his geology background with his environmental values.

*“Attending The University of Toledo gave me the skills and knowledge to pursue such a long and successful career.*

“I look back on my time at UT with a lot of fond memories. What I treasure most of all was the knowledge and friendships gained.”

**Joshua Brown, PhD** in biology 2009, Alumnus of the Month in October 2017

Joshua continues his involvement in the National Sea Grant College program and now oversees its \$36 million annual research portfolio. He is frequently involved in NOAA’s response to natural disasters.

*“The knowledge and skills I acquired from the UT Department of Environmental Sciences allow me to explore and pursue a nontraditional path in the sciences, designing research and engagement programs for NOAA’s National*

*Sea Grant College that have helped communities around the country respond to crisis, plan for the future and be resilient in the face of change.”*

**Mik Chester, MS** in geology 1979

Mik was Dr. Camp’s first graduate student, who was inherited when his original adviser, Dr. Lloyd Charlesworth, left the Department of Geology. He worked for Texaco, Inc. in Midland, Texas, upon graduation, as well as a number of independents before he began consulting. Mik emailed Dr. Camp and visited with Dr. James Harrell, professor emeritus, during a visit to Toledo in 2015. Mik left the oil business in 1992 and is now a pastor in St. Joseph, Missouri.

*“I left Toledo very well prepared for a career in the oil business and with confidence that I could work through a research project from start to finish. My time at The University of Toledo was a maturing time for me and prepared me, not just for the oil industry, but also for life in general. I have the fondest memories of my time there, of classes with Stu Dean, Michael Phillips, ‘Wild’ Bill Kneller and, of course, yourself.”*

**Housen Chu, PhD** in biology (ecology track) 2014, Alumnus of the Month in January 2016

Immediately after graduation, Housen accepted a post-doc on the FLUXNET Project at UC-Berkeley, where he analyzes long-term and comprehensive data/sets on carbon, water and energy



exchange between vegetation and the atmosphere. He appreciates that UT's faculty supports an interdisciplinary approach to applied science. This helped him succeed in his career:

*“I feel the most valuable experience is working on my own research while contributing to other projects.”*

“That is how I learned to start and design a study, conduct research, solve problems and, most importantly, finalize the work and produce publications and presentations. Both the skills I learned and the perspectives I gained through these projects helped me find my current job. It's important to find balance between these two aspects. Developing one's own skills/experience is crucial. At the same time, keeping a wider perspective via other projects, volunteering and outreach prepares you for a promising career in the environmental field.”

### **Timothy Connors, BS**

in geology 1991; MS in geology 1996; Alumnus of the Month in April 2016

Since earning his geology degrees from UT, Tim has been fortunate, working as a geologist with the National Park Service Geologic Resources Division in Lakewood, Colorado. He has spent the last 18 years creating GIS-based geologic maps for National Park Service areas in the lower 48 states, Hawaii, Alaska and the Virgin Islands. He also enjoys teaching college-level geology in the Denver area. Tim resides in Littleton, Colo., with his wife, Suzie, and four children (Aubre, Carly, Blake and Conner), who are subjected to looking at rocks all over the western states.

He loves to tell people, “Where you go for vacation, I go for work. It's a tough job, but somebody has to do it.” And he adds,

*“If anyone at UT is in the Denver area, look me up. I'm happy to give tours of the local geology to anyone interested!”*

### **Luke Cousino, BS**

in geology 2014, Alumnus of the Month in November 2016

Luke works for the Michigan Department of Environmental Quality in the Water Resources Division. Following his career goals, he enjoys working as an environmental quality analyst in the Groundwater Discharge Program. His job is to oversee permit compliance for groundwater discharges in Wayne, Macomb, Oakland, and St. Clair counties. Luke conducts site inspections, reviews sampling data, writes technical reports and responds to pollution complaints. He thanks Dr. Becker and the Department of Environmental Sciences staff for making his education possible.

*“The quality of your education is up to you.”*

“Take advantage of the many incredible resources in this department. Dr. Becker and Dr. Camp both run amazing field trips to some of the best geological areas in the country. You'll be reminded why you study these topics, and you may even have a little fun along the way.”

### **Thomas Darmon, MS**

in geology, 2015 Alumnus of the Month in April 2017

Thomas Darmon lives in Stow, Ohio, and accepted a position at Arcadis U.S. Inc., a global design, engineering and management consulting company. His employment at Arcadis has enabled him to learn state regulatory policies and how best to apply his education in the workplace. Looking forward to the future, he plans to use his degree and experience to pursue a career in higher management that will require the technical skills he has honed on the job and at The University of Toledo.

*“Advancement and success is all about communication and collaboration with others.”*

### **Kaylie DeYarman, BS**

in biology 2015, Alumnus of the Month in August 2017

After graduation, Kaylie accepted an intern position in a western Lake Erie limnological laboratory. In 2016, she left her internship for a position as water quality monitor and volunteer coordinator at the Black Swamp Conservancy. Later in 2016, Kaylie began a Master of Science degree program in development practice at Trinity College Dublin/University College Dublin in Ireland. She decided to use her degree from The University of Toledo to work for international sustainable development, with a focus on climate change, environmental sustainability and access to clean water for impoverished communities. Kaylie targeted this graduate program because it allows her to combine her interest in environmental conservation and humanitarian efforts.

*“I was fortunate enough to go out sampling on one of The University of Toledo's research boats to work with research equipment and aid in data collection. That was truly a great experience. As an undergraduate student, please take advantage of such opportunities. There are lots of them at UT and you will never regret it.”*

### **James Fisher, MS**

in geology 2009, Alumnus of the Month in September 2016

James worked as a hydrogeologist for four years at Flynn Environmental, Inc. (Canton, Ohio), insuring proper water sanitation practices, and aided in the development of risk assessment models for groundwater extraction and treatment. He later became a project manager at Vadose Environmental Consultants in Akron, Ohio, where he supervises and implements environmental site assessments, risk-based closure plans,



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groundwater monitoring and soil testing. Working with both UT faculty and undergraduate students built a strong knowledge base, but also prepared James for the kind of self-directed learning and skill in the application of knowledge that is necessary for working in the field.

***“Learn to be self-sufficient at school.”***

“One of the main characteristics I look for in new employees as a project manager is the ability to be self-sufficient in the office and in the field. In environmental work, there isn’t always going to be someone to answer your questions. Sometimes you are going to have to make important decisions without consultation.”

**Jeff Grabarkiewicz, MS**

in biology (ecology) 2012, Alumnus of the Month in December 2017

After graduation, Jeff took a position as permit coordinator in the Michigan Department of Transportation (MDOT), where he was involved in the \$100 million reconstruction of I-75. He continues his work with MDOT as a wildlife ecologist, where he collaborates with organizations such as the U.S. Fish and Wildlife Service to conserve federally and state-listed wildlife. Jeff also is president and ecologist for Ecological Survey and Design, LLC. This independent consulting firm conducts GIS analyses, freshwater mussel surveys, relocations, and research. In addition, Jeff often makes time to teach grade-school children about native fishes in the Chelsea, Mich. area.

***“The education and training I received in the Department of Environmental Sciences has proven valuable to professional life.”***

“I owe a lot to my adviser, Dr. Hans Gottgens, who placed my success high on his priority list. I also want to thank Dr. Crail for handing me a dipnet in Langenderfer Ditch about 12 years ago. That moment changed my life.”

**Kari Gerwin, BA**

in environmental studies 2003; MA in environmental geography 2006; Alumnus of the Month in November 2017

After graduating, Kari worked for the Center for Environmental Management of Military Lands in El Paso, Texas, as a GIS analyst. She was involved in program management, land analysis and rehabilitation projects related to military installations. Kari returned to UT as an adjunct instructor in the Department of Geography and Planning before starting her current job as a water quality planner for the Toledo Metropolitan Area Council of Governments (TMACOG). Kari now coordinates with local governments and communities through the Stormwater Coalition, the Watersheds Committee, and the Portage River Basin Council. She also works with local stakeholders to plan and design green stormwater infrastructure in the area.

***“The relationships I built with researchers and staff at The University of Toledo and the Lake Erie Center have greatly benefited my work as a water quality professional.”***

“My professors and mentors as an undergraduate and graduate student are now partners in improving water resources in northwest Ohio!”

**Ken Gibbons, MS**

in biology (ecology) 2016, Alumnus of the Month in January 2017

A successful academic career allowed Ken to become a Great Lakes Commission fellow. He is working on a HAB collaboration, which enables science-based information sharing among scientists. This program also encourages communication between scientists and officials working on HABs. Ken also is working on Erie Stat, an information platform to track progress toward meeting the shared, binational goal of a 40 percent reduction in phosphorus in the western Lake Erie Basin. He hopes to continue his career of helping to improve water quality in the Great Lakes.

***“My advice to students in the DES is to be consistent with your work and not to be discouraged by failures. Success will come at different times for different people. Each day, do your best to move your work forward.”***

**Debra Hanneman, PhD,**

BS in geology 1975

“I graduated in ’75. So the profs there were Hatfield, Kneller (of course), Spanski and Wilband,” she said. “Sure... it’s a standing offer, so whenever you get out this way, I’d be glad to show your/students around. I do much field work in continental Tertiary strata in MT, ID and then extend a bit to the Badlands. I also have a GSA session scheduled for the Denver meeting on Tertiary continental, recent advances in stratigraphy, age analyses, etc., so if you get to Denver, stop by.”

Excerpted from an email to Dr. Camp. Deb lives in Whitetail, Mont.

**Melinda Higley (Campbell), MS**

in geology 2009, Alumnus of the Month in December 2015

Melinda became a wetlands geologist at the Illinois State Geological Survey. In this position, she was asked to monitor rehabilitated wetland regions to test how well they compared with healthy wetlands. She described the position as hard work, but very rewarding. She claims it was especially rewarding when the areas were not properly restored, rehabilitated or protected because it became up to her to find out what these wetlands were lacking. After working in the field for five years, Melinda is working toward her doctorate in geology at UIUC.

***“My advice to students is to take on challenges, be humble, and always accomplish one more thing in a day than you think you are capable of.”***



“If you have any inkling that you might pursue anything science-related, take a statistics class!”

### **Jennifer Horton, MS**

in geology 2015, Alumnus of the Month in October 2016

It was her experiences at The University of Toledo that enabled Jennifer to work for the Minnesota Geological Survey as a Quaternary geologist. The bulk of her job is creating surficial and subsurface maps of Quaternary deposits in Minnesota. Much like her master’s thesis, it requires field, laboratory and GIS work to complete. These maps are used by municipalities to assess and protect their groundwater resources. Jennifer enjoys her work, citing flexibility and working outdoors as her favorite aspects.

*“My biggest piece of advice for current graduate students is to maintain a work-life balance, go on the department field trips (especially Dr. Becker’s spring break trips!), and do something new, no matter how small, for your thesis every day.”*

### **Jacqueline Kane**

Jackie and her students from St. Ursula Academy were chosen as one of the first-place winners in the Lexus Eco Challenge Final Challenge in April 2017. Their work involved constructed wetlands as a viable solution to reducing phosphorus, sediment and bacteria in our global waterways. The award was \$15,000.

*“I especially want to say thank you to Ryan Jackwood and Dr. Dwyer for their guidance, but also for all those who taught us so much and shared their expertise and encouragement.”*

### **Abby Norton Krane, BS**

in geology 2005, MS in geology 2008

Abby’s skills and field work experience at UT resulted in her enrollment in a PhD program for geological sciences at Michigan State University, from where she graduated in 2011. Abby lives in Middleburg Heights, Ohio, with her husband, Jerry, and two children, Hannah and Alex. She is an adjunct earth science professor at Cuyahoga Community College, but spends most of her working hours at Pins and Needles, a shop devoted to threadwork, where she uses her education skills to teach adults how to use computerized sewing equipment. Abby attributes much of her success to the guidance and support she received from the Department of Environmental Sciences faculty.

“Make yourself visible to the professors with seminars, department events and clubs,” she said.

*“When you find a professor you really like and work well with, go to them to volunteer in their lab or help them prep for classes. It takes time that is most often unpaid, but most of the practical learning comes from outside the classroom. It may open up opportunities later on for summer or year-round positions.”*

### **David J. Ludwikoski, BS**

in geology 1985, MS in geology 1993

Dave, associate professor of science and director of the Benjamin Banneker Planetarium at the Community College of Baltimore County (Maryland), helped with the National Association of Geoscience Teachers’ Eastern Section 2017 Conference in January. He resides in Catonsville, Md.

### **Chris Maike, MS**

in geology 2014, Alumnus of the Month in February 2017

After graduation, Chris secured a geologist position with the North Dakota Geological Survey. His work focuses on geologic and LiDAR mapping, as well as reviewing environmental reports. Reflecting back, he feels his experience with his adviser and the education he received at The University of Toledo superbly prepared him for his current position.

*“I had a great experience at The University of Toledo.”*

“I was given so many opportunities, including a variety of fascinating courses and field trips around the country. I owe a great amount to Dr. Krantz, as he was a top-notch adviser. He always gave me words of encouragement and constructive feedback, to which I am forever grateful.”

### **Kumar Mainali, MS**

in biology 2007, Alumnus of the Month in May 2016

After earning his master’s degree, Kumar went to the University of Texas at Austin to join its doctoral program in ecology, evolution and behavior, where he concurrently completed a PhD in ecology and an MS in statistics. Kumar worked on species distribution modeling, climate change impacts in the treelines of the Himalayas, spatial conservation prioritization and spatial analysis of human microbiomes. He noted that working with Dr. Heckathorn helped his scientific writing tremendously. He describes his time at UT as one of most memorable years of his life and recalls the hot summer days of field work as the best learning experience.

*“The best thing about my research in DES was that I performed both lab and field experiments.”*

“This involved thinking about many aspects of research design and was a great learning experience. To be successful,



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a graduate student must have a strong foundation in ecology and a good grasp of statistics. My time at UT prepared me with both.”

**Priyanka More, BS**

in geology 2016, Alumnus of the Month in December 2016

Priyanka’s research experience with Dr. Martin Hayden inspired her to pursue graduate work in the field of hydrology; she is now enrolled in the master’s program at Bowling Green State University. She continues to work on groundwater interactions for her thesis, and hopes to become a hydrogeologist.

*“My research started with a question I had while being in the hydrogeology class. I believe no question is stupid; always inquire!”*

“Who knows; maybe that question is the start of an amazing research project. It was a wonderful journey at The University of Toledo. I will always miss this place and the people I met. Once a Rocket, always a Rocket!”

**James Moriarty, BS**

in environmental sciences 2014, Alumnus of the Month in March 2016

Jim is working at the Toledo-Lucas County Health Department as a water quality sanitarian. His responsibilities include monitoring waterways throughout the county, testing water for bacteria and other indicators of pollution, and inspecting both private and public properties to ensure no nuisances are created that might harm water quality. During summer 2014, Jim also worked as a laboratory technician at the Toledo Area Sanitary District, where he collected samples as part of the mosquito monitoring program and delivered mosquitofish to county residents for backyard mosquito control.

*“I learned in the DES that faculty members are very willing to help students pursue their goals. All it takes is a little initiative on the students’ part!”*

“If you find a professor who does research in an area that interests you, just talk to them about it and, before you know it, you have your own research project. Overall, I would have to say that my experiences in DES and UT were some of the greatest I’ve had; I would do it all again in a heartbeat.”

**Oluyinka Oyewumi, PhD, MS**

in geology 2008

Yinka is associate professor of hydrogeology at Central Connecticut State University in New Britain, Conn. It was great meeting with him during the 2017 New England geology field trip.

**Kevin M. Palombo, MS**

in geology 1983

Kevin was site coordinator at the Ohio EPA’s Twinsburg office. His son and daughter live in Minnesota.

Excerpted from an email to Dr. Harrell in April 2014.

**Hannah Phares, BS**

in environmental science 2016, Alumnus of the Month in September 2016

Hannah is a wildlife biologist at the Institute of Wildlife Studies, a worldwide organization dedicated to conserving wildlife, habitats and biodiversity. She works on Rota Island in the Commonwealth of Northern Mariana Islands near Guam and, along with three colleagues, strives to protect the endangered Mariana crow. Work includes reducing the non-native predator population threatening the Mariana crow. The reduction in predators, she said, will lead to higher survival rates of crow fledglings.

**Bryce Schide, BS**

in environmental science 2013, Alumnus of the Month in July 2017

Immediately after graduation, Bryce began an internship at Clay High School (Oregon, Ohio), where he analyzed the environmental impact of two wind turbine sites on migrating birds and local bats and developed an internship program with school officials. During this time, Bryce also was an exhibit presenter and the coordinator of STEM programs at the Boonshoft Museum of Discovery in Dayton, Ohio. In 2016, he began work at the Aullwood Audubon Center and Farm as an environmental education specialist. He currently is employed at Pace Analytical as an analyst in an environmental services lab.

*“My education from UT allowed me to develop excellent skills in presentation, educational program development and laboratory management.”*

**Nate Tessler, MS**

in ecology 2012, Alumnus of the Month in July 2016

After graduating, Nate was an aquatic biologist at an environmental consulting firm in northeastern Ohio for two years. There, he conducted fishery surveys, collected aquatic habitat and water chemistry data, delineated wetlands, assisted commercial dive operations, performed mussel surveys and analyzed data using GIS. He now is an environmental coordinator at the Ohio Department of Transportation. His main responsibilities include making sure transportation projects in west-central Ohio comply with environmental laws and policies. He also prepares and evaluates studies on topics such as hazardous waste, endangered species, wetlands, water quality, air quality, cultural resources, biological surveys, and site assessment.

“DES strongly promotes collaboration between students and faculty. As a result, students expand their professional networks and gain experiences to strengthen their resumes,” he said.



*“After you graduate, your network and experiences gained in DES will help you stand out among other job applicants.”*

**Kyle Tharp, BEd** in biology/earth sciences 1992; MS in geology 1996; Alumnus of the Month in June 2016

Kyle works at the Ohio Department of Natural Resources’ Division of Oil and Gas Resources Management. He is responsible for investigating groundwater complaints, as well as collecting soil, water and gas samples for analysis in the laboratory. When he is not conducting investigations, he assists oil and gas well inspectors, who monitor the drilling of new wells and the plugging of unproductive wells. Aside from the scientific knowledge, he says, “developing the ability to write and conduct research are two of the most valuable skills I learned in the department.”

“My favorite experiences at UT were the field excursions, which included a circle tour of Lake Superior, southern Indiana for invertebrate paleontology, West Virginia for structural geology, and the Black Hills for graduate field camp,” he added.

*“Getting in the field and seeing geology at every opportunity is the best way to learn it!”*

Kyle’s advice to current students is to “embrace the hands-on approach to your education. Assist other students with their field work, whether it’s for a senior thesis or graduate thesis. Take your education beyond the classroom! Go to the field at every opportunity! And pursue internships at ODNR! You may just find a career path you never expected.”

**Alexa Vogel, BS**

in environmental science (biology) 2016  
Alumnus of the Month in June 2017

After graduation, Alexa became a research and monitoring intern for the

Metroparks Toledo. There, she oversaw endemic species research within the Oak Openings region by coordinating with Metropark volunteers for rare plant, bat, and butterfly monitoring. In addition, she designed a schedule for monitoring rare plants based on 20+ years of data and created multi-layered maps using ArcPad to identify locations of invasive, uncommon and state-listed plants in this unique and diverse ecosystem. Currently, Alexa is a field technician at Niswander Environmental in Brighton, Mich., strategizing on environmental solutions for municipalities, nonprofit organizations, and transportation agencies.

*“The education I received from The University of Toledo gave me a competitive edge in the job market. The skills and knowledge I learned prepared me for lots of career options.”*

## A Revitalized Courtyard

Ever since the completion of the Wolfe Hall complex some 20 years ago, the courtyard enclosed by Bowman-Oddy and Wolfe Hall has looked like a weedy wasteland. A group of seniors in the environmental capstone course decided in 2016 that it was time to turn this wasted space into a functional outdoor classroom and meeting space. Did they ever!

Bianca Caniglia, Sam Danko, Lisa Drennen, Thomas Paul, Melissa Russell and Hannah Szuch worked with faculty advisers Drs. Todd Crail and Hans Gottgens, as well as the UT Grounds Department on a project to transform this wasted space into a courtyard with sun, rain, shade gardens, a rock exhibit and even picnic benches and signage. Dr. Tim Fisher served as the team’s “client,” and Dr. Mark Camp provided geological expertise. The team received its own grant from the UT Student Green Fund and spent every penny turning this space into a wonderful outdoor classroom and meeting area.

The gardens are planted with native species. The flowers have already attracted insect pollinators and even hummingbirds! The rain garden is clearly trapping silt and nutrients that would otherwise drain untreated into the Ottawa River on campus. Undergraduate teaching labs, conducted in classrooms that



surround and look onto the new courtyard, now have easy access to secure space for outdoor learning activities. On nice days, the picnic tables are used by students and, occasionally, departmental social events take place in an area that resembled campus blight not long ago. The next time you visit your alma mater, take a look at the new gardens and bring a brown-bag lunch.

## FIELD TRIPS

### Death Valley Geology Field Trip March 2016

In spring 2016, a group of eight students, along with Dr. Ricky Becker and Dr. David Krantz, headed to the Mojave Desert and Death Valley for a week-long exploration of the area's geology. The class met weekly eight weeks before to learn about the regional geology, discuss specific areas of interest, and review camping logistics.

Arriving in Las Vegas in early March, we gathered remaining supplies and headed into the Mojave Desert. On the first night, we camped at the base of Kelso Dunes, a roughly 650-foot high, 45-square-mile dune complex.

The time in the Mojave preserve was spent hiking through volcanic tuff at Hole-in-the-Wall, exploring inside a lava tube near the Cima cinder cones, and viewing salt flats at Soda Lake.

We proceeded to Death Valley, where the students were able to investigate part of the basin and range. From our initial base at the national park campgrounds, one of the areas visited was Artist Palette – an area of hydrothermally altered sediment and ash deposit that produced spectacularly colored deposits. The group was fortunate to be in Death Valley during a wet spring, and was treated to the desert in bloom, as well. We saw evaporative processes at work at Devil's Golf Course, drove to the top of an extensive Pleistocene alluvial fan, and hiked below sea level at the Badwater salt flat.

We were able to visit an old gold mining site at Rhyolite before returning through a cross-section of geologic units heading



*Hiking across a graben in Death Valley National Park*

down Gower Gulch. After switching our campsite to Panamint Springs, we headed past Ubehebe Crater and up to Racetrack Playa to see the sailing stones (and changed a damaged tire). We finished the

trip with a hike up the polished breccia at Mosaic Canyon, and another hike through the Mesquite Flats sand dunes before heading back to Las Vegas.

## A Cavalcade of Parks Geology Field Trip August 2016

This was a special field trip celebrating the 100-year history of the National Park Service. What better place to view the geology of our national parks than the Colorado Plateau, the highest concentration of NPS properties in the “lower 48.”

Two weeks before fall classes began, 17 students – Laura Barr, Gabrielle Boyce, Sarah Carter, Savannah Conklin, Jessica Duez, Jamie Forbush, Elizabeth Golnick, Samia Harb, Sarah Jozwiak, Kayla Kinzel, Jared Lesniewicz, Matthew McCormick, Alice Miller, Sarah Miller, Brian Samsen, Jessica Swedik and Angela Williams — led by Dr. Mark Camp, headed west. Another student, high school teacher Valerie Cummings, joined the group at Rocky Mountain National Park. The intent of the trip was to expose the students to the various offerings of the National Park Service at parks, monuments and historic sites such as ranger-led field trips, nightly ranger talks, research activities, campgrounds, transportation of visitors, and educational displays in visitor centers.

And then there is the magnificent scenery laying out the geologic story of the Colorado Plateau and Rocky Mountains. We visited the following: Cedar Breaks, Colorado, Dinosaur, Florissant Fossil Beds, Grand Staircase-Escalante, Homestead, and Pipe Spring National Monuments; Arches, Black Canyon of the Gunnison, Bryce, Canyonlands, Capitol Reef, Grand Canyon, Mesa Verde, Rocky Mountain and Zion national parks; Great Sand Dunes National Park and Preserve; Curecanti and Glen Canyon national recreation areas; and Tall Grass Prairie National Preserve.



*Along Trail Ridge Road in Rocky Mountain National Park, the group listens to a National Park Service naturalist.*



*Exploring Capitol Reef National Park*

*continued from page 13*

## Big Bend-Carlsbad Caverns Trip – March 2017

In the spring of 2017, we went to the Big Bend area of Trans-Pecos, Texas, through the Delaware Basin and up to the exposed Permian reef complex in the Guadalupe Mountains, and then into Carlsbad Caverns. The group of Dr. Becker, six students and Dr. Krantz met at the Midland, Texas airport in early March and headed out to Big Bend.

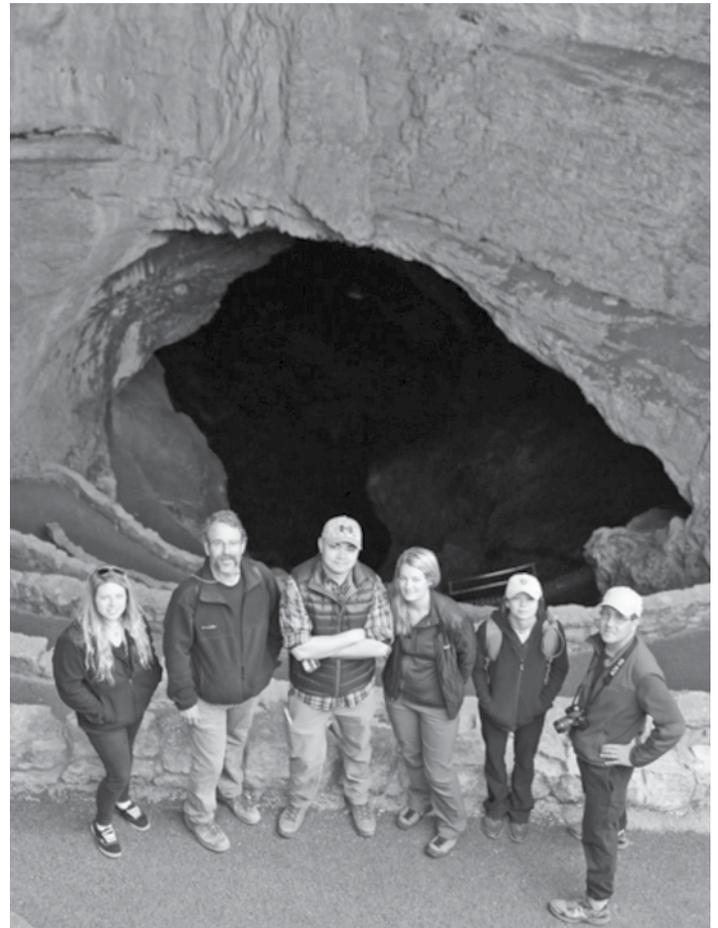
Driving through fields of oil pump jacks and drill rigs near Midland, we traveled across Permian Basin formations to the entrance of Big Bend National Park at Persimmon Gap, where we saw firsthand the uplifted rocks of the Ouachita-Marathon orogeny. After setting up camp next to the Rio Grande River, we visited sections of the Cretaceous formations, where students observed an outcrop at the contact of a tertiary dike through the limestone formation, as well as the resulting contact metamorphism. Further along, we examined a variety of marine, dinosaur and reptile fossils on display. After further investigating the Upper Cretaceous formations along the Rio Grande and dipping our feet in the river, we headed to the Chisos Mountains and hiked through a section of igneous volcanics down to the windows, then returned to camp at an isolated site at the base of the Pine Creek caldera.

We spent the next day visiting mesas and canyons incised into the volcanic tuff before proceeding down to the Rio Grande, and then to the state park. Driving through the gravel roads of the park, we spent more time examining a large number of overlapping ash falls and flows that make up the park (and we could have easily spent two more days there, as we didn't get back into the largest caldera in the area). After leaving Big Bend, we drove to Guadalupe Mountains N.P., where we hiked an 8-mile route through the entire reef complex section of the Permian Reef Trail. On this trail, we were able to see the facies change as we headed through the exposed reef complex, giving everyone a firsthand outcrop scale



*On the Permian Reef Trail in Guadalupe Mountains National Park*

introduction to sequence stratigraphy. We completed the week-long field experience with a day in Carlsbad Caverns, where we hiked through the same formation we had on the Permian Reef Trail, but this time through the massive dissolution cave system (and instead of hiking back up again, we could rely on an elevator). Here we were able to see the great variety of flowstone present in the caves, while occasionally observing the underlying reef structure.



*The group at Carlsbad Caverns National Park*



## Bahamas Coral Reef Ecology Field Trip – May 2017

In May 2017, eight students – Matthew Bender, Sarah Carter, Bianca Caniglia, Katie Condon, Jessica Duez, Brittany Layden, Jordan Penkava, and Wendy Stevens – joined professors Tom Bridgeman and John Turner (UT Health Science Campus) for a week-long ecology field study course on Great Abaco Island in the Bahamas. Rick Francis, director of research advancement and information systems, accompanied the group to record activities.

Students prepared for the course during the spring semester with meetings, readings and lectures, as well as snorkeling lessons.

After a long day of traveling from Detroit, to Atlanta, to Marsh Harbor, the students settled into rented cottages on a remote beach. The first day was spent perfecting snorkeling skills and identifying dozens of fish species on a reef near a heavily populated area. On the second day, students snorkeled at a remote reef, learned how to perform fish surveys and compared the relatively pristine reef to the human activity-influenced reef from the previous day. On subsequent days, the group chartered a fishing boat and visited several reefs along 20 miles of the island coast, visited a research station and conducted repeated reef



*On the beach in the Bahamas*

surveys. At the end of each day, students gathered to catalog the organisms and habitats they'd seen and discuss factors that affected the distribution of organisms, such as water depth, wave action, nutrients and distance from land, and human fishing

pressure. In all, students identified more than 100 species of fish, coral, other invertebrate animals, and plants with favorites including sea turtles, sharks, parrot fish and spotted eagle rays.

## New England Geology Field Trip – August 2017

Dr. Mark Camp, with the help of graduate students J.P. Finnegan and Jonathan Luczak, led a group of 19 undergraduate students on a geology field trip with stops in Connecticut, Maine, Massachusetts, New Hampshire, New Jersey, New York, Pennsylvania, and Vermont in August 2017.

Each student – Alexandria Berger, Hannah Blice, Sean Breitner, Brandon Brown, Paul Carson, Kailey Doherty, Jessica Duez, Samia Harb, Kayla Kinzel, Jared Lesniewicz, Matthew McCormick, Sarah Miller, Gabriella Nusbaum,



*Rock of Ages granite quarry in Graniteville, Vt.*

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The summit of Bear Mountain exposes Precambrian Storm King granite-gneiss. Below lies the Hudson River fiord.

Nancy Ponce, Shelby Spencer, Jessica Swedik, and Ann Welsh – was responsible for leading the discussion at one of the stops. The trip provided opportunities to compare and contrast the geology and biota of five eastern upland systems – the Adirondacks, northern Appalachians, Catskills, and the Green, Maine, Taconic, and White mountains. A personal highlight of the trip included a reunion with UT grad Dr. Oluyinka (Yinka) Oyewumi at Dinosaur State Park in Rocky Hill, Conn. It brought back pleasant memories for both of us. An extended surface and underground tour of the Sterling Hill (New Jersey) zinc mine and nearby collecting opportunities at a mine dump associated with the Franklin Mineral Museum were enjoyed by all.

*“There were several highlights from our trip to the New England area, including stops at Acadia National Park, Rocky Neck State Park, and Cape Cod National Seashore. I enjoyed all of these stops because I loved seeing the Atlantic Ocean coast. Exploring Acadia NP also was a highlight of the trip for me. All of the collecting opportunities for garnet, marble, granite, slate, hematite, magnetite and many other minerals and rocks were very hands-on and fun! The mine tour at Sterling Hill Mineral Museum was very informative and interesting: ‘Thank you, Mr. Miner.’ The weather could have been more cooperative, but all-in-all, it was an amazing trip!”*

– Jessica Duez



## SELECTED GRANTS

DESCRIPTION	SPONSOR	FACULTY	TOTAL AWARD
Biomonitoring of Nutritional and Environmental Stress in Plants	USDA	Heckathorn	\$68,860
Effects of Harmful Algal Blooms on Wildlife Health	NOAA	Refsnider	\$10,000
How Quickly can Target Phosphorus Reductions be Met? Robust Predictions from Multiple Watershed Models	OSU/Ohio DEA	Becker	\$35,508
Invasive Species Prevention from Retailers via Metagenetics, Supply Chains, and Public/Stakeholder Engagement	USEPA	Stepien	\$238,747
Collaborative Research: Winter Snow Depth as a Driver of Microbial Activity, Nutrient Cycling, Tree Growth and Treeline Advance in the Arctic	NSF	Weintraub	\$294,252
Determining the Contribution of Maumee River Fisheries Production to Western Lake Erie Stocks	USGS	Mayer	\$221,995
Using New Tools to Better Understand and Predict Harmful Cyanobacterial Algal Blooms in Lake Erie and Ohio Inland Lakes	OWDA	Dwyer	\$63,750
HAB Avoidance: Vertical Movements of Harmful Algal Blooms in Lake Erie	OSU/Ohio DEA	Bridgeman	\$87,635
Mapping the Burnside, MI 7.5' Quadrangle	USGS	Fisher	\$17,498
Modeling Ballast Water Management Strategies to Slow Invasive Species Spread	Michigan DNR	Bossenbroek	\$33,955
Molecular Basis of Plant Parasitism by a Galling Insect	NSF	Schultz/Appel	\$354,063
Vegetation Surveying in Support of Grass Carp Spawning Potential in the Sandusky River Basin	USGS	Qian	\$79,999

## SCHOLARSHIPS 2015-17

### Jeffrey A. Black Scholarship

- 2015 - Kaylie Deyarman
- 2016 - Austin Bartos
- 2017 - Claire Caryer, Emily Reutter, and Linnea Vicari

### Elmer R. and Gertrude M. Brigham Scholarship

- 2015 - Dylan Grieselding and Alexa Seaman

### Joseph and Mary Capobianco Scholarship

- 2017 - Lucas Arend and Anna Pauken

### Dr. Peter C. Fraleigh Memorial Scholarship

- 2015 - Ryan Krantz
- 2017 - Madeline Tomczak

### Thomas A. Hogan Scholarship

- 2015 - Alyssa Corbeil

### Elliot J. Tramer Scholarship

- 2015 - Benjamin Kuhaneck
- 2016 - Bianca Caniglia
- 2017 - Aminata Fofana and Adam Siefker

### C.V. Wolfe Scholarship

- 2015 - Jeanna Meisner and Joseph Turner
- 2016 - Sarah Carter and Nicole Jablonski
- 2017 - Austin Bartos and Shelby Spencer

### Toledo Gem and Rockhound Scholarship

- 2015 - Kristie Bowersox and Amy Towell
- 2016 - Kristie Bowersox and Amy Towell
- 2017 - Kristie Bowersox and Nathan Powazki



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Ernest H. Fink Award in Geology (2148193)

William A. Kneller Geology Graduate Support Fund (1300521)

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Elliot J. Tramer Environmental Science Scholarship Fund (1301326)

Other \_\_\_\_\_

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