Earth Sciences Newsletter 2018

The Dickin-stone-ian

Artic and Alpine Climate Change Experience (AACCRE) Trips 2016-2018

by Ben Edwards

Thanks to continued very generous support from John and Susan Pohl, we are growing our Arctic and Alpine Climate Change Experience program. In Summer 2016, a group of 6 Dickinsonians (Billy Dougherty '18, Ivy Gilbert'18, Karuna Sah'19, John and Susan Pohl, Ben Edwards) expeditioned to Pond Inlet, at the northern edge of Baffin Island, and trekked out onto the frozen waters of Eclipse Sound to camp on still frozen sea ice for a week. The flight up became a short course on glaciers as we flew over vast expanses of retreating ice on the northeastern mountains of Baffin Island. Once we got our gear packed in qamutiiks (wooden sleds about 10 feet long), we were hauled about 4 hours down the ice to the eastern edge of Eclipse Sound, where it enters northwestern Baffin Bay. While camped on the sea ice we explored the ice floe edge where we saw and heard narwhals and seals, lots of birds, and even a polar bear (we had an Inuit guide with bear protection 24/7!).
To learn more about the structure of the spring sea ice, we augered holes in several locations and found ice as thick as 1.4 m (this was comforting!) and as thin as 40 cm (somewhat less comforting…). We also recorded pH and conductivity measurements of water within the sea ice, and found that it had components from surface melting (relatively 'fresh' water, lower pH and EC) as well as sea water within the ice layers. We also spent time examining incredibly colorful and mineralogically diverse metamorphic rocks and excellent exposures of cross-cutting dykes. We climbed to the top of a local mountain, where we had incredible views of ice bergs (likely calved from Humboldt Glacier on northwestern Greenland) and of the structure of the sea ice across the sound. The trip ended with a very memorable ride back to Pond being towed through 10-20 cm of water, which had formed a vast lake on top of the sea ice. We were glad to be on wooden sleds that we hoped would float if necessary…☺

Inside this issue:

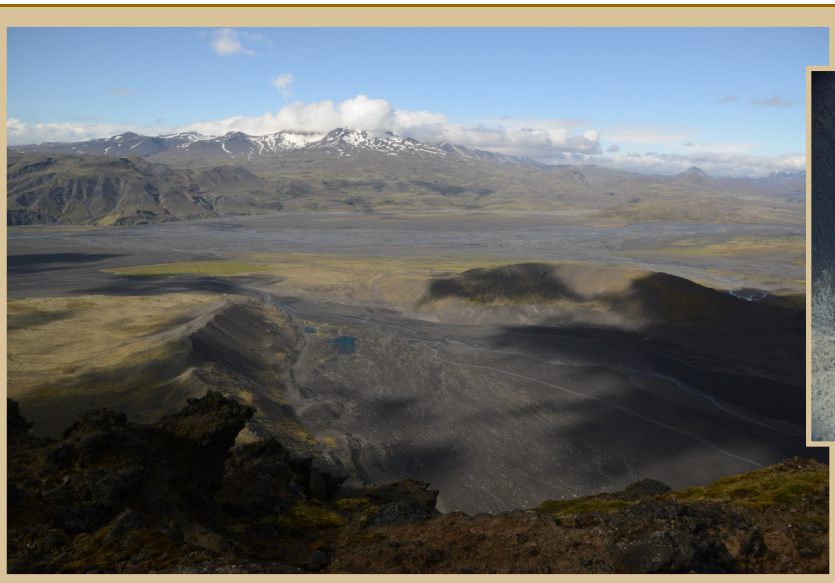
Artic and Alpine Climate Change Experience (AACCRE) Trips (cont'd) 2016-2018

by Ben Edwards

During the Summer of 2017, the AACCRE program ramped up significantly in numbers of students involved and through doing two trips. In June professors Ben Edwards and Kristin Strock (Env Sci) took a group of 6 students to Iceland for two weeks for a variety of field experiences. We spent quite a bit of time surveying lakes to make background measurements of physical (e.g. temperature) and chemical profiles in lake water columns, as well as collecting lake sediment cores to be used in future studies of diatom climate records. Enough data was collected to support two students presenting these preliminary results at the Fall American Geophysical Union meeting in the fall of 2017. We also got a crash course in the formation of glaciovolcanic pillow lavas during overviews of two rock quarries where several generations of Dickinson students have been working with Professor Edwards. We also visited the site of the infamous 2010 Icelandic eruption at Eyjafjallajökull along the south coast. Professor Strock led a group of students in sampling water from several ponds, which may be some of the world's newest kettle lakes, that have formed in the former glacial lagoon of Gigjökull. Professor Edwards and ERSC alum Billy Dougherty '18 conducted a ground based photosurvey of the terminus of Gigjökull glacier, which subsequently was used in part during Billy's senior thesis work (which was also presented at Fall 2017 AGU). Besides lots of fieldwork, the group got to see puffins on the south coast at the Black Sand beach, drove up onto Langjökull ice cap and walked on the glacier, and even met with a group of Dickinson alumni who were arriving for a Dickinson-hosted, geology-based tour of Iceland (also hosted by Professor Edwards, otherwise known by his Icelandic name of Benedikt Williamsson).

The second 2017 trip also involved an ERSC alum, Will Kochtitzky '16, who returned to Carlisle to help plan and execute the first AACCRE trip to an alpine site. Will, along with Prof. Edwards and four ERSC majors (Hayat Rasul, Billy Irving, Amanda Haddock, and James Fisher '18), expeditioned to the very wild country of northwestern British Columbia to base camp at Hoodoo Mountain volcano, which has been studied by Edwards for more than 25 years. The group was helicoptered in to a remote campsite (we effectively encouraged a large grizzly bear to vacate the area on the first trip in) to do projects aimed at mapping paleo-lake terraces, glaciovolcanic deposits, and ice characteristics for three different glaciers (Hoodoo and Twin outlet glaciers, and Hoodoo Mountain ice cap). The group excelled in this rugged terrain, cooking meals on propane stoves, sleeping inside an electrified bear fence, and collecting some very intriguing Global Positioning System measurements related to ice movements of the two valley glaciers. By sheer luck, this group was in the field during one of the hottest weeks on record (we were very glad most days to be sitting on ice!). We measured ice positions and surface elevation during the first two days of the trips, and then returned to repeat the measurements at the end of the trip. Over the 7 days of field work, we actually saw the ice move! With extensive post-processing of the data during spring 2018, we are hoping to present these exciting results at Fall 2018 AGU.

Iceland 2017



British Columbia, Canada

Summer 2018 will be another big one for the AACCRE program. We are returning to Iceland with 7 students, and then taking the most remote trip yet to the northeastern side of Ellesmere Island, in the Canadian High Arctic. Stay tuned for the next ERSC newsletter to read about these and other future AACCRE expeditions…

Cassa Trip to Southern Arizona And New Mexico Spring Break - 2017

By Alyson Thibodeau

During Spring Break 2017 (March 12-18), Dickinson faculty and students took a Cassa-funded field trip to explore the geology of southern Arizona and New Mexico. The trip was led by myself (Alyson Thibodeau), Ben Edwards, Marcus Key, and Rob Dean and included fifteen students: Kendra Bonsey '19, Allison Curley '19, Billy Dougherty '18, Kyle Fitch '18, David Gerstenfeld '20, Ivy Gilbert '18, Amanda Haddock '19, Billy Irving '19, Sophia Larson '17, Rachael Moore '18, Tom O'Donnell '19, Niomi Phillips '18, Karuna Sah '19, Amanda Santilli '17, and Rita Stern '17.

This trip allowed us to immerse ourselves in the both geological and cultural history of the region. We started our adventure just south of Tucson, Arizona where we toured the breathtaking, other-worldly, living caves of Kartchner Caverns State Park. From there, we drove to Chiricahua National Monument, making a quick stop to see the Great Unconformity along the way. In the monument, we viewed remnants of the ~27 million-year-old Turkey Creek Caldera, observed ignimbrite flows and volcanic ejecta along a hike, and walked among the hoo-doos for which the monument is famous. While in southern Arizona, we also toured the Freeport-McMoRan open pit copper mine in Safford and collected mantle olivine xenoliths from basalt flows on the San Carlos Apache Reservation.

From southern Arizona, we drove west into New Mexico, where we explored Kilbourne Hole, a unfilled volcanic maar produced by the interaction of basaltic magma and groundwater around ~80,000 years ago. At Kilbourne Hole we were able to collect both mantle and lower crustal xenoliths and observe stratified and crossbedded pyroclastic surge deposits around the rim of the crater. Next, we headed towards the New Mexico/Texas border to visit the Cerro de Cristo Rey Cretaceous dinosaur tracksite in Sunland Park. While in New Mexico, we also spent a morning at the Valley of the Fires where we hiked within the Carrizozo lava flow, a >75 km-long Holocene basalt flow associated with the Rio Grande Rift and the second youngest lava flow in New Mexico. On the drive back from the Carrizozo flow, we stopped at the Three Rivers Petrogylph site. Over 1000 years ago, Jornada Mogollon people carved more than 21,000 petroglyphs in blocks of alkaline trachybasalt containing very large hornblende phenocrysts. Thus, this stop afforded us a lesson on both petroglyphs and igneous petrology – what could be better?

We capped off the trip climbing up (and sliding down) the bleach white gypsum dunes of White Sands National Monument and exploring magnificent cliff dwellings in the Gila Cliff Dwellings National Monument. In addition to official stops, there was plenty of opportunity to marvel at the geology exposed in road-cuts, eat local specialties (mmmm…we loved Hatch green chiles), and sit around the campfire at night. Overall, it was an unforgettable and spectacular trip through the southwestern desert.

Posing among the hoodoos in Chiricahua National Monument.

Cassa Trip (cont'd)

Living it up in Kartchner Caverns State Park.

Letter from the Chair

Departmental Update from the Chair

By the time you receive this newsletter, I will have finished the third year of my latest three year stint as department chair. Jorden Hayes and Aly Thibodeau made it through their year two personnel reviews. Thanks to Aly we continue to bring in a diverse and interesting mix of external and internal seminar speakers for our Tuesday Lunch and Learn seminar series (http://www.dickinson.edu/info/20107/earth_sciences/2031/news_and_events). Thanks to Jorden, we now have a departmental social media intern, so follow us @dsonearthsci. Even more exciting is that Ben Edwards was named to the Walter E. Beach Chair in Sustainability! We now have two named chairs in the department!

Another big accomplishment in the department this year was a revision to the Earth Sciences major core requirements. The new requirements are as follows with the changes in **bold**:

ERSC 141 (Earth's Hazards) **OR** ERSC 142 (Earth's Changing Climate)	
ERSC 151 (Foundations of Earth Sciences)	
Take 4 of 5:	ERSC 302 (Structural Geology)
	ERSC 305 (Earth Materials)
	ERSC 309 (Sedimentology & Stratigraphy)
	ERSC 331 (**Geochemistry**)
	ERSC 333 (Environmental Geophysics) OR ERSC 335 (Global Geophysics and Tectonics)
CHEM 131 or 141 (General Chemistry)	

We think these new core requirements will integrate our new geophysicist (Jorden) into the major better and give our students more options, especially in geophysics. In addition to these core courses, there are also track-specific requirements which did not change (http://www.dickinson.edu/homepage/413/earth_science_curriculum).

Marcus Key

Geology/Earth Sciences Fund Raising Needs

Many of the exciting things happening in the department are directly related to your past support of student research and field experiences. For example, the William Vernon Research Prize in Geology and the Henry Hanson Research Prize in Geology have supported some of our senior theses such as:

2016 – Research Projects
Zachary Keller-Coffey – "Isotopic Tracing of Turquoise Artifacts from southern New Mexico, USA"
Sophia Larson – "The Relationship between Stream Chemistry and Landscape Position in a Tropical Field Setting, Basse-Terre, Guadeloupe"
Amanda Santilli – "Sources of Variation in Beach Sand Texture and Composition along Costa Rica's West Coast" (Amanda received the William Vernon Prize for Excellence in Geology)
Rita Stern – "Capability for Carbon Sequestration in the Utica Shale and Point Pleasant Formations located in Ohio, Pennslyvania, New York and West Virginia"
Jessica Wolfman – "The Threshold Size of a Ghost Clast: A Study of chemical Weathering in Basse-Terre, Guadeloupe"

2017 Research Projects
William Dougherty – "Influence of Gigjokull on the Emplacement of the Lava Flow Produced by the 2010 Eruption of Eyjafjallajokull, Iceland, and the Flow's Effects on Gigjokull's Resilience to Climate Change"
Logan Darling – "Origin and Extent of Pyroclastic Deposits from the 2015 Villarrica Volcanic Eruption, Chile"
James Fisher – "Quantifying Shortening in the Juniata Culmination, PA: Insights from a Balanced Cross Section Incorporating Observations at the Grain-, Outcrop- and Map-Scale"
Kyle Fitch – "Strain Accommodation in Foreland Valley and Ridge vs Appalachian Plateau"
Katherine Manges – "Taphonomic Comparison of Recent and Fossil Bryozoans Fouling New Zealand Sea Urchins"
Rachael Moore – "Mercury Chemostratigraphy of the Triassic-Jurassic Transition in Kuhjoch, Austria"
Niomi Phillips – "The Effects of Mineralogy on C and O Isotope Values in Skeletal Carbonate"

The Cassa Extended Field Trip Fund subsidizes fieldtrip costs for students which has allowed us to take them to Hawaii, Death Valley, Grand Canyon, Zion, Yellowstone, Glacier, Acadia, England, Scotland, Wales, Sicily, and Costa Rica (http://www.dickinson.edu/info/20107/earth_sciences/1809/field_experiences/4). See the article on pages 4 - 5 about our Cassa trip last year to the desert southwest in Arizona and New Mexico. Our goal is to increase the Cassa Fund to enhance the geographic diversity of our student field experiences by alternating annual cheaper domestic trips with more expensive international trips. Thanks to the generosity of alumni who value the learning experience of field work for making these trips possible!

Finally, the Potter Lectureship Fund supports bringing a distinguished Earth scientist to campus each year to interact with our students (http://www.dickinson.edu/info/20107/earth_sciences/3028/potter_lecture). See the article on page 10 about our 13th Annual Potter Lecturer Ted Daeschler from the Academy of Natural Sciences in Philadelphia. He gave a stimulating lecture entitled, "To the ends of the Earth: Fossil Discoveries from the Age of Fishes in Pennsylvania and Beyond."

If you are able to contribute to any of these funds described below, please send a check payable to Dickinson College and mail it to Marcus Key, Dept. of Earth Sciences, Dickinson College, P.O. Box 1773, Carlisle, PA 17013-2896. Please indicate on the memo line which fund you would like to contribute to or contact me at 717-245-1448 if you want to discuss the department's areas of greatest need. Our goal is to build the research funds to the point where we can provide some funding to all of our seniors.

See the following page for additional information about the various funds.

Endowed Departmental Funds

NAME	DESCRIPTION
David and Cary Cassa Extended Field Trips	It is used by the Department to help subsidize student expenses for extended field trips. The trips supported will be beyond those ordinarily associated with regularly offered courses. Trips will occur either every year or every other year. Decisions about expenditure of the funds will be a joint decision of the Department faculty.
The Henry Hanson Research Prize	It is awarded to an outstanding student in support of his or her independent research project. The money will be used to help pay for expenses such as travel for field work, purchase of research equipment, software, supplies, etc. Travel to professional meetings can be supported, but only in so far as it is related to the student's research. While field work should be encouraged, support of laboratory work will also be appropriate. The award recipient will need to demonstrate initiative, curiosity, creativity, and promise in the field through a selection process which will be conducted by the Department faculty based on cumulative grade point average and a formal application submitted by each student. This application will include a complete research project proposal including an abstract, a hypothesis, an outline of their experimental design, a discussion of proposed data analysis techniques, a summary of how they plan to present their results, and a proposed budget for the project. This prize was established in honor of Professor of Geology Henry Hanson. It will normally be awarded annually in May at the year-end picnic with the moneys being available for use either over the summer or during the course of the following academic year. The selected student will be listed in the Convocation program at the beginning of the following fall semester.
Potter Lectureship	This lectureship was established by alumni, colleagues, and friends in 2004 to honor Emeritus Prof. Potter who retired in 2005 from Dickinson. It provides an opportunity for our students to meet and engage established scientists and to have discussions about their research, career paths, graduate school, and career opportunities beyond the limestone walls.
The William Vernon Research Prize	It is awarded to an outstanding rising senior Earth Sciences major in support of his or her laboratory or fieldwork or travel to present results at a recognized professional conference as part of their senior independent research project. The award recipient will be chosen through a selection process which will be conducted by the Department faculty based on cumulative grade point average and a formal application submitted by each student.

Endowed Departmental Funds (cont'd)

NAME	DESCRIPTION
The William Vernon Research Prize (cont'd)	This application will include a complete research project proposal including an abstract, a hypothesis, an outline of their experimental design, a discussion of proposed data analysis techniques, a summary of how they plan to present their results, and a proposed budget for the project. This prize was established in honor of Professor William Vernon, the founding member of the department. It will normally be awarded annually in May at the year-end picnic with the moneys being available for use either over the summer or during the course of the following academic year. The selected student will be listed in the Convocation program at the beginning of the following fall semester.

Endowed Extra-Departmental Funds

NAME	DESCRIPTION
Robert Allan Jansen Memorial Student-Faculty Research Fund	It is awarded by the College's Research and Development Committee for a student-faculty research team involving an Earth Sciences (first choice) or Environmental Sciences/Environmental Studies (second choice) sophomore or junior (or to a sophomore or junior in a closely related field of study in the sciences).
Jeffrey Niemitz Endowed Student Research Fund	It is awarded by the College's Center for Sustainability Education to a student researcher in Earth Sciences (first preference), Environmental Sciences/Environmental Studies (second preference) or a closely related field. It is preferred that the Fund shall be used to support a research project involving or closely related to the sustainable use of Earth's natural resources in disadvantaged communities around the world. The research project would ideally aim to solve an existing or potential challenge related to the use or misuse of natural resources. Additionally, educating communities about the benefits and holistic value of sustainable living should be incorporated as part of the research project. A tangible outcome (publication, presentation, etc.) from the research project is highly desired. When fully funded by existing pledges by the year 2020, the endowment will generate an annual student research grant of at least $5000. This grant will be awarded to a student to fund scientifically-based research around the world.
The Dickinson Fund	Working in line with the college's mission and core values, the Dickinson Fund supports educational access for students in need. It funds sustainability efforts. It purchases lab equipment and art supplies. It is part of why this college has such a track record of success in all fields, including its exceptional financial management and fiscal responsibility.

Potter Lectureship Going Strong

	Name	Affiliation
2005	Richard Alley	Pennsylvania State University
2006	Bruce Marsh	Johns Hopkins University
2007	Rob Thieler '87	USGS-Woods Hole
2008	Jeremy Jackson	Scripps Institution Oceanography– University of California at San Diego
2009	Mark Brandon	Yale University
2010	John Eichelberger	USGS-Reston
2011	Katie Huntington	University of Washington
2012	Frank Pazzaglia	Lehigh University
2012	David Bottjer	University of Southern California
2014	Rudy Slingerland '69	Pennsylvania State University
2015	Susan Brantley	Pennsylvania State University
2016	Lonnie Thompson	Ohio State University
2017	Ted Daeschler	Drexel University
2018	Steve Holbrook	VA Polytechnical Institute & State University

13th Annual Potter Lecture

On 2/27/17 Ted Daeschler, Associate Professor, Department of Biodiversity, Earth and Environmental Science, at Drexel University, Philadelphia gave a stimulating public lecture "To the Ends of the Earth: Fossil Discoveries from the Age of Fishes in Pennsylvania and Beyond." Ted is an Associate Professor in the Department of Biodiversity, Earth & Environmental Science at Drexel University as well as an Associate Curator of Vertebrate Zoology at the Academy of Natural Sciences. He described the exploration for and discovery of a wide variety of Devonian-age fossils from Pennsylvania, Arctic Canada, and his recent trip to Antarctica. Among the discoveries is *Tiktaalik roseae*, an animal that lived 375 million years ago and is widely recognized as the best evolutionary intermediate between finned and limbed vertebrates.

14th Annual Potter Lecture

Amidst a robust seminar series that included many great talks and presentations, our department celebrated the 14th annual Potter Lectureship with our distinguished guest and invited lecturer: Dr. W. Steven Holbrook, Professor and Department Head, Department of Geosciences, Virginia Tech. Steve is a dynamic and engaging speaker. His main public lecture was, "What's under Old Faithful? New geophysical images of Yellowstone". He presented data from surface geophysics and an airborne electromagnetic (EM) survey over Yellowstone. These new data fill a knowledge gap for Yellowstone hydrothermal systems that existed at the scale of 100s of meters below the surface, between previously derived near surface and deep seismological images. Steve's data was received with many audible 'oohs' and 'aahs' as he took the audience on a tour of the 3D-volume of EM imagery. Many students were left inspired by their interactions with Steve, both as audience to his lectures and other personal interactions in class and during lunch. Billy Irving, '19, remarked, "The research Dr. Holbrook conducted makes me feel excited about all the things I could achieve with a degree in earth sciences!"

The Department's 60th Birthday Celebration

On December 7th at the end of the semester holiday luncheon, the department celebrated it's 60th Birthday. On December 9, 1957 at a special faculty meeting, the college voted and passed 27 to 22 on making Geology an official major.
One of the founding faculty, William Vernon was present for the celebration.

Joseph Priestley Award Celebration
66th Annual Award Ceremony
September 26, 2017

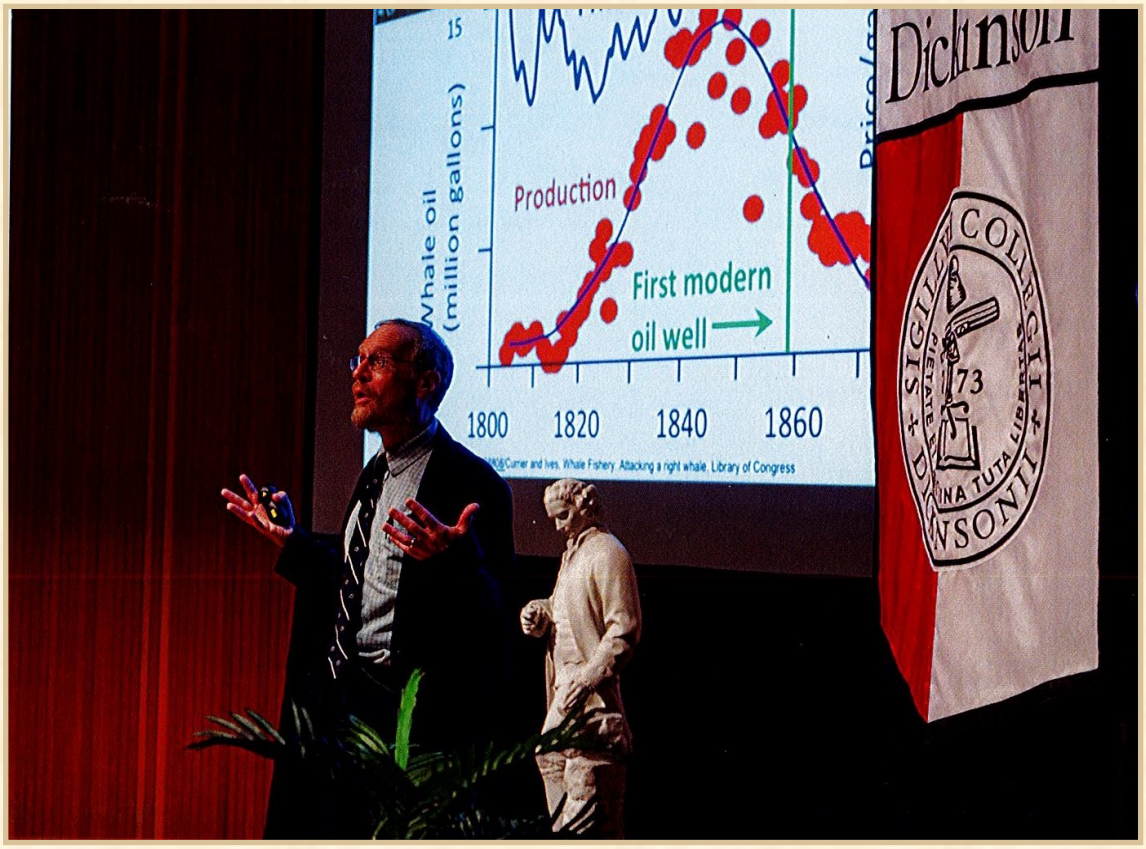
The Joseph Priestley Award is presented by Dickinson College in memory of Joseph Priestley, discoverer of oxygen, to a distinguished scientist whose work has contributed to the welfare of humanity. The Priestley Award, first presented in 1952, recognizes outstanding achievement and contribution to our understanding of science and the world.

The Joseph Priestley Award celebrates the sciences at Dickinson College. The award recipient is chosen by a different science department each year.

The year's recipient, Dr. Richard Alley, was selected by the Department of Earth Sciences. Dr. Richard Alley (ph.D. 1987, geology, University of Wisconsin-Madison) is the Evan Pugh University Professor of Geosciences at Pennsylvania State University. He studies the great ice sheets to help predict future changes in climate and sea level, and has conducted three field seasons in Antarctica, eight in Greenland and three in Alaska. He has been honored for research (including election to the U.S. National Academy of Sciences and to foreign membership in the Royal Society), teaching and service.

A co-recipient of the 2007 Nobel Peace Prize, Dr. Alley participated in the U.N. Intergovernmental Panel on Climate Change, and has provided requested advice to numerous government officials in multiple administrations, including a U.S. vice president, the president's science advisor, and committees and individual members of the U.S. Senate and House of Representatives.

He has authored or co-authored over 290 refereed scientific papers. He was presenter for PBS TV miniseries on climate and energy, *Earth: The Operator's Manual,* and author of the accompanying book. His popular account of climate change and ice cores, *The Two-Mile Time Machine,* was Phi Beta Kappa's science book of the year of 2001.



Conversation with students.

Awarded Medallion

William Vernon Prize for Excellence in the Earth Sciences 2017 & 2018

Each year the faculty has the difficult task of deciding which graduating senior will receive the Vernon Prize for Excellence in the Earth Sciences. The prize is based on grade point average, service to the department and the college, and promise for the future.

Amanda Santalli '17, was awarded the 2017 Vernon Prize for Excellence in Geology. Amanda's senior theses "Sources of Variation in Beach Sand Texture and Composition along Costa Rica's West Coast" was built upon the summer that Amanda spent working with faculty in Costa Rica.

This year's recipient was James Fisher '18. James' senior theses "Quantifying Shortening in the Juniata Culmination, PA: Insights from a Balanced Cross Section Incorporating Observations at the Grain-, Outcrop– and Map-Scale" helped him to achieve Honors in the major.

Edwards Appointment to the Walter E. Beach Chair in Sustainability

We are pleased to announce the appointment of Professor Ben Edwards to an endowed named chair position, the Walter E. Beach Chair in Sustainability. These appointments are based upon the recommendations of the Faculty Personnel Committee and the Provost to the President of the college.

The Personnel Committee's recommendation includes consultation with each faculty member's department. Awarding of an endowed or named chair in based upon continuing excellence in teaching, scholarship and service.

On February 28th a champagne toast was held to celebrate Ben's appointment.

Professor Marcus Key

Greetings!

I continue to teach my usual rotation of Sedimentology & Stratigraphy, Paleontology, Energy Resources, and Earth's Changing Climate. It is a challenge but always exciting to keep up with all the new discoveries and rapid technology-driven changes in all these content areas. On the research front, I am working with colleagues in Perth, Australia using their country's synchrotron to image Eocene bryozoans in Aboriginal chert artefacts. You can read more about my research program at: http://www.dickinson.edu/info/20107/earth_sciences/1835/marcus_key.

I was honored to be elected a Fellow of the Geological Society of America this year. That means I am officially old!

On the home front, Maria and I are getting a taste of the impending empty nest with John the only one at home. Noel and I enjoyed seeing George Pedlow '68, George Lee '70, Suzy Kairo '83, Jess Ustick Cannon '98, Clarence Dingman '03, Julia Rasamny '13, and Joe Stahley '13 at the alumni weekend this year!

Sincerely,
Marcus

Professor Peter Sak

Yes, Deb I know, I will write my update now. Just give me a few minutes to gather my thoughts and try and remember what year it is. Ok, got it…

2017 started off with the usual mix of college goings-on, Maya needing rides to some practice or other, and some time for hiking and likes mixed in. Here on campus the department continues ticking along. In the fall, I taught a GIS-intensive version of Surface Processes. The emphasis on GIS was an adaptation necessitated by my breaking my ankle and being unable to lead a few planned field trips. The students were game to try and I seemed to enjoy the first couple of GIS labs and appreciated the quantitative ways of interrogating the landscape. In addition to teaching Surface Processes and mastering crutches, I supervised Kyle Fitch and James Fisher as they completed senior thesis investigating finite strain in the central Appalachian Mountains. In October, James and Kyle presented a fantastic poster at the Annual Geological Society of America Meeting in Seattle, WA.

In the spring semester, I have been on sabbatical which has be restorative and invigorating. Much of the time has been spent shuttling Maya from various activities and coaching her hockey time. In February I graduated from my ankle brace to my ice skates and highlights of the winter included skating the 16 km length of the Rideau Canal ice rink in Ottawa! On a professional level, the sabbatical has been spent writing up manuscripts that relating variations in weathering rind formation rates on the tropical island of Guadeloupe to variations in the magnitude of mean annual precipitation. I have also been working with collaborators to develop ways of visualize 3D porosity development associated with weathering rind formation. Closer to home, I have been working on intricacies of how slip is transferred from the Valley and Ridge to the Appalachian Plateau. As it turns out, this like most things, is more complicated upon closer inspection. Using newly acquired seismic data we are able to balance slip across the boundary between the Valley and Ridge and Appalachian Plateau. These same mechanisms appear to dominate along a transect through the West Virginia-Virginia section of the Appalachian Mountains. In case you were curious, there appears to be less shortening along the West Virginia-Virginia transect than we measured along the Susquehanna River. In addition to writing, I spent a couple of weeks at the University of Utah learning new GIS techniques and ways to combine landscape evolution with near surface weathering rates to identify the weathering signal associated with an erosional wave flushing through the landscape. Stay tuned, more to come on that front in the not so distant future.

If you are ever in Carlisle, please stop by it would be great to hear about all of your adventures!
Pete

Professor Ben Edwards

It's been another busy two years! Post-book publication (Glaciovolcanism on Earth and Mars, Cambridge Un Press, June 2016), I have been trying to catch up on new teaching, travel and other research projects. In support of the expanding Arctic and Alpine Climate Change Research Experience, I taught a course in Spring 2018 on A&A climate change. It was a fun course and included the students who are going on the 2018 AACCRE expeditions (Iceland: 21 June-4 July; Ellesmere Island: 18 July-4 August). The students worked in groups to compile information on a number of Arctic locations (geography, geology, climate change, etc), including the sites for the 2018 trips.

This is the second summer of the expanded trips (see other articles in the newsletter), and we will have one more summer of trips in this cycle of the program. I also have taught Earth materials, volcanology and Natural Disasters in the past two years – no shortage of topical lectures in those courses at the moment!

I have also continued my research expansion into ice by helping DC alum Will Kochtitzky (now at U. Maine) get his thesis on the Corpuna ice cap published in Journal of Glaciology (with co-author Ellyn Enderlin, spouse of DC alum Pete Enderlin), supervising Billy Dougherty's thesis on Gigjokull glacier in Iceland (rising SR Karuna Sah is continuing that work in Iceland this summer), Logan Darling's thesis on impacts of the 2015 Villarrica eruption in Chile, and James Fisher's independent study with data on glaciers from one of the 2017 AACCRE trips.

I am looking forward to a much-needed fall sabbatical to catch up on paper writing (several in the works) as well as an assessment of the AACCRE program to date. I am also continuing my involvement in the POSSE program, and was pleased to see another cohort graduation this spring! Otherwise I've been doing a bit of traveling for research and conferences (Chile 2017, New Mexico and Arizona 2017, Iceland 2017, British Columbia 2017, Vancouver 2018, Vienna 2018, Colorado 2018), helping Bio professor Scott Boback with rattlesnake den geology, and expanding my Unmanned Aerial Vehicle skills (I am FAA certified now!).

The family front has also been packed! Teagan graduated from Carleton College recently (June 2018; heading for a year of study in Iceland starting this fall), and Kaelan will be a JR there next year. Kim is starting her 5th year as a Carlisle High School math teacher and is still expanding her reach there. With both girls out of the top floor during school term, we got lots of visit space if anyone is passing through town!

Cheers!
Ben

Professor Alyson Thibodeau

Hello everyone,

I write this update from Tucson where I have been working with two summer research students to collect isotopic data at the University of Arizona. The weather is hot (temperatures exceeded 110°F last week), but at least the labs are cool and temperature controlled! When we're not in the lab, we have enjoyed exploring the rocks, flora, and fauna of the Sonoran Desert.

The past several years have flown by as I've settled into Dickinson and life in Carlisle. Over the past two years, I have continued to develop new courses including *Geochemistry* (formerly *Chemistry of Earth Systems*), *Archaeological Geology*, and a first-year seminar called *Exploring American Wilderness*. I am also continuing to teach *Earth's Changing Climate*, *Habitable Worlds*, and *Isotope Geochemistry*. On the research side, I have finished setting up clean lab facilities dedicated to preparing samples for metal isotope analysis. I am excited to be able to prepare samples in-house and thus more easily involve students in isotope-based projects.

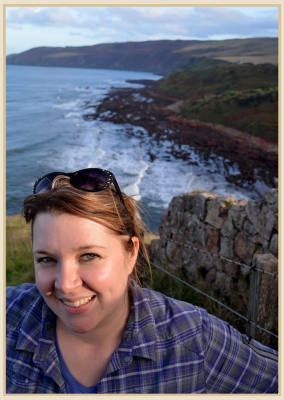
In my research, I am continuing to work closely with archaeologists to investigate questions related to the mining, procurement, and exchange of metals and minerals by past societies. This includes using lead and strontium isotopes to determine the geologic sources of turquoise artifacts from archaeological sites the American Southwest and Mexico. Among other projects, my collaborators and I just published an article in the journal *Science Advances* that discusses the origins of Aztec turquoise. The work has been picked up by several media outlets, and was recently featured in the Science Section of the *New York Times*.

Closer to Dickinson, I have been working with conservators at the Smithsonian (and joined by Allison Curley '19) to investigate the source(s) of white pigments applied to ceremonial drinking vessels from the Andes. Allison presented the results at the GSA annual meeting last fall (in Seattle) and at the Society for American Archaeology Annual Meeting this past spring. We are looking forward to finishing the write-up of this work in the coming months. Finally, this summer, I am lucky to be working with two research students (Allison Curley and Kendra Bonsey '19) to reconstruct historical sources of metal pollution (lead, mercury, zinc) to lake sediments in northeastern Pennsylvania. We are making the isotope and trace metal measurements (lead, zinc, cadmium) on the sediments using facilities at the University of Arizona, and will make mercury measurements at Dickinson later this summer. This work will form the basis for the students' senior theses and we anticipate they will present their results at national meetings this fall.

On the home front, I have moved to a house on the edge of campus and am joined by my partner Chris, and our cat, Gertie. In our free time we run, hike, and bike around south-central PA. I hope to meet many more alumni, so please stop by to chat if you are visiting campus!

Aly

Professor Jorden Hayes



Greetings friends and alumni:

Reflecting on my first few years here, I am humbled to work alongside such stellar colleagues and outstanding students. These last two years have been wonderfully intense and rewarding. I still enjoy the challenges of teaching and research. My time has been split between developing new courses, building the geophysics lab, writing papers, starting new projects, and serving as the faculty representative for the EcoLeague. The details are a bit of a blur at this point!

I just wrapped up a new course in Environmental Geophysics. The course was received very well and the students impressed me with their hard work and drive to understand the many and varied fuzzy images of the subsurface. Students were able to collect and process seismic refraction, ground-penetrating radar (GPR), resistivity, and magnetic data. As a part of the course, students were able to work on a local project with the Cumberland Valley Heart and Soul Project and the Cumberland Valley Historical Society to image the subsurface of a local African American cemetery built by former slave and civil war veteran Elias Parker. This project garnered the attention of many local media outlets. Click on the following link to learn more about the project: https://youtu.be/QYAqlhclx8c

I've continued my critical zone research which focuses on understanding the architecture of the deep critical zone. My latest projects are to examine the subsurface vestiges of periglacial processes from the LGM in central PA. This summer I will be advising Hayat Rasul ('19) to collect time-lapse resistivity data to characterize groundwater flow and karst at the Dickinson College Farm. Ben Eppinger ('20) has also been working in my lab using Matlab to generate 3D images of a seismic refraction data from a site near Baltimore, MD.

While our class of '17 grads were receiving their diplomas last year, Isaac and I were in Hershey welcoming our first-born, Noelle Carolyn Hayes. Noelle is a vibrant and happy little soul. I am blessed to be her mom. Isaac has been building drones and designing a new deck for our new house in Boiling Springs. Life is good!

I would love to meet more of our alums. Please feel free to stop by if you are ever back in Carlisle! You can also follow our research and activities on Instagram and Twitter @WiggleTracers and @DsonEarthSci

Jorden

Students at the Mt. Holly Springs Cemetery using the GPR Equipment

The world is our classroom

Deb Peters, Academic Department Coordinator

Hi Everyone,

It hard to believe that I have been with the Earth Sciences and the Environmental Studies departments for 6 years and almost 21 years with the college. Time sure does fly when your having fun!

I continue to be very busy with juggling the needs of two busy and growing departments and enjoy every minute of it! I just never know what the day will bring my way.

I am looking forward to my reduced work schedule for the summer months and have many things planned. In addition to spending time with family (especially my two grandsons), my husband and I will be taking our annual motorcycle vacation. Last year we made it to New Orleans and Navarre Beach in Florida and this year we are headed to Holden Beach, North Carolina.

If you are in the area this summer, stop by the office to say "hello"!
Best,
Deb

Sweet Irene

Robert Dean, Department Technician

Hello All,

It's hard to believe, but I'm closing in on 11 years here at Dickinson as the Earth Sciences (formerly Geology) Technician. In that time, I have had the chance to cross paths with many great students and have enjoyed watching you all go on to do bigger and better things. The job keeps me busy and we're always finding new and interesting lines of research, especially with the addition of geophysics.

On a professional note, I had the opportunity to help with our last Cassa trip to Arizona and New Mexico. As many of you know, I'm a UTEP alum so it is always nice to get back to desert. With the addition of Jorden Hayes, we have been actively building a fairly robust geophysics lab and the inaugural iteration of Environmental Geophysics had us out on the Dickinson College Farm for a great deal of real world study. We have added quite a few pieces of geophysical equipment to our surprisingly diverse collection of research tools including a Geometrics seismic refraction array, a Sensors and Software ground penetrating radar unit and a Lippmann Earth resistivity meter. All of the new instrumentation has not only kept me busy, but kept the job fascinatingly fun.

On a personal note, I continue to chase trout with almost every free moment. Living in the Cumberland Valley has certainly provided some amazing fly fishing opportunities and I'm so very thankful for that. I'm writing this update on the heels of a multi-week trip to Michigan wherein I had the opportunity to fish the famed Pere Marquette. I've continued down the rabbit hole of fly fishing and fly tying with a somewhat recent interest in historic fly patterns and materials. I'm here in Kaufman most of the time so please do stop by sometime and say "hello"!

Cheers,
Rob

Professor Noel Potter

I continue to enjoy retirement, but can't give up geology. I frequently still go to the Department for part of the day.

Our son, Noel Lewis graduated from Bates College last Spring with a degree in geology. He is now a grad student working on a Masters degree at the Climate Change Institute at the University of Maine, Orono.

Helen and I made a 2 week trip to New Zealand in January to accompany Noel Lewis to his thesis area. He was mapping moraines and collecting samples to do exposure age dating on them in the shadow of Mt Cook, New Zealand's highest peak. Helen continues working at the Pennsylvania Survey, but now and then I hear rumblings about retirement sometime soon. I continue to attend our NE GSA meetings, and a few weeks ago in Burlington, VT I saw 2 of our graduates--Jonathan Gourley and Jeff Hoffer, and 3 former sabbatical replacements—Paul Strother, Jim Ebert, and Jennifer Elick.

I enjoy hearing from former students. E-mail me at: pottern@dickinson.edu .

Jeff Niemitz

After three years, Trish and I are finding retirement suits us quite well. We don't seem to miss working although we like to keep up with what is happening on campus. President Ensign appears to be settling in nicely and we pass the new dorm construction almost every day marveling at the size of the building.

Two things have changed for us in retirement: we are on the road a lot and when we are in Carlisle we have found a series of volunteer opportunities quite edifying. Number 8 grandchild (a boy) arrives on January 28 to our son, Matt and his wife in Atlanta. Number 7 came last May 30 to our other son, Ben and his wife in Huntsville, AL. With some good friends leaving Carlisle to move to Birmingham, AL we have been making that Southern trip quite often in the last 6 months. Our daughter is now in NW Indiana so we basically live in our car. We have managed to beat the heat of summer and the snow of winter recently. We spend June to Sept at our family cottage in NE PA and were in the south for last year's big snow and this year's big nor'easter both in March. We have taken one big trip since retirement (Australia and New Zealand) and will get back to England and Eastern Europe this coming Fall with friends.

On the volunteer side we have been helping at Project Share's Farm Stand with what is called the Alpha program. We also help serve lunch to homeless and down on their luck people at the Shiloh Church in the north end of town. Trish is doing some nursing at the Bethesda Mission in Harrisburg and we have been on mission trips to Tanger Island in the Chesapeake Bay, Belize, and the Dominican Republic in the last couple of years. The only sad bit has been that both my parents passed away in the last 12 months and Trish's Dad is fading. They were or are all in their 90's so lived good long lives.

Though we are away from Carlisle a lot do not hesitate to call or email (still niemitz@dickinson.edu) if you are in the area. The light is always on at 230 Conway St. and we always love to catch up with what you all doing.
Cheers
Jeff

CLASS OF 1971

Molly Flower Eppig

I've been retired from Earth Science teaching since 2012. Living the good life in New Hampshire and enjoying seeing familiar rocks and familiar faces [almost wrote 'facies'] at home and away. Summers in lovely Prince Edward Island. Always looking forward to the next reunion.

CLASS OF 1972

Randal Wallett

I retired in 2017 after 44 years working in the mining industry and am now living in the Carlisle area.

CLASS OF 1973

Martha Hall Kern

Retired from PA Dept. of Environmental Protection, hydro-geologist. Relocated to Connecticut in 2004. Daughter, son-in-law, and grandson living in Penn State area.

CLASS OF 1974

Geoff Coe

Status quo: Still shooting wildlife images in SW Florida (with occasional forays to the mid-Atlantic states), teaching photography workshops, and taking speaking engagements.

CLASS OF 1974

Susan Duffield

Over the years, my husband, Chip, and daughter, Katherine, have enjoyed volunteering at The Houston Museum of Natural Science, so the museum became an obvious choice as the venue for Katherine's marriage to Robert in June 2017. A large specimen of Brazilian amethyst served as the backdrop for the ceremony in the Gem and Mineral Hall, and we were pleased that Barb Faulkner (Geology, '74) and Kathy Ellis ('74) and her husband, Harry, attended. Field trips were made to the newly renovated first-floor ladies' room, which is richly decorated with trilobites, crinoids, and belemnites.

In August, just in time for my 65th birthday, hurricane Harvey brought 21 inches of Cypress Creek into our home. The flood maps we'd looked at before buying the home indicated we were in 500-year floodplain, and, for 28 years, flooding in our area adhered to the contours of the 100-year floodplain. But, then came Harvey with almost 30 inches of rainfall over 2 days, and words like "unprecedented" and "historic" were used to describe Harvey's effect on Houston's waterways and reservoirs. According to one researcher, the probability of a Harvey-like storm producing 500 mm (about 20 inches) of rain was once in 2,000 years.

(http://news.mit.edu/2017/texas-odds-harvey-scale-rainfall-increase-end-century-1113).

Understanding geology has been at the core and will continue to be at the core of dealing with Harvey and its consequences: from monitoring local flood gauges during the storm to dealing with existing damaged structures to formulating plans for mitigating future flood events. Houston will be a living laboratory for both the science and the sociology behind sustainable living as we learn that you have to live with, and not try to tame, geological processes. Integrated earth and atmospheric studies will also be involved as investigations continue into whether the probability of such extreme weather is increasing.

Thanks to Barb Faulkner for reminding me that although my thoughts are currently on wallboard, PEX piping, tile, and my day job of technical editing, I did have two geology-related events to report on in 2017!

Cypress Creek, northwest Harris County, Texas, in its channel.

Cypress Creek, in flood, about one-half mile to the southeast of the channel.

CLASS OF 1974

Barbara L. Faulkner

I've been working as a petroleum geologist for more than 36 years, and I still enjoy geology! My career has given me some great travel and geological field experiences – some in the US, and some abroad.

One of my recent adventures was working on a joint-venture geology team in Moscow, Russia for two years (from 2012 – 2014), just before the United States and E.U. imposed sanctions on Russia. Russia had never been on my bucket list, but I'm so glad I took the assignment.

Our Russian colleagues bent over backwards to make us feel welcome.

During my flight to West Siberia to describe cores, I kept thinking of the millions of citizens who died in the Gulag forced labor camps in Siberia during the Soviet era. When I arrived in Siberia, I discovered a vibrant university town, staff members eager to help, a delightful mineralogy museum, splendid traditional Russian wooden architecture, and local guitarists playing American rock music – deep in the heart of Siberia.

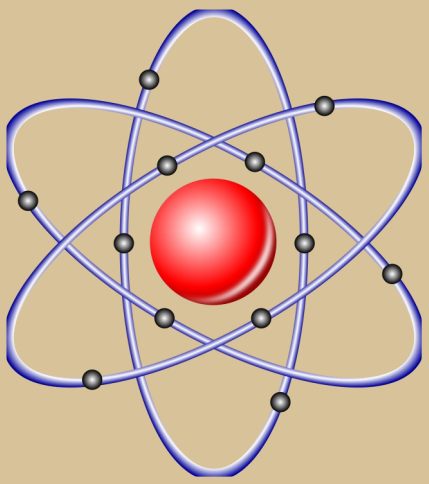
I'm now back in Houston, Texas, working on the geology of Mexico.

Last year Hurricane Harvey dumped 40-50 inches of rain on Houston in 4 ½ days. The torrential rain kept pounding on my roof. It sounded as if Niagara Falls were directly overhead. My house did not flood, but the historic flooding in other areas of Houston was truly devastating and impacted the entire community. Be sure to read Sue Duffield's ('74) first-hand account in this newsletter.

One of my nieces is a Dickinson student. She's looking forward to studying political science and history in Bologna, Italy during fall semester.

CLASS OF 1975

From left to right: John, Oran Jr, Sara, Oran III, Mary Baldwin



Sara Heller Baldwin

After a 23-year hiatus on my career to raise 3 wonderful children, I am back in the classroom again teaching Geology to college students, and loving it. I am teaching at a private Christian college in the deep South, and enjoy challenging my students (in a considerate and thoughtful way, I hope) with the evidence supporting an old Earth and evolution.

CLASS OF 1978

John Pohl

I am actively managing life, family and family business, am on the board of The Burke Museum of Natural History and Culture (Seattle), run the Board of Advisors of the Discovery in Geosciences (DIG) Program https://proxy.qualtrics.com/proxy/?url=http%3A%2F%2Fdigfieldschool.org%2F&token=cH%2BpU5YR4HtFClTfgWGNbxMt5gbrXym150gUE66uSNY%3D working with K-12 teachers and students to teach real science. I have recently become involved with the Smithsonian and work with them as well (Northwest host committee).

Over the years my wife and I have been passionate about arctic studies and have gone on many trips with the Dickinson Geology Department and students including Greenland, Gates of the Arctic and are heading up to Ellesmere Island this summer. We do a fair amount of traveling and I continue to be a photo enthusiast. I try and share these photos for the benefit of furthering education and advancing knowledge on a photo site www.Geophotography.org for anyone interested (the photos are free to anyone who wants to use it for educational purposes or who just asks) Somehow, I have managed to get a few of these in art contests, and used as public art. This is sounding a little too much for my liking, but the truth is somewhere in all this Geology helped me evolve a better appreciation for the world around us, and this seems to have guided me to getting involved in ways I can.

FYI, we have a small but growing active group of alumni in the Seattle area that helps us keep connected. Still skiing (mostly Montana), hiking and camping.

Antipodal somewhere on the pack ice north of Svalbard Lat. 80.05°"

CLASS OF 1982

Betsy Strachan Suppes

Last spring the Dickinson advancement office invited me to give a seminar on "in-kind gifts of oil and gas interests". The staff who attended were engaged and receptive. Consulting work has been steady. Interesting projects have included evaluating a woman needed an appraisal for her oil and gas rights which she gifted to a charity. They were worth over $180,000. What a nice tax write off. Another client is a victim of mineral trespass, in which the operator has drilled a well too close to his property line. Thank heavens for lawyers, as they need geologists for technical opinions. I should use one on the client that stiffed me-first time in 12 years. Now I requite an engagement letter-another good use for lawyers. Lastly, one of my 1982 classmates called me and needed an appraisal-so that is another reason to attend reunions.

It was fun to see all the classmates who came to the latest reunion. Four of us went to Wagner's gap where I waxed on about the rock outcrops. Another summer highlight was canoeing with Conrad and Sammy's Boy Scout troop down the Allegheny River from Warren to Tionesta, PA on a hot August weekend. Along the way we spotted many bald eagles, the pearly insides of fresh water mollusks, and a star-filled sky in which the constellations and the Milky Way galaxy were readily apparent without light pollution. The river journey was filled with fishing, swimming, rope swinging and more swimming. The exercise was terrific. Afterwards, Sammy had a 6-pack, Conrad was flexing his biceps and I was flexing the tube of Bengay.

Artwork by Cornelia Jensen

CLASS OF 1983

Suzanne Kairo

At the end of March 2018, Suzanne retired from ExxonMobil with more than 25 years of service. For the time being, she will remain in Houston, with her husband Glenn and daughters Hana and Kalina. Suzanne intends to stay active in geology, engaged in research, teaching and public service.

Ann Tihansky-Cannon Beach

Ann Tihansky

I am busily communicating about ocean and coastal science and resources through the USGS and the Dept. of the Interior. If you are interested in coastal and ocean science, check out these newsletters: 1) USGS Sound Waves: https://proxy.qualtrics.com/proxy/?url=https%3A%2F%2Fsoundwaves.usgs.gov%2F&token=6F5HA%2Fs3HyXoKiTLt1f%2BZU%2BWcoGMGhxMnOTqBS5Lgow%3D and 2) U.S. Department of the interior's NEWSWAVE: https://proxy.qualtrics.com/proxy/?url=https%3A%2F%2Fwww.doi.gov%2Foceans%2Fnewswave&token=CQGwVjAolvYctnEu%2B7W%2Fln26pg5ZbQgoMXlfXm3fn%2Fk%3D Or follow on Facebook: https://proxy.qualtrics.com/proxy/?url=https%3A%2F%2Fwww.facebook.com%2Fcoastalandoceanscience%2F&token=%2BJ6KsWVUWX9bFzOEy6%2FaeRP%2F0Y1RO%2BqGV%2FtQ8wWYEPY%3D

https://proxy.qualtrics.com/proxy/?url=https%3A%2F%2Fwww.facebook.com%2FUSInterioroceancoastsgreatlakes%2F&token=JlQQQfEurWStGzfe33x25uRXLLG%2BgIj7WLHNdNrQ6Ks%3D

I also work with a team to share natural hazards science: https://proxy.qualtrics.com/proxy/?url=https%3A%2F%2Fwww.facebook.com%2FUSGSNaturalHazards%2F&token=WokEQEgqdSTs5eegUKss9y6jatHuGQxwlMTeQRhoZxc%3D

It would be great to see Dickinson geologists following! Rob Thieler, I know you are out there..... ;-)

CLASS OF 1984

Nancy Jarvis Mueller

I am keeping busy with the New York's Citizens Statewide Lake Assessment Program a volunteer monitoring program run in conjunction with the NYS Department of Environmental Conservation. This year, over 400 volunteers will collect samples from about 180 sampling sites around the state. Part of the program includes harmful algal bloom (HAB) sampling, and our work has led to Governor Cuomo announcing a $65 million HAB initiative as part of the state budget this year.

CLASS OF 1985

Doug Bitterman

I have worked for the same firm for the past 29 years, rising from an entry-level field geologist doing environmental investigation work to a project and program manager in environmental restoration, environmental compliance, and facilities engineering design as well as a senior technical consultant. I also have an office manager role with responsibility for 3 offices in Virginia - Virginia Beach (my home office), Newport News, and Richmond. My firm, CH2M, was acquired by the larger firm Jacobs Engineering at the end of 2017. My oldest son is currently studying geology at Old Dominion University in Norfolk, VA.

CLASS OF 1992

Rolf Ackermann

In April of 2016 I decided to take a break from my career for a year or so. I was burned out from trying to do too much with too few resources (I was VP of R&D at a small geophysical firm in oil and gas, here in Houston). That year has drawn out to two years now. During that time, I began going to the gym and wrote a spy novel. I am unsure if I will try to have it published or not. During that time I decided to pursue a life-long dream of mine, namely going to law school. I start at the South Texas College of Law in downtown Houston in early August! I will likely focus on intellectual property law (so, patents, trademarks, copyrights, etc.), to leverage my career to date in R&D.

I am involved with Dickinson through DAVS (Dickinson Admissions Volunteer Society), conducting prospective student interviews and contacting parents of accepted students here in Houston.

I got married to John Whiteside in April 2016! We have two dogs and a cat. I keep up with my Dickinson friends through Facebook, of course.

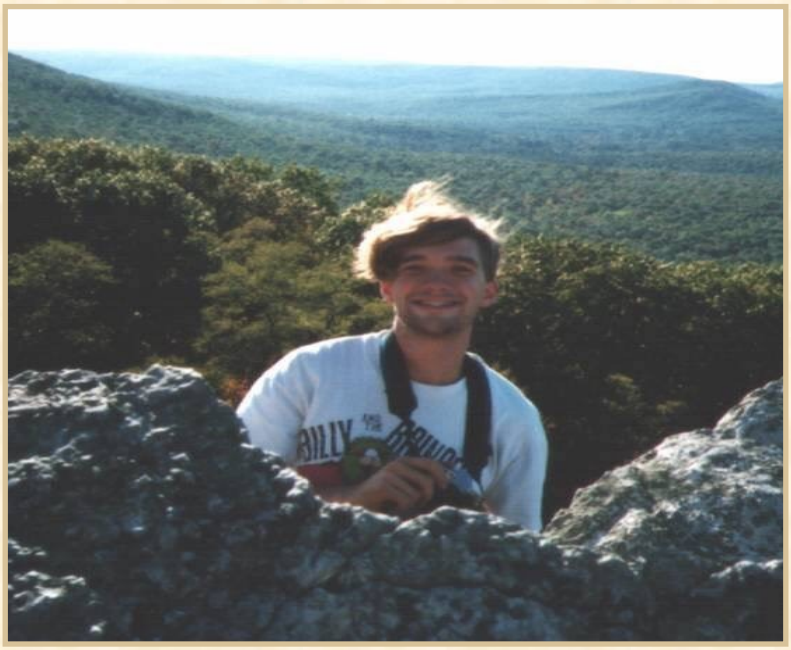
Matthew S. Baker Memorial Scholarship

Matthew S. Baker (Geology & Political Science, '92) was a true Dickinsonian: Well rounded and passionate about learning. He was involved with the Russian House and Russian Table, Geology Club, and mostly with the crew of the Mermaid Players and as a late-night DJ on WDCV. Matthew received large amounts of financial aid from Dickinson; he was the first in his family to attend college. After Dickinson, he obtained his Master's in Political Science at American University. He then moved to Baton Rough, LA to work for a Strategic Global Issues think-tank. After that, he moved to Austin, TX to work for Strategic Forecasting (STRATFOR), a global intelligence company.

Fifteen years ago this coming July, he was brutally murdered at his home in Austin over a property line. Soon after, his three best friends from Dickinson (Rolf Ackermann, Geology '92; Craig Tucker, German '92; Alyson Lighthart, Geology '92) established the Matthew S. Baker Memorial Scholarship. It is now endowed at $52K, but of course the greater the value, the more students it could help.

Please consider giving to the scholarship. You can send your check to Dickinson, with "Matthew S. Baker Memorial Scholarship" in the Memo area, or go to "Give" at the top right of the Dickinson home page. Under "Designation" select "Other" and enter "Matthew S. Baker Memorial Scholarship" in the space provided. Don't forget to check if your employer will match the gift. Thank you in advance.

-Rolf V. Ackermann, Geology '92



Matthew S. Baker (Geology & Political Science, '92) at Hammond's Rocks, South Mountain, Spring of 1992

CLASS OF 1993

Andy Judd

It's been a busy year in New Jersey! Professionally, after 22 years with CH2M HILL the company merged with Jacobs Engineering and my office moved a short distance to Morristown, NJ. I'm still in the environmental remediation division and I primarily serve as a senior technical consultant and project manager. I still get to check-in on our junior staff at project sites regularly though. I also obtained my Professional Geologist License through New York State this year.

At home, my family is settling in to a new house, still in Chester, NJ. Robbie will turn 10 y.o. and Katie 6 y.o. this summer. Jen and I stay busy mostly with the kids activities (soccer, karate, basketball, etc.) although I'm also the Chairman of the Township Environmental Commission and serve as Cubmaster and Den Leader for Cub Scouts. I'm still involved with the volunteer Search & Rescue team, although more administratively these days than technical.

Would love to hear from Alumni or current students anytime. Andrew.Judd@Jacobs.com / AndyJudd71@yahoo.com

CLASS OF 1994

Juliane Bowman Brown

I am excited to be in the second year of a PhD program at the Colorado School of Mines in Golden. After spending 14 years with the U.S. Geological Survey working on various water-quality topics, I chose to pursue my doctorate to focus on learning more about contaminants of emerging concern (CECs). I was fortunate enough to receive a National Science Foundation Graduate Research Fellowship to support most of my graduate studies. My current focus is studying the uptake of new and novel per- and polyfluoroalkyl compounds (PFASs) into urban food crops and the associated human health risks from this exposure. I also am enjoying my first semester as an adjunct instructor at Red Rocks Community College in Lakewood, where I am teaching a 4-credit class called "Water Toxicity Impacts on the Environment and Human Health." I intend to teach and mentor undergraduate and graduate students as well as continue to pursue my interest in PFASs and other CECs upon completing my PhD. Please contact me
if you are in or passing through the Denver area as I would love to connect with fellow Dickinsonians!

CLASS OF 1996

Jonathan Gourley

I am in my twelve year on the faculty of Trinity College's Environmental Science Program. I'm currently working on a local issue with prematurely crumbling concrete basements. The problem is related to the highly reactive mineral pyrrhotite that is in the concrete aggregate. My colleague and I have developed a test that will detect pyrrhotite to very low concentrations.

CLASS OF 2001

Joel Knauff

November 2018 will mark my 10-year anniversary of working for Maryland Department of the Environment. In 2017, I was promoted from Geologist III to a Geologist Lead. I continue to check National Parks off of my "to visit" list, with Olympia, Northern Cascades, Mt. Rainier, and Mt. Saint Helen, being my most recent visits. I'm hoping to visit Yosemite in 2018 or 2019.

CLASS OF 2002

Katie Tamulonis

I live north of Pittsburgh with my husband, daughter, and son. After working in the oilfield for six years, I've made a transition into academia. I am currently teaching in the Geology Department at Allegheny College in Meadville, PA, and it is lovely to work in an environment so similar to Dickinson. I had a blast reconnecting with and meeting Dickinson professors, alums, and students at the 2017 GSA meeting in Seattle.

CLASS OF 2003

Michael Snyder

I met my wife, Helena Snyder in 2007 and we married in 2013. We have a little boy name Jacob who was born in 2015.

Hope that you rock-sniffing lithophiles are doing well! Miss you all and hope to catch up at the reunions.

In the meanwhile, you are always welcome at Chez Snyder in Charlottesville.

CLASS OF 2005

Peter Enderlin

In 2008 I left the environmental consulting world and returned to school (The Ohio State University) to pursue a MS degree in Geological Sciences. The difference between a small, liberal arts school like Dickinson and a HUGE tier 1 research school like OSU was an eye-opening experience, and I quickly learned that I enjoyed the teaching and learning aspects of academia, not necessarily the research. I decided that the career that called to me was teaching. So, after finishing my MS degree, I completed a MEd degree. For the past 7 years I have been teaching a variety of high school science classes. Ironically, Earth Science is one of the few classes that I have yet to teach!

On a personal note, my wife and I welcomed Winston, our first child, into the world on September 9, 2017. He is a happy, easy baby and (at the time of this writing) I can't believe that he is already 6 months old!

CLASS OF 2006

Matthew Nogier

Project Manager, ERM

Justin Dahlin

Hello Dickinson College/Geology,

The newsletter populated in my personal email and felt it was a great opportunity to share what I've been doing all these years. I graduated from Dickinson College in 2006 with an BS in Geology. There I met my wife Alexis Butcher-Dahlin (class of 2007) and we currently live in Philadelphia, PA along with our 2yr old daughter (Alexandra) and our soon-to-be son (George) expected in June 2018. Both of us have treasured our Dickinson memories, but also still value the educational experience and wonderful friendships we've maintained over the years.

I'm sad to report that I am no longer in the Environmental field, but have made a positive transition into High Education along with my wife. Alexis is currently the Catering Manager at Haverford College and I am the Associate Director of Graduate Admissions at Drexel University. I've worked in enrollment management for over eight years now and haven't looked back. We've been given a great opportunity to further our education, become socially involved, meet wonderful new people and maintain a productive family life. All thanks in part to Dickinson College.

I wish all the administration, faculty and students well.

Best regards,

Justin E. Dahlin

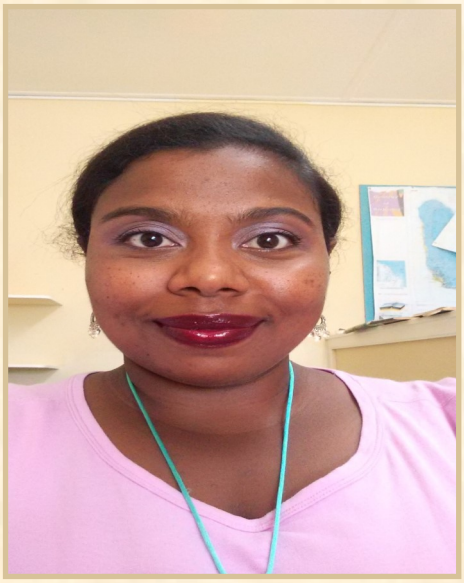
CLASS OF 2006

Camille Carter

After an 11 year run at AECOM (formerly ENSR, formerly RETEC), I made the switch in 2017 to GEI Consultants. I'm enjoying working on the cutting edge of LNAPL remediation science with oil and gas clients all over the world.

I've been in Fort Collins, Colorado for the last 5 years, and I'm very happy running around in the mountains with my two Siberian huskies - only 27 of the 53 Colorado fourteeners left to climb! Erik and I love traveling and the outdoors, and most recently made the trip to hike Mt. Kilimanjaro.

CLASS OF 2020



Alexanda Selene Jarvis

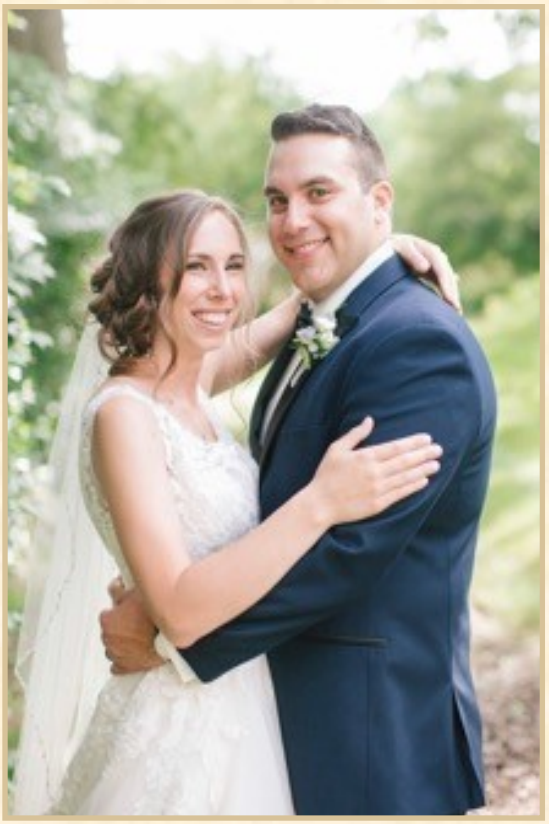
Hello Geology class of 2010, faculty and staff! What have you been up to? Since leaving Dickinson I have had the privilege to work in various countries including Abu Dhabi and Dubai, back home in Trinidad and Tobago, in South Carolina, USA, Jamaica, Guyana and Barbados. Have also visited many more countries including Kenya where Atandi Anyona also class of '10 of Environmental Sciences lives. I even managed to pick up an MS in between. It's been a well-used 8 years and I look forward to what is in store for me still. No kids and no husband... but, as you can see, I am enjoying the single life to the fullest!

CLASS OF 2013

Marc Baumann

My wife, Ashley Fields Baumann '13, and I were married in July 2017 in Morristown, NJ. We are expecting our first little Red Devil, a baby boy, this spring.

After working in the environmental consulting industry for the first 4 years after graduating from Dickinson, I made a career change and joined Greek Development, Inc. as an Assistant Project Manager. At Greek Development, we are an industrial real estate developer and general contractor. We build large industrial warehouses, cold storage, pharmaceutical, and manufacturing facilities in New Jersey and Pennsylvania. I am thoroughly enjoying my new role in the real estate development/construction world.



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WE WANT YOU!!!

- Has your Dickinson education landed you the perfect career?
- Are you excited to tell people about projects you are currently working on?
- Are you involved in cutting edge work?

If you answered "yes" to any of these questions, the Earth Sciences department would love to have you back to campus to speak with our current majors.
If you would like to share your wisdom, knowledge and experiences with our students, please contact Alyson Thibodeau at thibodea@dickinson.edu