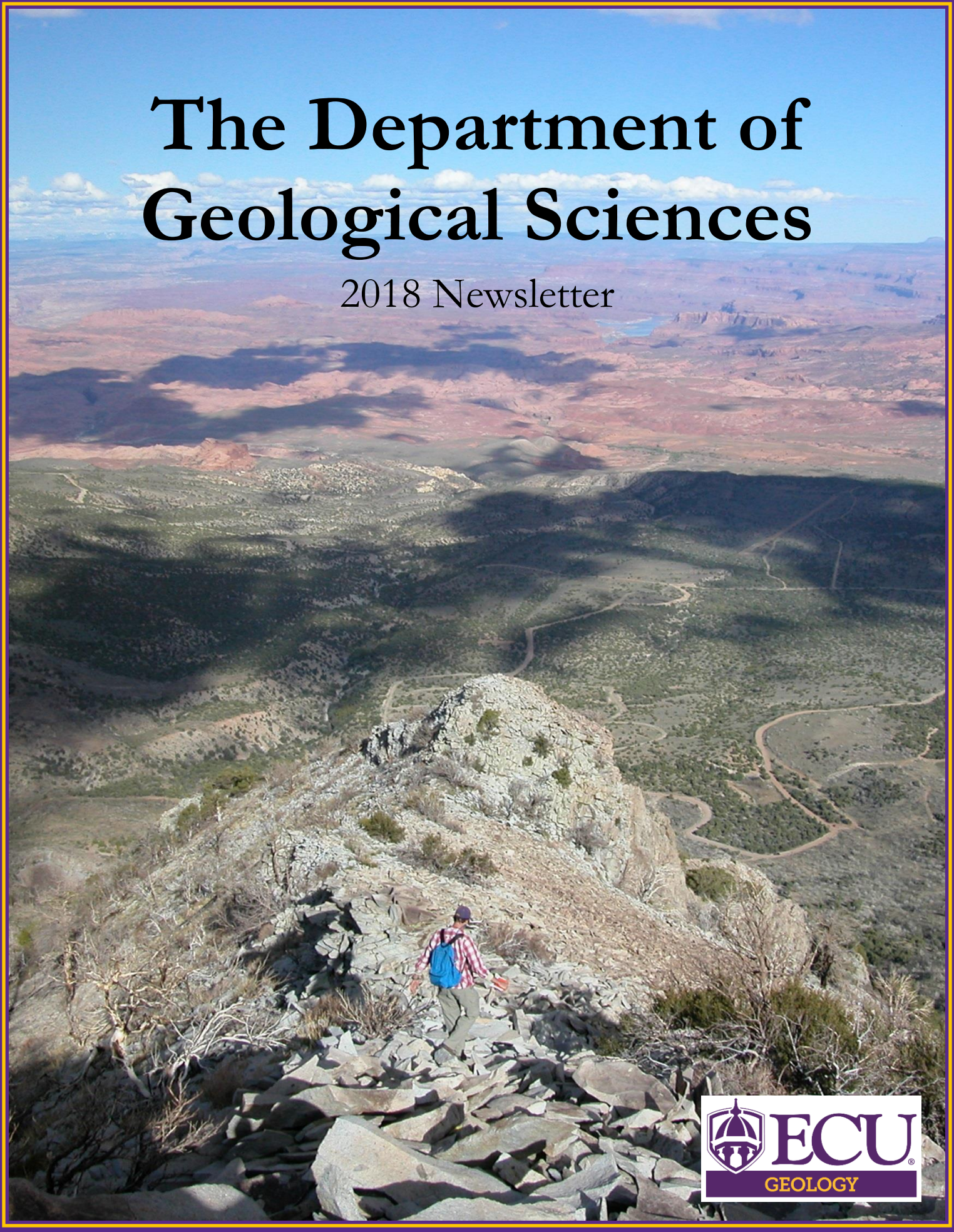
The Department of Geological Sciences

2018 Newsletter



ECU GEOLOGY

Table of Contents

We would like to give a special thanks to all those who contributed and made this newsletter possible.

Advisor: Dr. Stephen Culver

Editors: Seth Sutton

Matt McDaniel

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"We travel not to escape Geology, but for Geology not to escape us."

~Adapted from Anonymous

A Word from Our Chair

HELP SUPPORT FIELDWORK!

Fieldwork! That is one of the themes for the spring 2018 Newsletter. I remember in great detail the day, 58 years ago, when I collected a huge rugose coral from a roadside quarry in Carboniferous limestone in Lancashire, England. The thrill of fieldwork, the uncovering of the unknown, is still with me today whether it be in coastal North Carolina or coastal Malaysia.

In this Newsletter, students in our department, both undergraduate and graduate, describe their experiences in the field. Many of them discuss the summer field course in Colorado and New Mexico, a formative experience today just as it has been for all of our alumni for 50 years. For others the subject is course-related field trips where students first cut their teeth in all areas of basic geology. Although the department's operating budget is nowhere near what it was a decade ago, when funds are allocated the first thing we do is set aside the monies needed for each of our required course-related field trips.

Attending the summer field course costs quite a few dollars. In a few years' time, the interest from the VanGundy endowment will be helping ECU students go on this grand adventure. If there are alumni out there interested in giving back to the department, you might want to consider setting up an endowment similar to the one that Bob VanGundy so kindly started a couple of years ago. Give me a call at 252 328 6010 to discuss!

I end this message by recognizing the amazing efforts of Steve Harper who will be teaching his last field course this coming summer. I thank J.P. Walsh, who has moved on to the University of Rhode Island, for his amazing productivity and comradeship over the past decade. John Woods retired last year and left a huge hole in our capabilities. We welcome Marah Dahn who has taken on the really tough job of following John - we wish her well. Finally, I thank the team of undergraduate and graduate students who contributed to and put together this Newsletter. They do a great job every year.

Steve Culver,

Chair of Geological Sciences

January, 2018

Department Graduation Recognition Ceremony:

Noon Friday, May 4, 2018
Willis Building (1st Street)

A large group of students will be graduating this semester, or in the summer, from our BS, MS and Certificate programs. Graduating students are invited to attend the big ECU Spring Commencement ceremony on the evening of May 4th.

We will also have a departmental Graduation Recognition Ceremony, at noon on the 4th. Spring and summer graduating students and family members are being invited to this new departmental celebration. There will be plenty of photo opportunities with family, faculty and friends. Graduating students and faculty members will be in full academic regalia.

Congratulations, in advance, to all graduating students!

Annual Pig Pickin'

Please join us for our Annual Pig Pickin'!

Food, drinks, music, and games provided. Bring your own fun!

Saturday, April 28th, 2018 at Noon

Please contact the main office for directions at:

Phone: 252-328-6360

Email: westk@ecu.edu

Announcement

"What a long-ago episode of global warming says about our future."

Dr. Scott Wing, Department of Paleobiology, Smithsonian Institution.

Distinguished Visiting Speaker

Department of Geological Sciences 50th Anniversary 2017-2018

Presentation, Friday April 6th, 4pm, location TBD.

Alumni are welcome to attend the presentation and the following reception (with buffet dinner) at Myrtle Grove Plantation, 4226 NC-43, Macclesfield, NC 27852.

Please inform Steve Culver (culvers@ecu.edu) if you plan to attend the presentation and/or the reception so that we can get an accurate headcount.

Scott Wing is Curator of Fossil Plants at the National Museum of Natural History of the Smithsonian Institution. He was born in New Orleans, Louisiana, and grew up there and in Durham, North Carolina. He received his B.S. in Biology from Yale University in 1976, and completed his Ph.D. in the same department in 1981. Following graduate school Wing was a National Research Council Postdoctoral Fellow at the U.S. Geological Survey in Menlo Park, California for one year, then a Geologist working for the U.S.G.S. for an additional year. In 1984 he moved to the Department of Paleobiology at the Smithsonian Institution as a research scientist and curator. Wing's research focuses on fossil plants, how climate has changed in the past, and how ecosystems have responded to climate change. He has long worked to uncover the causes and effects of the Paleocene-Eocene Thermal Maximum, a sudden global warming event 56 million years ago that has many parallels with current, human-caused changes in the atmosphere and climate. Wing has also researched the deep-time origins of tropical rainforests, and the paleoecology of flowering plants during the last part of the Age of Dinosaurs. He holds adjunct or honorary positions at University of Maryland, University of Michigan, and the Florida Museum of Natural History, and is a Fellow of the Paleontological Society and the Geological Society of America. Wing has been involved in many exhibits and public education projects, and is currently one of the core team planning the complete renewal of the Smithsonian's galleries on the history of life, a six-year-long project that will create +30,000 ft2 of new exhibitions.

A Big Thank You

I was born in the western part of the mountains of North Carolina. I moved to eastern North Carolina the summer of 1995. I have two brothers and two sisters. I was married for almost 16 years until I lost my husband to cancer in 2015. I have a son who is turning 25. I have only two more courses to go to get my online Bachelor's Degree in Criminal Justice at Ashworth University, Georgia I have been working with East Carolina University in the Housekeeping Department going on four years this November 2018. I currently work in the Howell Science/Physics Department, and the Geology building. I love all the students and staff here at East Carolina University, especially those in the Geology Department. Just to name a few of the students and staff in the Geology department who have made me feel at home: Seth Sutton, Amy Cressman, Laura de Sousa, Cody Allen, Tanner Eischen, Matt McDaniel, Paul Mays, Allison Murrie, Dr. Culver, Dr. Spruill, Dr. Corbett, Dr. Walsh, Dr. Harper, Dr. Woods, Kim, and Lauren. I have just named a few but all have made me feel welcome here. I could not ask for a better bunch to be around. Thanks for making me feel as part of the team. I love each and every one of you here in the Geology department. You guys are the best and I want you all to keep up the hard work you guys do. Be proud of who you are.

~Janice Stancill

Why do you want to be a Geologist?

I have always been curious about science. The reason I chose to become a geologist happened in 2014. I took Geology 1500 with Dr. Richard Spruill. His method of teaching and helpfulness throughout the semester really intrigued me and encouraged me to learn more about geology. Sometimes I would even go to his office to discuss the subject further. My goal in becoming a geologist is to work in the coastal environment, more specifically in the hydrology sector. This really sparks my interest because there will always be a demand for expertise in hydrology. This kind of work is also helpful to communities where water supply and management can be an issue.

~Jacob Eslinger

Hi, I am Ashley Lynn and I am from Virginia. Growing up, I always enjoyed science and mathematics. As I progressed through my early education, I knew I wanted to work in a scientific field. By my senior year of high school, I had decided on attending East Carolina University. Originally, I wanted to get a degree in geology to work at the U.S. Army Corps of Engineers- Field Research Facility in Duck, North Carolina. Now, being a junior, I have learned that there are many more opportunities available with a geology degree. Geology is a strong passion of mine and I have been lucky to learn from the best professors and work on undergraduate research within the department. I look to further my education and have a lifelong career in geology.

~Ashley Lynn

I'm a senior and majoring in Geology. Geology was not my initial major when I began attending East Carolina University. My freshman year I took "Intro to Geology" taught by Dr. Campbell and I quickly fell in with the subject. Since changing my major I have had some of the most amazing experiences and have been able to study a subject that I truly care to learn about. I want to be a geologist because is like having a superpower being able to look at a rock and explain the process that took place at a time before I was even a thought. As a geology major I have gained the knowledge to do that and so much more. I want to be a geologist because I am able to understand as well as do more things than I could in any other field.

~Greg Grissom

Why do you want to be a Geologist?

I am a junior here at East Carolina University. I was originally an environmental engineering major, but I switched over to geology the second semester of my sophomore year. I would like to use my geology degree to help get a job with renewable energy. I have always been interested in new ways to produce and store energy, and with the current depletion rate of our nonrenewable resources on earth, I couldn't think of a better career choice.

~Jeremy Cronin

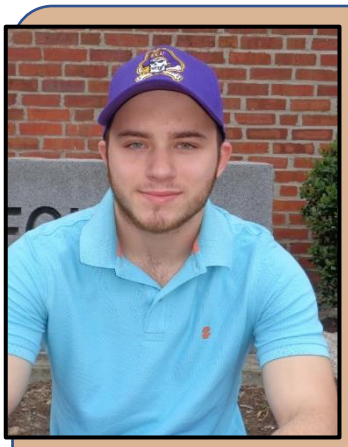
This is currently my junior year at East Carolina University. I fell in love with geology during my time at ECU. Geology has been a major driving force in my young life. I have many fond memories of my friends and professors during the many weekend field trips that have given me the real-world experiences that one needs in order to become a fully-fledged geologist. Geology is in my blood it will forever be a part of my life. If I had to choose again I would definitely take the same path.

~Nicholas Ali-Martinez

I chose geology as a major and a career path based on my enjoyment of working in the environmental consulting industry. My family has worked very hard to start and grow their own environmental consulting firm. As a result, I practically grew up around the industry and found a fascination and enjoyment working in this field. For me to continue the family business and to further my potential success in the consulting industry I had to choose geology or engineering as a major. I chose geology because I enjoy understanding my environment and the processes that shape it. Plus, the people in the geology department are pretty cool too.

~Evan Pollard

Why do you want to be a Geologist?



Hi, my name is Bobby Vaughan. I am a sophomore and a Geology major on track to graduate in four years! I came into ECU with intentions on majoring in Geology but just kept an open mind because, truthfully, I did not know what I was getting myself into. But from my first class with Dr. Harper I knew I would love this major! Then in my first Geology lab when we were handed several different specimens like obsidian and basalt I truly was hooked. I am now in Minerology and Petrology with Dr. Spruill and it is so much fun. Whether we are looking over different specimens of igneous rocks to learning a couple dozen minerals it is always fun learning new things and physically being able to see them. This does not mean that it is easy, but I believe the enjoyment of the class and the caring atmosphere throughout the building keeps the passion alive. Since I am only a sophomore I do not know everyone yet but no matter who comes into our class they always are more than willing to help me with anything from crystal systems to modal analysis. To me that kind of support system within the department has inspired me to want to further my education within the geological sciences and later in life spread that joy and knowledge with younger people. This thought of teaching Geology has become stronger and stronger the more I see the enjoyment of teaching on my professors' faces throughout the day in Graham. With this in mind I plan on graduating and possibly working in hydrology for a few years then going back and getting a teaching degree. I hope to inspire some students like my professors are inspiring me now and I intend to communicate the excitement that provides a welcoming light to the sciences.

~ Bobby Vaughan

I'm a sophomore Geology major at ECU. Since I was a child, I've loved the outdoors and have had a passion for learning about the Earth. I came to ECU as an intended Nursing major, a decision I made under the influence of my parents and financial goals, but after seeing a flyer for Geology, I contacted Dr. Harper and ended up switching majors that very day. This is probably the best decision I've ever made for myself. After taking only six Geology classes thus far, I'm absolutely hooked. I find myself more interested in what I learn in my Geology classes than anything else I've learned in school. I even enjoyed the quantitative Geology class (math is my least favorite subject). Even more so than the classes, the teachers in the department are truly stellar. I love how small and close-knit the Geology department is in comparison to the rest of ECU. I love walking into the Graham building every day to remarkable professors who are always eager to help, and tons of friendly faces of both graduate and undergraduate students.

After college, my plans are a little fuzzy. I really want to get my master's degree to continue studying geology. As far as what kind of job I want, I'm still thinking about it. I know I want to go into environmental geology, I want to work somewhere where I can travel and help make a difference in our nation's environmental footprint. I'd be open to a variety of positions but it's important to me that whatever I do is helping the environment and encouraging others to do the same.

~Ann Marie Lindley

Why do you want to be a Geologist?

Being a non-traditional full-time student can be exhausting. Being a non-traditional full-time student with a disability can be exhausting and onerous. Unless a person is fortunate enough to have an academic support system that is truly dedicated to the advancement of all its students, it is easy for students who need a little more assistance to fall through the cracks. My name is Felicia Edwards. I am a 38-year-old undergraduate geology major. I am also a visually impaired person that finds herself surrounded by a competent and caring faculty.

To say that my experience with the East Carolina University Geology department has been as dynamic as the Earth itself is no exaggeration. I have accumulated an ever-evolving wealth of knowledge about our Earth and its processes from the instruction and training received from the department. I have been exposed to a wide range of teaching styles. From the repetition in class used by Dr. Richard Spruill that fosters learning through memorization, to the thought provoking questions asked by Dr. Richard Miller in his use of the Socratic teaching method, to the real-world experience gained from fieldtrips with Dr. Stephen Harper. The department offers a diverse curriculum that students of all learning styles can thrive in along with a host of accomplished professors and capable teacher's assistants like Allison Murrie willing to do what it takes for the success of their students.

To me the study of geology is fascinating. After learning some of Earth's secrets I started to think differently. An understanding of geological time gave me a new appreciation of how precious my short time on this planet really is. An exquisite gem is even more breathtaking now that I have an understanding of how unique its chemistry is. A new-found respect for the planet as a whole encourages me to live a more ecofriendly lifestyle.

I have learned so much from my studies with the Geology department at East Carolina University. I hope to continue my academic journey here, so that one day I too can teach and help usher in our next generation of geologists.

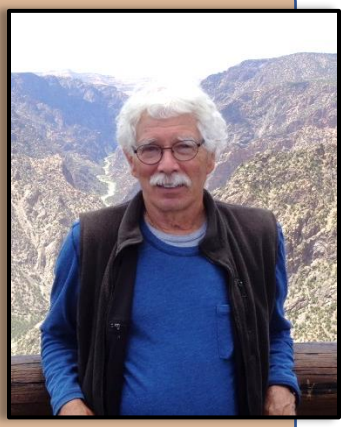
~ Felicia Edwards

We Mustache about Field Course

From left to right: Eric Horsman, Richard Spruill, and Stephen Harper, with their glorious mustaches.

Dr. Stephen Harper on ECU's Field Course

Interview by Lily Howie



Dr. Stephen Harper has been the director of East Carolina University's Geology Field Course since 2005, when Dr. Richard Mauger stepped down as the previous director preceding his retirement. But Dr. Harper's involvement with ECU's field course goes far beyond his years as director. What is now ECU's field course had its start in 1965 as a field course through UNC Chapel Hill, where Dr. Harper attended as a student in its fourth year and went on to TA in subsequent years. In 1980, ECU's Dr. Richard Spruill collaborated with faculty at Chapel Hill to form the UNC-ECU field course. Within a few years, it had expanded into a UNC-wide field course where UNC Wilmington, UNC Charlotte, Appalachian State, and NC State all collaborated and contributed financial resources. Unfortunately, within about 15 years, funding for the course began to dwindle and different schools began to disagree on key points of the course. Dr. Harper began assisting Dr. Mauger with the course in 1999, and by 2005 when he took over, only ECU remained as the participating university. This led to a major change in 2010, when ECU's field course went to an "off-funding" model. With this new model, the course was funded solely by student participants rather than using money from state taxpayers. This allowed out-of-state students to participate without paying extra fees, but it also meant that student enrollment was a major factor in funding the course. Dr. Harper has described the success of the course as "corresponding with the national boom of geology students," stating that not only do students from other UNC schools attend, but that participants come from a variety of out-of-state schools such as James Madison, Virginia Tech, University of Pittsburgh, and Temple University. "If you'd asked me in 1999 if I thought I'd still be doing this, or if you asked me when I was a student in 1968 at Chapel Hill, I never would have thought [so]," Dr. Harper said, "but things just kind of bounced along. I've always enjoyed doing it, but it's a lot of planning and a lot of work year-round that most people don't realize. I'm pointed toward field course all year round, but once January passes, it's like a telescope- it gets narrower and narrower, all the things that have to be done."

We Mustache about Field Course

Lily: Do you always go to the same places?

Harper: "Mostly. It's just so much work to develop; it requires going out there [and] there's no funding for that, so we may tweak it a little bit. For example, we went to Gunnison for a long time, I moved it to Durango for about three years and then decided- for a couple reasons- to go back to Gunnison. I liked the [Durango] projects better, and the lodging situation that allowed us to still cook some of our meals in the evening was another reason, but if it's a long winter and late spring, part of the project areas- or at least one of them- is still under snow, which is *not good*. In Gunnison that's not been the case, so we've been back at Gunnison for two years and are going back this year, although we are staying at yet another place in Crested Butte. We still go to Great Sand Dunes, we go to Bandelier National Monument, and sometimes we've gone to Chaco Canyon and Mesa Verde, but it's not on our way anymore. We also go to Creede, Colorado and look at a bit of hard rock mining, and Black Canyon of the Gunnison, which is another National Park. And we see a lot of volcanic rocks but do not actually map any of them."

Lily: Do you have any memories you'd like to talk about, or maybe just general things you like doing with the students?

Harper: "I like the contact; being in the field, you learn a lot about people that you wouldn't learn back in your geology building, a lot of interesting things. I think the fact that we've been able to accept a lot of visiting students gives our course a very diverse nature. Students, in addition to learning from faculty, also learn from other students. Our course is still very traditional: it's primarily a bedrock mapping course. There are other models out there, or hybrid combination[s], but it's the only opportunity that a lot of students will ever [get to] do any mapping, no matter what type of geology job they take. I think it's a very important skill, when you use other people's maps, to appreciate the kind of work that went into it and potential sources for error and bias. And I think our students, both visiting and ECU, speak very fondly of our field course."

Lily: Is there any advice you would give to students who are preparing to go on field course?

Harper: "To read my list of things you need to take, which is on the website. And always wear two pairs of socks. (*laugh*) But, really, to be ready for a unique experience, a kind of experience that [is] maybe not *the* most important, but an experience of a lifetime. Some of the people you will meet, other students you haven't met before, will become lifelong friends [and] maybe colleagues since you're both pointed in a geology direction. I still contact- I'm not really close- with three people I went to field course with in 1968. That was a long time ago, and that was before Facebook and other social media. And I still hear from or run into at national meetings people who went to field course years ago; not with me but since I've been teaching and co-teaching it in the last 20 years or so."

My Field Course Experience

I have participated in the North Carolina Geological Field Course (NCGFG) as a camp manager for the summers of 2006, 2007, 2012, 2013, 2015 and 2016. I went as a student during the summer of 2010 as a requirement for completing my B.S. Geology degree. I consider myself lucky to have been able to participate as a camp manager for so many summers. Field course has instilled in me invaluable experiences and ultimately has led me to the educational and career goals I hold for myself today. Being able to experience geology in the field is incredibly important to gain a meaningful understanding of the field of geology. NCGFC literally transports you from the text book to real-life examples that you can see, touch, measure and study. Having this experience has enabled me to gain employment in an area I otherwise would not have been able to achieve.

I have been lucky enough to form friendships and connections with people I would otherwise not have ever met, as students from across the country and the globe come to NCGFC. Some of my fondest memories were formed during my time with NCGFC and I was able to discover my most favorite place in North America, which is Sipapu, NM. Just to glance at the serenity and beauty of Sipapu would be enough to convince me to go back. The place is straight from a fairy tale, with its rustic ski lodge and enormous pine trees, it even has a river running behind it and countless trails to explore in your free time.

If I could say one thing to anyone interested in going to NCGFC, regardless of whether or not it is a requirement for graduation, I would urge them to go. Not only will you receive the hands-on experience required for employment but you will also get a chance to experience breathtakingly beautiful landscapes and create lasting memories of your own.

~Sam Kofroth

Anyone who has been to the North Carolina Geology Field Course will tell you that it is an experience that they will remember for the rest of their lives. The remarkable scenery, the invaluable field education, and the strong friendships that are built all make field course an unforgettable experience. I was fortunate enough to go to field course twice, once as an employee and once as a student. In 2015 I was an assistant camp manager. During my first semester at ECU I took environmental geology and the geology intro class, both of which were taught by the Dr. Harper. Towards the end of the semester he asked me if I wanted to go to New Mexico and Colorado for six weeks and work as a camp manager at field course. I had about two weeks to prepare. When we left for New Mexico he was the only person that I knew. I worked alongside Sam Kofroth, a seasoned camp manager, and we were

My Field Course Experience

essentially attached at the hip for the next six weeks and still are to this day. The job of camp manager entails preparing meals for the students every day, buying an absurd amount of groceries every day, and just making sure that everyone has everything that they need to be organized, safe, and successful at field camp. Our days started at 5:00 every morning, well before anyone else was up, and ended after dinner was cleaned up and put away. We worked long hours every day but still had a lot of fun. We took the time to do things for ourselves like hiking, shopping, visiting ghost towns from movie sets, and horseback riding through a canyon.

The following summer I went to field course as a student which was a much different experience from that as an employee. This time I was there with all of my friends from school, including Sam. I spent six weeks hiking through New Mexico and Colorado among some of the most beautiful scenery I have ever seen, some of which doesn't even seem like it could be on the same planet. I was lucky and always had a good field partner which is essential for field work. It still amazes me when I think about how much I learned. That year has been dubbed by me as the year of the snake. We saw two rattlesnakes around our campsite and I stepped on two snakes in the field. On our days off everyone spent time exploring really cool places like Taos, NM, the art hub of the southwest, and Crested Butte, CO, an adorable mountain town. We also went horseback riding again, which has become my favorite desert activity. Roughly half of the students were from ECU and the other half were from all over the country. After the first week, it was as though all of us had known each other for years. Most of us still keep in contact with each other even though we are all so spread out now. Because of my two field course experiences I have several new friends, a best friend, what are without a doubt some of the best memories of my life, and oh yeah, I learned how to be a real geologist.

~Amy Cressman

My Field Course Experience

My field course experience allowed me to apply my understanding of geologic concepts and develop a working understanding of how field geology works. From this experience, I was able to not only deepen my pool of knowledge of geology but also generate connections between me and other professionals in fields I am interested in.

Academics aside, this field experience allowed me to make meaningful friendships and provided an opportunity for me to become more passionate in my field of study. The field course was the most memorable college experience I have had in my undergraduate studies and I believe it is a rite of passage that all geologists should undertake.

~Cody Allen

I was naturally a little uneasy about being on the other side of the country for a month and a half. I wasn't quite sure how I was going to fare with being around everyone else for such a long period of time. It really took some adjustment at first, but I can honestly say field course was a real eye-opening experience for me. Field course gave me more than just experience out in the field. It gave me an understanding of how to interact with others and helped to forge new friendships.

One of my favorite parts about field course was being able to see geological features that you wouldn't see here in North Carolina. My favorite field exercise was in San Ysidro, New Mexico: a beautiful anticline and syncline complex. That was, overall, my favorite location to both map and take in the incredible geologic beauty.

The faculty and staff during field course were absolutely fantastic. It was quite enjoyable to have faculty from different backgrounds to give us information and feedback. The TA's were also super helpful because they too have experienced field course as students. All of our struggles and frustrations were put to ease by their help. We were also fed like royalty by the camp managers!

Based on my experience, I would love to go back to New Mexico and Colorado to revisit the sites that we mapped. I am very thankful for the opportunity to experience ECU's Geology field course.

~Laura de Sousa

My Field Course Experience

I received my undergraduate geologic education in the UK at University College Swansea, University of Wales from 1970 to 1973. Field experiences were an important part of my education. We did not have a six-week field course like the one we teach at ECU. Instead, each of us had to complete a six-week independent mapping project. We were able to help choose the places we wanted to map. So, five of us, three men and two women, went to one of our paleontology professors and told him we wanted to go to the south of France. He had no problems with that (he wanted to go there too) and so we prepared for our trip in summer 1972.

I was the only one of us to own a car. Believe it or not, it was a pale blue and white Ford Anglia exactly like the one in the Harry Potter movie. Mine did not fly. In fact, I had to put it in third gear to get up any sort of hill; it had a 997-cc engine. So, we had to figure out how we could get the five of us plus our gear from South Wales to the Montagne Noire in southern France, about half way between the Pyrenees and the Massif Central. Our solution was to buy a suplussed ambulance from the Glamorgan County Council.

After a slow but uneventful drive from the UK we camped in a huge surplus army tent on a camp site in the small and friendly town of Bedarieux. Every day we ventured out to our field areas and each mapped one of five adjacent 50 sq. km rectangles in the core of the Montagne Noire. We did it alone. Nobody thought about health and safety back then. I left my colleagues at 8 in the morning and we met up again at 5 in the afternoon. In between we hiked in quite severe terrain, mapping as we went. If any of us had twisted an ankle or broken a leg there would have been no alternative but to crawl back to a meeting point, if you could. There was no GPS and there were no cell phones. We just had a base contour map and a compass.

I had a couple of worrisome experiences. Once I was walking along the side of a tiny road back to my car. Thunder clouds rapidly grew in the sky and so I started to run to my car a mile or so down the road in an attempt to beat the rain and lightning. A car came fast around a blind bend and I had to take evasive action. In doing so I tripped and fell and face-planted in the gravel at the side of the road. I bled copiously from nasty gravel-filled wounds on my face, arms and legs. To this day I could show you a piece of French gravel embedded permanently in the heel of my left hand.

My other experience was worse. I was walking quietly along the edge of a vineyard. I was a little nervous because there was wild boar in my field area and I wanted to ensure I didn't disturb a sow and her offspring that had been reported in the area. So, I had my hammer at the ready in my right hand. As I walked past a large tree at the boundary of the vineyard I heard this horrible angry rattling sound that I had never heard before. A huge insect flew out of the tree (I now know it was a cicada but back then I had never heard of them let alone seen one) and it commenced to dive- bomb me.

My Field Course Experience

I batted at it with my left hand. I thought maybe it wanted to bite or sting me – I had disturbed a nest of bees a few days before and had to sprint away from them, so I was pretty nervous about insects as well as pigs! The thing kept after me so, without thinking, I waved at it with my right hand, forgetting I was holding my hammer. If you've ever hit yourself on the leg, like I have done, with a geologic hammer, you know how much it hurts. Well, it hurts more to hit yourself in the side of the head. I slumped to my knees and almost passed out, either from the pain or the impact. It took a while before I came around enough to struggle to my feet. I realized how lucky I was. I had a hard-rock hammer rather than a chisel-ended soft-rock hammer. I had hit myself with the hammer end. If I had been holding my hammer the other way around I would have stuck the pick end of my hammer into my temple – and I wouldn't be writing this little article today! Health and safety training and guidelines are good things! The cicada was unharmed.

This field experience was formative for me. To this day, I start my undergraduate Paleontology class describing a large hill/small mountain, the Pic de Vissou, in my field area. Climbing up it on my first day in the field I collected fossil brachiopods from the several lithologic units I crossed. I knew enough about brachiopods to recognize that basal Ordovician shale was overlain by Carboniferous shale followed by Devonian dolomite and, once more, by Ordovician shale. In other words, the upper part of the mountain, the section above the basal Ordovician shale, was upside down! If I had not had this insight at the start of my mapping I would have really struggled to understand the structural geology of my field area. But I realized that the Pic de Vissou was the key to the fact that I was looking at the eroded remnant of a nappe formed by a push from the uplifting Pyrenees to the south.

I'll finish this reminiscence with another health and safety story. At the end of the six weeks of mapping I drove alone back to the UK to take up a summer job as a bus conductor. My mapping colleagues had the time to tour around the foothills of the Alps on their meandering way home. The ambulance had a bench seat in the cab that held three people. So, at any time, one of my friends had to sit in the back of the ambulance on a bench designed to hold a stretcher. But that meant that the many rock specimens that we had collected for later thin-sectioning were all piled on the other side of the van. Alpine roads have lots of corners and on one corner the van leaned over and the weight of rocks on the outside meant the lean continued until the ambulance left its wheels and rolled. As it rolled, the rocks flew to the other side of the van and peppered the unlucky occupant. She was OK but quite badly bruised. The van was righted by a group of people who had seen the ambulance crash and stopped to help. I'd never thought about it before, but even ambulances can hurt you! My friends drove back to the UK in a vehicle that looked like a parallelogram from the front or back.

~ Stephen J. Culver

Our Time in the Department

My experience at East Carolina has been an absolute pleasure. I've been blessed to work under the direction of fantastic, worldly mentors on a captivating project. Through my classes I've gained the knowledge and experience that will allow me to compete on an international scale. I'll always fondly remember my professors as being paramount in the expansion of not just my skills, but in the expansion of my own personal horizons. Though my time working in the Graham Building is coming to an end, I've been motivated by these next-level people around me; my advisor, professors and friends, to never stop learning. It's not over, it's just getting started. Looking back, I wouldn't have done these past two years any other way.

~Brett Pertunen

While in the Geology Department at ECU, I have gained many new insights in the way that I do research. It was hard, fulfilling work and I can never understate the importance of communication with my advisor and mentor, Dr. Dave Mallinson. Most of all, I enjoyed the family of graduate students we have. We spent so many hours working together, complaining together, and hanging out together; especially when we go to Christy's for lunch or dinner after a hard day. It is that family I am proud to be a part of and which I will miss most after graduating.

~Brian Querry

During my time in the Department of Geological Sciences I have been lucky to experience unique opportunities to learn science concepts outside of a classroom setting. I appreciate these opportunities to use the "tools of the trade" as part of many classes. While my graduate school experience as a commuting, part-time student has been a little different, I have gained much from the time spent in Greenville, and the relationships created with faculty and other students.

~David Sybert

Our Time in the Department

My time at ECU has helped me to grow and learn about myself as a scientist and as an adult. Through the struggles, I have learned how to better manage my time, how to conduct research, and how to solve problems. I have had opportunities to travel to conferences and assist with field work in disciplines other than my own. I have truly enjoyed my time at ECU thanks to the support I have received from my advisor, Dr. Adriana Heimann, other faculty, and my fellow graduate students. Among the graduate students I have made friends to last a lifetime.

~Tiffany Cummings

My time in the department has been far more rewarding than I would have ever imagined. By taking classes in a variety of geological topics, conducting research, and teaching classes, I've stepped out of my comfort zone and have learned so much these past two years. I'm grateful to have been given the opportunity to continue my education here with a close-knit group of faculty and students, who have undoubtedly had a lasting impact on my life.

~Allison Murie

My time as a geology graduate student has flown by, but I have made so many memories in this short amount of time. Working with Dr. Eric Horsman has been incredibly rewarding, and I feel like I learn something new every day. The faculty are supportive, and I have never doubted their belief in any of the students here. I've also been able discover a passion for teaching, something I had never dreamed would happen. Since my first day as an ECU student, I have felt like nothing less than family among the Department of Geological Sciences, and I do not know where I would be without this family.

~Matt McDaniel

Our Time in the Department

As I anxiously wait to hear back from the three Ph.D. programs I have applied to, it has given me time to reflect on my past two years here at ECU. Research with Dr. Culver and Dr. Mallinson has been an adventure, from late summer nights in the micropaleontology lab to fleeing an impeding storm on Bear Island, they have helped me pursue my passion of becoming a professor. They have given me an unfathomable amount of knowledge and direction as I navigated graduate school. Coming to ECU has allowed me to explore; I have had the opportunity to TA the summer field course, assist my colleagues with their fieldwork, identify thousands of foraminifera, and check going to Seattle off my bucket list. The research, skills I have learned, and connections I have made at ECU will contribute greatly to my future in academia; pursuing my passion to teach and conduct research.

~Nina Shmorhun

Pursuing a Master's degree in Geology at ECU is an experience I will never forget. I have made extremely close friends, worked with incredibly brilliant professors, traveled to beautiful places, and gained invaluable knowledge about our planet and its processes. This department has taught me that hard work and patience are key to achieving my goals, and for that, I am thankful!

~Mike Twarog

It seems like just yesterday I was driving into Greenville for the first time all the way from South Dakota ready to start my master's degree here at ECU. These last two years in the Department of Geological Sciences I've been able to grow as a student, a scientist, and a person in more ways than I ever thought I would. I think that one of the greatest aspects of our department is how much the faculty and staff have invested themselves in helping us students succeed. Getting a graduate degree is no easy task and I'm very grateful for all the guidance I have received. I want to thank everyone for all their help and support along the way. After graduation I plan on applying for geology/hydrology positions back in the Midwest.

~Alex Hamerstrom

IMAGINE-NC: Integrating MAthematics and Geology In NorthEastern North Carolina

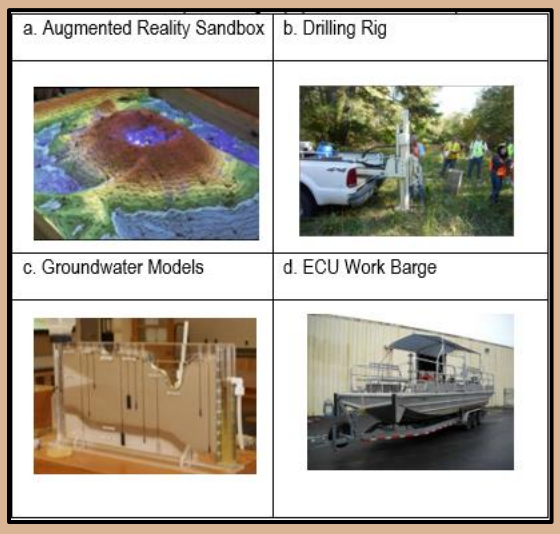
Competence in STEM is essential in today's complex, technological world. Research indicates that rich and engaging out-of-school activities in STEM can improve students' in-school performance in mathematics and science, however, opportunities for out-of-school science-enrichment activities are often limited, particularly in rural communities of low-socioeconomic status such as Beaufort and Pamlico Counties, NC. To address these low science/math scores and increase interest in STEM careers, the IMAGINE-NC project has been funded by the Burroughs Wellcome Fund's Student Science Enrichment Program for 2017-2019. Summer-science camps and academic-year activities for grades 3-8 started in 2017 at the Aurora Fossil Museum and local schools supported by faculty and students from the ECU Departments of Geological Sciences, MSITE, and CDFR, with substantial support from Nutrien (formerly PotashCorp-Aurora). IMAGINE-NC includes;

a) two, week-long, non-residential, summer camps serving approximately 60, 3rd-8th graders,

b) four weekend activities during the school year involving hands-on activities, presentations by students and local STEM professionals, with lunch provided by Nutrien, and,

c) during the school year, project staff visiting local schools and providing materials to assist teachers in delivering inquiry-based, earth-science/mathematics lessons/activities in classrooms.

Earth-science comprises much of the science curriculum for Grades 3–8, so we pursue the following activities with the campers using equipment such as that pictured below:



- Augmented Reality Sandbox to create landforms and study maps, models, and water flow (http://www.theeastcarolinian.com/news/article_a129e7a6-693e-11e4-aa2f-037e70e78792.html)
- Geoprobe to collect cores and drill holes for groundwater monitoring wells
- Monitoring wells to determine water levels and direction of groundwater flow
- Groundwater models to solve real groundwater problems through a problem-based learning approach
- ECU's work barge to collect surface water samples for analysis of pH, nutrients, temperature, etc.
- Casts of modern and *Megalodon* shark teeth to interpret the characteristics of ancient sharks

At camp this past summer "a great time was had by all"

~ Terri Woods

Sigma Gamma Epsilon: Epsilon Phi Chapter 2017-18

Hello everyone! My name is Seth Sutton and this year I am the SGE president. I am a senior and I am a dual major in biology and geology. Throughout my four years at ECU there was no moment as hard nor as rewarding as our annual field course out west. That experience was a rite of passage for me. Not only was I solving geologic problems myself, but I was able to put everything I had learned in the last three years into work. Luckily our department had prepared me well enough with classes such as stratigraphy, minerology and structural geology. Not only did I see on a grand scale how the Earth has changed over the years, but I also learned a lot about myself as well. I learned my limitations and I also had to learn that knowledge in the classroom is only one half of the equation and experience is the other. During field course I laughed with many of my classmates and became friends with many of them. I even was able to meet a few great friends who I cannot wait to see later in my career because, let's be honest, once you know a geologist you never forget them.

After this year is over I will hopefully be headed off to grad school to pursue a master's degree. The knowledge, experience and memories I have gained not only from field course, but also from the department have been invaluable to me. My greatest hope is that one day, when I am a professor, I can motivate students to reach their fullest potential and support them as much as this faculty, and the friends I have made in geology, have done for me.

This year's rock sale had an amazing turnout. We attracted as many non-geologists as geologists and everyone in SGE was enthusiastic enough to help make sure that the fundraiser went off without a hitch. We will be sending out a pamphlet throughout the geology department in March with ECU geology merchandise for everyone to buy. Finally, our annual chili cook off will be held in early April and we are hoping for a large turnout for that as well. All these fundraisers help pay for the annual pig picking; I hope to see all of you there.

New Beginnings

Marah Dahn

I was born and raised in western New York on Lake Erie and I now live in Washington, NC. I attended SUNY Geneseo for a B.A. in Geophysics and Scripps Institution of Oceanography for a M.S. in Earth Sciences with a Geophysics concentration. Prior to starting here at ECU I was a marine technician, first on the RV *Pelican* operated by Louisiana Universities Marine Consortium and then as a private contractor for the UNOLS research fleet.

I was part of the Marine Electromagnetic Exploration lab at Scripps. Fieldwork with the group consisted of deploying seafloor receivers that measure the electric and magnetic fields. This is used to solve an inverse problem for the conductivity structure of the upper mantle and crust. From the conductivity cross section generated, interpretations about composition can be made. I was involved in projects that used this method to map the magma chamber beneath Umnak Island in the Aleutian Islands and fresh groundwater emplaced in the continental shelf offshore Martha's Vineyard, MA and San Diego, CA. This fieldwork and internships on the EV *Nautilus* as a data manager and the *Okeanos Explorer* as a multibeam mapping intern spurred me to pursue a fulltime shipboard position in the research community.

On research vessels as a marine technician I wore many hats. I maintained the shipboard computer network and the satellite-provided internet service. I operated and maintained the shipboard instrumentation that included a suite of meteorological and navigation sensors, CHIRP Echosounders, flow-thru systems for underway sampling of seawater, and the bread and butter of oceanographic research—the CTD rosette. CTD stands for Conductivity Temperature Depth and it is a package of instruments that is lowered down through the water column that measures those standard parameters along with whatever ancillary instruments are attached, including but not limited to chlorophyll fluorescence and dissolved oxygen. The rosette also has water sampling bottles that can be triggered to close at discrete depths. Deck deployments were also a major component of the operation and varied from cruise to cruise depending on the Principal Investigator. Deck work included deploying instruments brought by the research group, multi-coring, trawling, Shipek grabs, plankton nets and weather buoy deployment and recovery. To deploy these deck winches, a-frames, and cranes are utilized. No two cruises were alike! It was a challenging and rewarding position but I'm excited to make the transition to land work and support this well-established department.

My hobbies include sailing and restoring old sailboats, reading, diving, hiking with my dog, Icarus, and gardening. My favorite food is bean sprouts and my favorite mineral is lazurite. Thank you to everyone who has given me a warm welcome here and I look forward to meeting everyone else!

New Beginnings

"It was the best of times, it was the worst of times, it was the age of wisdom, it was the age of foolishness, it was the epoch of belief, it was the epoch of incredulity, it was the season of Light, it was the season of Darkness, it was the spring of hope, it was the winter of despair, we had everything before us, we had nothing before us, we were all going direct to Heaven, we were all going direct the other way – in short, the period was so far like the present period, that some of its noisiest authorities insisted on its being received, for good or for evil, in the superlative degree of comparison only."

--Charles Dickens, *A Tale of Two Cities*

Don Neal

How fitting this quote is when trying to sum up the lifetime I have spent at ECU. August of 1979 seems like such a long time ago yet has flown by like a heartbeat. I came to ECU right out of grad school. I think I was fortunate when I was a student to have had many good professors to emulate in my teaching career. My physical geology classes tend to be rather traditional in approach just like I was taught those many years ago. Historical geology was a new invention as my background was in how you came up with the big picture rather than in what the big picture was. This approach fed into my stratigraphy course. Now students see what the big picture is then learn how that big picture comes about, whether they realize that or not. Stratigraphy was my background, both biostratigraphy and physical stratigraphy, so I ended up teaching what I knew. Another interest I developed as a student was sedimentary petrology. I have been fortunate over the years to teach both sedimentary petrology and a more specialized course in carbonate petrology. The skills developed in these courses increased students' ability to observe and interpret the origin and subsequent history of sedimentary rocks. That was a good thing. There have been other classes I have taught like sedimentation and stratigraphy, paleontology, oceanography, and a geostatistics course with Richard Spruill amongst others. I have always enjoyed teaching and consider it the primary focus of my career.

Classrooms weren't the only venues for teaching. I have had some exceptional graduate students and you know who you are. Much to the detriment of my academic progression through the ranks was my uncanny ability to give away my best research projects to my students. Sure, we learned a lot, but it never progressed to publication other than in abstracts. Most of the results have been presented at professional meetings but especially those of the Southeastern Section of the Geological Society of America. I remember one meeting when Fred Read from VPI, talking with one of my students remarked, "you are one of Neal's boys". Some unexpected recognition. I always tried to have my students go to professional meetings as they were training to be professionals. I must have been doing

New Beginnings

something right over the years for in 2016 the Eastern Section of the American Association of Petroleum Geologists honored me with the "Outstanding Educator Award". Much of the research we did focused on Mississippian stratigraphy and petrology and energy resources in the central Appalachians. For many years I presented our results at the meetings of the International Congress on Carboniferous and Permian Stratigraphy and Geology. The meetings were every four years in locales like Beijing and Calgary, Buenos Aires, Krakow and Utrecht. I always managed to get on a field trip or two.

ECU's motto is "*servire*," meaning "to serve." Service was a large part of my career both on campus and beyond. Among the various committees and Faculty Senate positions I served as Secretary of the Faculty and Vice-Chair of the Faculty. Outside of ECU I was involved for many years with Sigma Gamma Epsilon, the earth science honorary society, serving as a Regional Vice President, National President, and as Editor of *The Compass*. For sixteen years I was Secretary-Treasurer of the Southeastern Section of the Geological Society of America. Previously I had served as Secretary-Treasurer of the Southeastern Section of SEPM for which I was presented with a Distinguished Service Award.

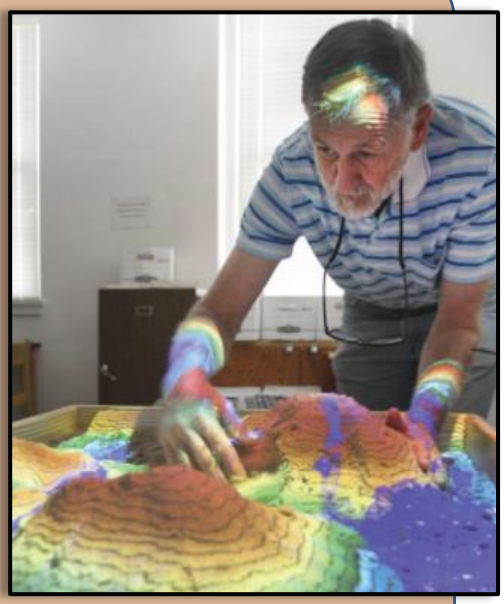
Over the years I didn't always do things right. I should have done more of this and less of that. Been a little stingy with my research. Cared a little less about my students. But in hindsight, I have no regrets. Everything was superlative!

Non, rien de rien, non, je ne regretted rien…

Je me fous du passé

~Édith Piaf

New Beginnings



John Woods

Laura asked me to put together a short bio concerning my time working in the Geology Department. Well I know I did something while working here so this should be easy right? Hmmm.

So, I was allowed to do a lot of different stuff, which was sometimes fun, sometimes not so fun, sometimes a little scary, and usually very interesting. I was privileged to work with Dorothea, Dave (sometimes scary), Mike (septic systems, hmmm), Reide, J.P., Edu, Steve (Culver and Harper), Alex, Mauger, Eric, Catherine, Sid, Richard (Miller and Spruill), Don, Adriana and Stan. Maybe I should mention getting to work some with my favorite professor and ex-fiancee, Terri.

It goes without saying that the most fulfilling and exciting work was always getting to work with the wonderful students. If I started to list my favorite students this would not be a short bio. Let's see, I spent more than 120 days on boats of different types doing surveys, sampling, and training. I spent over 100 days geoprobing, mainly in NC, Georgia, Florida, and South Carolina. I got to assemble a dozen or so pretty high-end computers for modeling, imaging, and GIS work. I was allowed to repair several pieces of really expensive analytical equipment (challenging and very interesting stuff). I helped maintain and repair a lot of the department equipment. I led about 25 Motorboat Operators Certification Courses for over 100 faculty and students to learn more about operating boats safely. In addition to Geology, I got to work with Biology, ICSP, CRM, Science Education, and Anthropology doing different types of field work and teaching. With Jim, I set up and maintained computers for any grad students that wanted one and helped set up and image the computer room computers. I built three Augmented Reality Sandboxes. I also got to deal with EH&S issues and inventory every year. There are of course other things I'm not remembering, but this is enough.

I wish to thank Steve Culver for the allowing me to have this job in the first place. Lastly, being allowed to work with Jim was an honor I will cherish.

2017 Graduates

Spring 2017

B.S.

Byrum, Melissa A.
Cressman, Amy W.
Durway, Matthew L.
Gilleland, Casey J.
Gullett, Jon P.
Mitchell, Timothy J.
Moir, Jacob B.
Prock, Kyle G.
Smith, Jacob A.
Walsh, Kimberly A.

M.S.

Akland, Mark J.
Gibbons, Ryan M.
Harrison, Emily
Kelly, Nicholas J.
Wagner, James E.

Summer 2017

B.S

Baines, Lindsey B.
Broadbridge, Patrick
Discepolo, A Alfred J.
Tuominen, Sharon
Zimarino, Steven N.
de Sousa, Laura I.

M.S.

Benfield, Beau D.
Donovan, Bailey G.
McGee, Kelsey L.
Noles, Jonathan R.
Robbins, Jeremy J.
Whitley, Cameron J.

Fall 2017

B.S.

Grove, Alisson L.
Redman, Jonathan N.

M.S.

Mitchell, Nicholas J.
Owers, James E.
Stevens, Luke D.

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