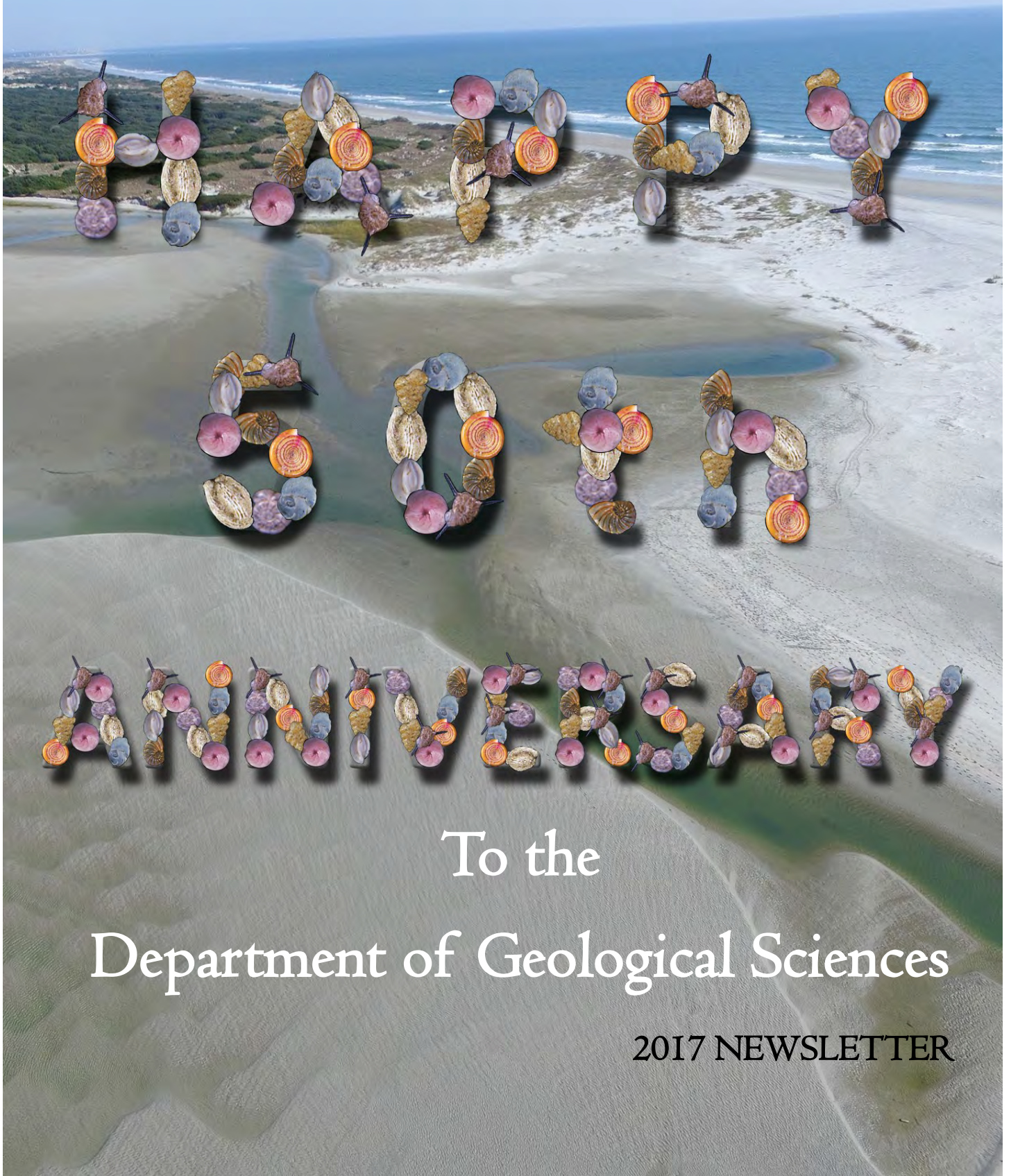




East Carolina University®



To the
Department of Geological Sciences

2017 NEWSLETTER

Table of Contents

It's the 50th Anniversary of Our Department.....	3
Annual Pig Picking.....	4
Our 50th Anniversary.....	5
Ode to Conglomeratic Sandstones and Chairs.....	6
Evolution of the Department of Geological Sciences.....	8
Behind the Scenes.....	10
Interviews with Alumni.....	13
Student Field Trips.....	19
A Word from our Lab Groups.....	20
Sigma Gamma Epsilon: Epsilon Phi Chapter.....	25
2016 Department of Geological Sciences Graduates.....	26
Donors to the Department of Geological Sciences.....	27
A Wonderful Gift.....	28
Donation Form.....	29



A word cloud using titles from all theses completed in Geological Sciences over the lifetime of the department,
Courtesy of Reide Corbett.

Editors: Mike Twarog
Nina Shomorhun
Kim Walsh

Formatted by: Laura de Sousa

Advisers: Dr. Stephen Culver
Dr. Stan Riggs

This Geology Newsletter was funded by the Riggs Endowment and all of its Alumni Contributors.

IT'S THE 50TH ANNIVERSARY OF OUR DEPARTMENT!

Greetings to alumni, friends, students, staff and faculty members of Geological Sciences. Congratulations to us all! Our department commenced its life at the start of the 1967-1968 academic year and we plan to celebrate the 50th anniversary throughout academic year 2017-2018.

To kick-off our anniversary celebrations we have a special Newsletter with the majority of the content courtesy of the undergraduate and graduate students who took the lead in putting this document together. Input from alumni is also front and center this year as are our plans for the anniversary celebrations that start in April 2017 (see within for details and dates). Of course, historical insights are provided by Stan Riggs, who was here from the start.

We also have a special cover this year. It indicates the department's main emphasis area for research over much of our history, the beautiful coast of North Carolina (drone image courtesy of graduate student Nina Shmorhun). But it also indicates the growing internationalization of our programs with words spelled out by amazing images of modern benthic foraminifera from the South China Sea (courtesy of recent graduate student Sam Martin).

I recognize the Newsletter team led by Kimberley Walsh, President of student honor society Sigma Gamma Epsilon. Working with Kim were Nina Shmorhun, Mike Twarog and Laura de Sousa. Thank you for your efforts!

I cannot end without mention of our founding father, Dr. Charles Q. Brown, who planned, initiated and ran the department for the first four years (1967-1971). C.Q. returned from higher administration in 1979 and ran the department for another decade. We all owe a huge debt of gratitude to C.Q. for his vision, his energy and his leadership.

We look forward to hearing from you over the celebratory year. Or better yet, seeing you at one or more of our special events!

My very best wishes,



Steve Culver

Chair, Geological Sciences



Amy Cressman received an award from Dr. Culver at the Annual Pig Pickin' 2016

Annual Pig Pickin'

Please join us for our annual Pig Pickin'!

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

Noon, Saturday, April 29th, 2017

Please contact the main office for directions at:

Phone: 252-328-6360

Email: westk@ecu.edu



Our 50th Anniversary

THE DEPARTMENT OF GEOLOGICAL SCIENCES IS CELEBRATING 50 YEARS!

Yes, you read that correctly, a half century. To celebrate this impressive milestone, the Department will be hosting a number of events throughout the year and beginning late this spring. All alumni and former faculty, as well as current students and staff are warmly invited to each event. Several dates and venues are still to be finalized. We will be contacting alumni when these become set.

April 19th (Wednesday 12:00 pm) Lecture and Discussion: “Climate and Human History” by Dr. Henry Pollock (Professor of Geophysics, University of Michigan) Location to be determined.

April 19th (Wednesday 6:20 pm) Screening of “PROJECT: ICE” by William Kleinert. This award winning film is about the origin and evolution of the Great Lakes, 20% of the world’s fresh water, and its’ people; followed by a panel discussion. Regal Grande Theater, Greenville, NC

April 28th (Friday): Pre-pig pickin’ happy hour

Location and time to be determined

April 29th (Saturday, 12:00 noon at the Spruill Farm): Official 50th Anniversary Kickoff Event! Annual Pig Pickin’ and band with plenty of food, yard games, live music, student and faculty performances (i.e., skits, impressions, open mic), etc.

April 30th (Sunday: 10:00 am): Post-pig pickin’ the bones and clean-up

August 26th (Saturday): Coastal Plain field trip ending at the Aurora Fossil museum with a reception.

Mid-October Homecoming events: The official ECU Homecoming date has not yet been determined. Our events may or may not coincide with ECU Homecoming as it may conflict with GSA (Seattle). But we want to have everyone here for a home game with tailgating, etc. So, stay tuned. We’ll let you know soon.

Friday: Student Symposium; High profile speaker and reception (location to be determined)

Saturday: Tentative depending on date; Morning Parade (with a department float),

Saturday: Afternoon tailgating party at Dowdy

Sunday: Possible eastern Piedmont Province field trip (Goldrock and Rolesville quarries)

ODE TO CONGLOMERATIC SANDSTONES AND CHAIRS

Stanley R. Riggs

Most human organizations, like a good clastic sedimentary rock, contain a mixture of components and a cementing agent. The ECU Department of Geological Sciences is a lot like a conglomeratic sandstone or gravelly sandstone (a gS according to Folk's terminology) composed of an aggregate of multi-compositional grains (faculty, staff, and students) held together by a bonding agent (departmental leadership). If this cementing agent in the conglomeratic sandstone is weak, weathering dominates and the rock crumbles. The leadership, working with the faculty, staff, and students determines the fabric and durability of a successful and competitive department. The departmental Chairs for the Department of Geology (later to become the Department of Geological Sciences), over the past 50-year history, have built an awesome conglomeratic sandstone that has survived through times of high energy and turbulent erosion, as well as times of great quiescence and expansion. The Chairs that we honor in this Newsletter have played critical roles in many of our lives and we thank them for their often under-appreciated efforts of keeping our department healthy. A brief review of these leaders follows.

Dr. Charles Q. Brown (1967-1971): The architect and builder of ECU's Geology Department. He was hired into the newly formed Geography and Geology Department in 1966 to lay the plans for developing a fourth science program when East Carolina College became a university in fall of 1967. Charlie and his four-person team (Drs. Jean Lowry, Stan Riggs, Bobby Bishop, and Percy Crosby) led the charge by developing curricula, acquiring resources and equipment, and building a student base. He was totally a can-do leader who, with every new idea, was on the phone and in administrators' offices making it happen. Charlie was so good that four years later, the Chancellor, Dr. Leo Jenkins, captured him for bigger jobs within ECU.

Dr. A. Ray Jennings (1971-1975): A four-year appointed caretaker Chair was brought in from Texas to lead a rapidly growing department. He resigned suddenly in 1975 and returned to Texas.

Dr. Michael P. O'Conner (1975-1979): Mike then took over for a four-year tenure as Chair of Geology. He resigned in 1979 and moved to Maine.

Dr. Gale Billings (1979-1979): He was hired through a national search, arrived in Greenville from New Mexico at the beginning of Fall Semester, bought a deep-sea sport fishing boat, and disappeared a month or so later. Who was he, where did he go, and why?

Dr. Charles Q. Brown (1979-1988): With Gale's departure, Charlie returned to his first love as teacher and Chair of his Geology Department for the next ten years of his career. During this time he was very instrumental in getting Earth Science as one of the required science courses for high school graduation in North Carolina. Charlie retired from ECU in the spring of 1992.

Dr. Scott W. Snyder (1988-1998): When Charlie retired, Scott took over as Chair. Scott was as solid as a rock—he was tough, he was fair, he was always there to help and guide the students and provide the leadership to keep the department viable. When he resigned the Chair's position, he took over the leadership of ECU's newly founded Coastal Resources Management PhD program and carried it through its first years and then moved into the Thomas Harriot College of Arts and Sciences as Associate Dean.

Dr. Richard L. Mauger (1998-1999): When Scott took over the newly approved Coastal Resources Management Program, Richard stepped up to the plate as Interim Chair for a year while the search committee found a new permanent Chair.

Dr. Stephen J. Culver (1999-Present): Steve brought in the new century and new millennium, along with many new hires that expanded the faculty from nine to eighteen and built up both the undergraduate and graduate programs to the record numbers we have had in recent years. During his years at the helm we have weathered good as well as challenging times, but he is always there and ready to help move the ship forward with minimal zigs and zags. In spite of the pressures of the Chair's position, Steve remains a dedicated teacher and researcher.



From left to right, Scott Snyder, C.Q. Brown and Steve Culver. The three long-term Chairs of Geological Sciences on the occasion of C.Q.'s 80th Birthday



On the right side is the Conglomeratic Sandstone of the Pennsylvanian Fountain Formation (~280 mya) in unconformable contact with the highly weathered, Pre-Cambrian metamorphic rocks (left half) of the Rocky Mountain Front Range in Boulder, Colorado.

It is interesting to note that for 41 of the 50-year history of what is now the Department of Geological Sciences, Charlie Brown, Scott Snyder, and Steve Culver have been the cement holding the conglomeratic sandstone together. As one of ECU's smallest, yet one of the most productive departments, geology remains relevant and vibrant today. Each of us who has been part of this program during its five decades can be proud of our ancestry and heritage. We are now entering a second half century with ever-increasing demands for an understanding of our planet Earth and its awesome dynamics and critical resources. Finally, we acknowledge all of our ECU leaders who have supported Geology with particular thanks to the three corner-stone Chairs to whom we all owe our gratitude.

The conglomeratic portion of the sandstone is presently composed of the following faculty and staff:

- | | | | |
|-----------------|----------------|--------------------|-------------|
| Dorothea Ames | Eduardo Leorri | Donald Neal | J.P. Walsh |
| Reide Corbett | Alex Manda | Michael O'Driscoll | Jim Watson |
| Steve Culver | Richard Mauger | Stan Riggs | Kim West |
| Steve Harper | Dare Merritt | Catherine Rigsby | John Woods |
| Adriana Heimann | Rick Miller | Richard Spruill | Terri Woods |
| Eric Horsman | Sid Mitra | | |

However, the most dominant part of a conglomeratic sandstone is the sand grain component which is represented by all of our incredible students of the Earth sciences over the past five decades.

EVOLUTION OF THE DEPARTMENT OF GEOLOGICAL SCIENCES

Stanley R. Riggs

This is a broad-scale time-line of a few selected events in the life of the Department of Geological Sciences during the past half century (1967 to 2016).

I. OUR DIGS FROM 1967-2016

During our first year (1967-1968), the departmental offices were in Erwin Hall, a faculty dormitory built in 1952. However, our lecture and laboratory rooms were in the Old Austin building. The basement rooms were long and narrow and surrounded the open building center that still had its red-clay floor. In addition, we shared haunted research space with the pigeons in the attic and under the Cupula. This attic space with its creaky wooden floors was serviced by an open, cranky-wobbly elevator that jerked its way up and down with major fits and starts.

Old Austin met its demise in 1968 (it was demolished), forcing the Department's move into the basement of Ragsdale Hall, a women's dormitory built in 1923. This was another set of long and narrow rooms surrounding a central courtyard dominated by sunbathing co-eds. In 1976, the newly developed medical school trumped Geology and took over the Ragsdale basement forcing our next move to several floors of Graham Building that we shared with Foreign Languages. A significant addition (in 1973) to Geology's footprint, however, was a major portion of the basement of the Old Cafeteria, infamously known as The Underground or Terrainia; its character came from the connection to an underground tunnel system dominated by feral cats, raccoons, and possums. Terrainia was geology's "dirty lab" where the rocks, sediments, and drill cores for projects from all over the world were processed for analysis and stored. This area not only housed much of our field equipment, but also became the second home for many students working on a multitude of research projects.

With time, Geology took over the entire Graham Building, originally the home for the Department of Education and named for Maria Graham, a member of the ECTC faculty in 1909. Along the way there were numerous modifications to address changing needs for classrooms, analytical research labs, and office space. As the faculty and student population grew, demands increased for more and better laboratory and classroom space. Flanagan Building, originally built in 1940, was totally renovated and ready for reoccupation in 2005 when the Old Cafeteria building including Terrainia, were closed for remodeling. Geology was able to move the Terrainia operations to the newly renovated space on the first floor of Flanagan, which offered a whole suite of new clean labs and even some office space. The ancient heating-cooling plant was extracted out of the enclosed central courtyard by a humongous crane. Jim Watson had obtained many large rocks from quarries across the State that were ready and waiting for the crane to deposit them into the courtyard to form Geology's new rock garden – a very useful teaching resource for geology students. Even though we lost Terrainia, Geology now occupies some of the best real estate on campus—located on the brickyard and across from the fountain and mall—the academic equivalent to living on Fifth Avenue across from Central Park in New York City.

2. THE FIELD CORE OF GEOLOGY'S PROGRAM

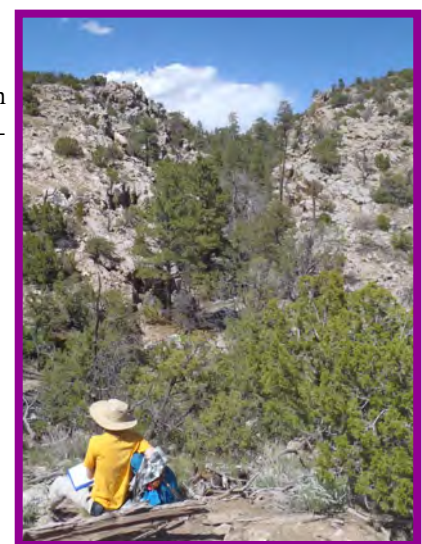
Field work has always been at the core of the ECU Geology program. Dr. Jean Lowry was hired by the ECC Department of Geography in 1959 and soon became known for her long weekend class field trips to the Appalachian Mountains. Each trip featured her infamous knowledge and experience with the Paleozoic limestone caverns, which were explored by the students with great enthusiasm for the dark, dank, and squirmy-mud experience. In 1968 Dr. Charlie Brown gave a key to Dr. Stan Riggs for an old schoolhouse in the "Little California" neighborhood in Manteo, NC. His charge was to go to Manteo and start a coastal marine field program based in the old school house. This interdisciplinary, off-campus program for junior and senior geology and biology majors was a 24/7 semester of coastal field trips, soggy-groggy research projects, and life-lessons in the dynamic world of our coastal system. The program, with its live-in faculty, went all year for about 5 to 6 years until the school house was returned to Dare County for the new Head-Start Program.

The coastal faculty returned to campus and formed the interdisciplinary Institute for Coastal and Marine Research (ICMR). Through time this group ultimately developed the Coastal Resource Management (CRM) PhD program (1998) of which Dr. Scott Snyder was the initial director. ICMR and CRM were consolidated into the Institute for Coastal Science and Policy in 2007. Another important step forward was development of the new Coastal Studies Institute (CSI) (in 2003) Dr. Reide Corbett and Dr. J.P. Walsh are the Geology Department's resident faculty in the new coastal facilities on the estuarine shores of Roanoke Island (2013).

In the meantime, land-based field geology was also expanding. In the early 1980s ECU Geology became a partner with UNC-CH summer field course in the Rocky Mountains. In 1985 it became a UNC system-wide field course and ECU Geology took over the leadership for the next 31 years. Dr. Richard Spruill, who was one of the originators of the initial field course, became program director from 1985-1990. In 1990 the leadership torch was handed over to Dr. Richard Mauger for the next 15 years. Dr. Stephen Harper has run the program for the last 11 years. These three faculty members, along with many other supporting faculty and staff, represent another triumvirate of geological leaders within the Department of Geological Sciences. This world-class field program remains the capstone course for geology majors from ECU as well as many other important geology programs across the country.

In addition to the field programs described above, most geology faculty at ECU still incorporate field trips and field projects into their respective classes and direct field-based research theses within their areas of expertise. Most of the thesis research is within the mid-Atlantic region, however, more and more of our MS thesis research is now being undertaken at locations throughout the world.

Most recently (2011), ECU initiated a Coastal Water Resources Center within ICSP. Dr. Richard Spruill was the Founding Director and his leadership was followed by that of Dr. Mike O'Driscoll.



Summer field course: Copper Hill, Picuris Range, New Mexico

3. WHEELS AND BOATS OF GEOLOGY'S FIELD PROGRAMS

In 1967, Geology received a small grant from ECU's Division of Continuing Education (DCE), which was then the premier and moneyed department on campus, to acquire some basic field equipment. If we were going to run a field program at Manteo (ECU by the sea) for our geology and biology students, we needed a way to move students. So we bought a gray panel van with no seats or windows, from the NC prison system and a 4X4 WWII jeep. These were the first two university vehicles outside of the DCE. With increasing demand for classroom field trips and field research, Geology over time developed a small fleet of passenger vans, pick-up trucks, drill rigs, etc.

If ECU was going to develop a coastal and marine program, it soon became clear that we must have a boat or two. So in 1968, geology bought an old 36-foot Chesapeake Bay dead-rise oyster boat, with a rusted out model-T engine, that was built on Tangier Island, VA during the 1930s. Following much rebuilding of the oyster boat, she was named R/V SWEET AGONA after the woebegone lady who was Old Tom's agony in Roanoke Island's "Lost Colony". As a busy research vessel, she quickly became the queen of the NC estuarine waters. In need of a small barge for coring estuarine sediments, in 1969 Geology went to the metal recycling dump, cobbled together some aluminum I beams, jet fuel cylinders, and many sheets of heavy marine plywood and built a self-contained coring platform named R/V BEGGAR TOM, after Agona's partner in the "Lost Colony". Through the years many other small boats from 8-foot gummy boats to 24-foot jon boats were utilized for work in the tidal creeks, swamp forests, and rivers of coastal NC.

Soon there was a research need to move onto the inner shelf off the barrier islands which required an ocean-capable vessel. So in 1975 Geology went to the Naval Shipyards in Norfolk and obtained a 36-foot fiberglass personnel carrier decommissioned from the Vietnam War. This bare hull was trucked to Wanchese where she was outfitted with a marine diesel engine, shaft and rudder system, and a cabin. The vessel's Vietnam name NITRO was kept in honor of the vets who utilized the craft. The R/V NITRO was a slow, but powerful work-horse for NC's estuarine and coastal offshore waters for many years. As research needs expanded seaward across the continental shelf, ECU became a partner (1979) in the North Carolina—Duke Oceanographic Consortium which was home for the National Science Foundation, 130-foot research vessels R/V EASTWARD and R/V CAPE HATTERAS. Many geology faculty and students spent weeks to months at sea between 1979 and 2013 to study the stratigraphy, sediment composition, ocean dynamics, and ecology of the continental margin. Around 2010, R/V NITRO was replaced by the brand new 34-foot research vessel R/V STANLEY R. RIGGS. This aluminum catamaran is a perfect research and teaching platform for the inland waters of the NC Pamlico-Albemarle estuarine system. Miscellaneous other coastal ocean-going vessels have supplied ships of opportunity for the geology faculty and students over the many decades of oceanographic research.



The R/V Beggar Tom

Courtesy of Dr. Stan Riggs



Vibracoring from the R/V Stanley R. Riggs.

Courtesy of Kelli Moran

In the 2016 Newsletter, our two technicians, Jim Watson and John Woods, wrote about some aspects of their work. This year we hear from the front office.

Behind the Scenes

Administrative Assistants for the Department of Geological Sciences

Dare Merritt 1980 to Present

Kim West 2013 to Present

Interviewer: Lillian Howie

Lillian: We wanted to get an idea of what you do around the office. We students all come and go, but we're not that familiar with all the work you do for the department. What are some of your responsibilities?

Kim: I assist students with registration issues, orienting them to the department, and setting up all the things graduate students need. I do a lot of documentation and help folks navigate their way. Also, I help the faculty with their travel requests and reimbursements. I do the purchasing of departmental and laboratory supplies needed by a faculty member and/or students doing their research. I just enjoy helping.

Dare: So that leaves me to work with Dr. Culver on administering the department budget. I also do a lot of reporting; I don't directly administer the faculty research grants, but I do the reporting regarding the grants, as well as the paperwork for hiring and payroll, getting the money to folks.

Lillian: Well, that's the most important part. Because obviously geologists can't do it. [laughs] We need people like you to help us.

Dare: The way I feel about it is, as long as things go smoothly, what I'm doing is not noticeable. You just want to remain invisible and everything going like it should. That's about it.

Lillian: That's a good way to think about it. What are some of the things that you did before you came to work in this department? Were you students at ECU?

Kim: I came to work at ECU a little over three years ago after raising my family and taking some time to do other things in my life, including working for a manufacturer in Kinston. I'm a former alumnus of ECU, I was here a long time ago, in 1992. Like many students here, I've been a

lot of different places. I'm originally from Florida, but now I live in Kinston. I have two grown daughters that I'm very proud of. They both live and work in Raleigh. I've been happily married for a very, very long time. So yeah. I commute up here every day from Kinston.

It's 31 miles from my driveway to the ECU parking lot depending on traffic. That's not a bad drive; it actually gives me down-time to listen to the radio and enjoy quiet time for myself before I get home and start navigating the other side of life when not at work.

Dare: I graduated from ECU in 1977, met my husband during my freshman year at a downtown bar. After graduation I worked for several years doing part time jobs and then began working at ECU in August 1980 and have been working in the Department of Geological Sciences ever since. The duration of employment is the exception rather than the rule, I'm quite sure.

Lillian: Wow! Well, we're happy to have you!

What are some of your favorite events and things that have happened in the department during your tenure?

Dare: One of my favorite things was getting a word processor. All that typing and having to use correction tape for manuscripts was not a lot of fun. A lot of the tasks that we do are repetitive and cyclical and geared to the academic year. One of the best parts of our job is that the faces change from year to year. Just seeing the students come, succeed, and go on to bigger and new parts of their lives. It just gives us energy, staying plugged in with young students that are ambitious and excited about the life ahead.

Kim: It has been very interesting to see how technology has really leapt forward in a very short period of time. It is challenging at times because technology is constantly changing.

Behind the Scenes Continued

Lillian: Has being around people in the department over the years made an impact on you? Do you like geology a little bit more than you did before you came here?

Kim: I think some of the subjects that the faculty and graduate students are studying and researching, are fascinating. Many of these topics I was not exposed to previously and they have helped me to have a more open mind about issues that affect our coast and our state. So it's interesting in that it is knowledge one wouldn't have been exposed to otherwise. I'm very interested in our environment staying healthy in our state.

Dare: I am interested and it probably seems like I should have learned a lot about geology as long as I've been here. However, when I ask questions, I need the language to be broken down so a regular person can understand it without a dictionary—too many big words.

Lillian: Well, that means you're dedicated to what you're doing, so we're not distracting you too much.

Dare: Yeah, that's a nice way to put it.

Kim: I just enjoy and admire the students' energy and dedication to what they're doing. And that's good to see. As a mother, having daughters that are the age of our students, it's nice to see both women and men in this department are navigating a really good course to their future in the sciences.



Dare Merritt - Administrative Assistant



Kim West - Administrative Assistant

A special thanks to these women for keeping our department running smoothly and always being there to help!

Interviews with Alumni

Nina Shmorhun, B.S. Bryn Mawr College, 2016; ECU M.S. Candidate

In order to highlight the past 50 years of department history the Newsletter committee thought it would be a wonderful idea to interview alumni from the department. I reached out by email, received several responses, and set an interview schedule for the next few weeks.

First, I drove to the Aurora Fossil Museum to speak with Cindy Crane (and received a full museum tour!) and then spoke over the phone with Patrick Mallette while he was taking a break from being a 'rock star'. A meeting with Steve Campbell started with a tour of the GMA hydrology offices followed by a wealth of information, and then I spoke with Chris Smith over the phone in his USGS office in St. Petersburg, Florida. Greg 'Rudi' Rudolph divulged a fascinating summary of his current projects managing coastal shorelines of Bogue Banks, NC.

I only wish that the entire hour-long interviews from each could have been presented - they were fantastic interviews. However, due to page limits, I have confined each interview to the highlights. While the five alumni have diverse backgrounds and are at different stages in their geology careers, they all have one thing in common: their appreciation and admiration of ECU's Department of Geological Sciences.



*Nina Shmorhun– Ubehebe Crater,
Death Valley National Park, California*

Interviews with Alumni

Steve Campbell

B.S. 1981; M.S. 198; ECU

PhD, Florida State University

Senior Hydrogeologist, GMA, Greenville, NC.

Has routinely taught geology courses at ECU since 1999, including the summer Field Course.

Nina: How has your education at ECU shaped your professional career?

Steve: “The well-grounded core curriculum gave me the tools to go to the M.S. and PhD programs and focus on the subjects I was really interested in, but not forget those other classes and skills. There is validity to all of the subjects in the geology curriculum. It turns out years later, when I was in Tallahassee trying to put myself through school, I worked for the Florida Survey logging core and drill cuttings doing sedimentological and fossil work, believe it or not. The purpose of this work was to build a sub-surface GIS database for logging and drilling that had been done over the prior 30 to 40 years. So, these were skills that I never thought I would use again, but they became useful in an important way. And I wonder, would I have been as employable if I did not have the capability to say, ‘Hey, I can do these other things for you’. It certainly helped me put myself through school. So I think that is something that, in a lot of ways, ECU equipped me to do.”

Steve: “It’s really hard, I think, to be a student and say, for the next two or three years this is what I’m working on for my Master’s thesis. That takes a large commitment and stick-to-itiveness. If a person can do that, to me it says you have the ability to hang in there. That’s why the M.S. is the working degree. It shows hard-headed gumption, and I think that helps; that’s the kind of employee an employer wants. Stick to it, figure it out, go to your supervisor with multiple solutions or questions frequently. That’s going to make the difference in getting a job and keeping a job.

Nina: Do you have any funny memories of Graham?

Steve: “The bull pen for graduate students in Graham had a very active night scene that typically ended around the time bars got going downtown. I think the night life in Greenville was a little more raucous than it is now...”



but I can say one of the things I really miss about my undergraduate and graduate time at ECU was the comradery that we had both among the undergraduate students, graduate students, and geology faculty. Together we formed a family. Every Friday afternoon when the faculty got out of their meeting, there was a group that went downtown to several different gathering places, like the New Deli, and spent a lot of time together playing darts, drinking beer, and socializing. It was routine to see people like Scott Snyder, Stan Riggs, Jim Watson, and other faculty downtown being themselves and I think that’s really useful for students to recognize that the inherent academic barriers don’t need to be there.”

Nina: What is your favorite thing that you have seen the department do?

Steve: “The annual spring ‘pig pickin’ at the end of the academic year, I think is a really important component that has stayed with us over the many decades. For a period of time the original pig pickins were often at Jean Lowry’s place on the Pamlico River. Then there was a period when the gathering grew into an early spring time Shad fish fry that Stan Riggs held on his Tar River property. When the Shad run became pretty much extinct along the Tar River and elsewhere the spring gathering migrated back to pig pickins’ at Richard Spruill’s property near Grimesland. These events were always a major focal point for geology get-togethers that help students realize that there is a family of people going through the same experiences in the same department who are interested in many different things, but they have that common base of time and space. I know there were many departmental field trips that we students could participate in by piggy-backing onto one of Stan Riggs’ float trips down the Tar River, tagging along with Scott Snyder to look at fossils in Ohio, or going on an extended field trip with Richard Mauger to look at the petrology and geology of the Piedmont and Appalachian Provinces. I think those are really bonding experiences in so many ways.”

Interviews with Alumni

Greg 'Rudi' Rudolph

B.S. 1997; M.S. 1999; ECU

Carteret County Shore Protection Manager,
Morehead City, NC

Nina: What is the impact of your current work as Shore Protection Manager?

Rudi: "I work for our local government and a lot of what I do is about the economy. The beaches of Carteret County are a really important economic driver, not just for the property taxes, but for the tourist industry; every beach town can say that, but Carteret County is a little bit different. If you leave Bogue Banks, you have to go to Ocracoke or Hatteras Village before you can take a 'normal family vacation' and that's 60 or 90 miles up the coast. If you go to the west of Bogue Banks the next really inhabited beach is North Topsail Island. The distance between Hatteras Village and North Topsail is 100 miles and the only place you can go for a 'normal family vacation', is the 25 miles of Bogue Banks. So keeping the beaches of Bogue Banks healthy and sustainable is a big deal for the entire region. The other part of my job is keeping the public informed and that is a big deal. I look back at my experience in the Geology Department; you don't graduate without learning how to write and that has been critical ever since. My education at ECU was beneficial to my career in a big way."

Nina: Your job requires you to strike a middle ground where you're an applied scientist? What most people don't realize is that many geologists don't sit in labs all day and just publish technical papers that the public doesn't understand. You are really out there and are a big force for Carteret County and preserving their natural resource—the public beach.

Rudi: "When I talk to the Chamber of Commerce, and folks like that, the first slide gets to this - a venn diagram. I'm talking to non-scientists and I show the venn diagram just to blow their minds. However, one circle is a societal solution and one is a science solution and these are completely separate a lot of times. My goal is to get some overlap for these two circles. If I can get the venn diagram with the right societal solution and the right science solution to overlap, that's awesome."



Nina: What is your favorite memory from ECU?

Rudi: "I remember being out on Pamlico Sound with Jim Watson in the *R/V Nitro*, which has now been decommissioned. We were at anchor in the middle of what seemed like "Pamlico Ocean" and hungry. My wife, Stephanie, had given me some leftover food that we put in tin foil and reheated it on the manifold. I think it was sweet potato casserole and turkey; we ate it right off the diesel engine."

Nina: What is one thing that a faculty member has said to you that has stuck?

Rudi: "One time Scott Snyder and I were talking about something and he said, 'Pick your battles'. To this day when people are talking about their choices and there are too many choices, I respond with 'pick your battle' and always think of Scott. What do I remember most about ECU Geology? What was amazing is that it never was just about geology, but was always about the process and the people."

Nina: What's your favorite geology joke?

Rudi: "I'm going to make like a gravity anomaly and a bouguer out of here. You know, like the Bouguer anomaly"



Interviews with Alumni

Cynthia 'Cindy' Crane

B.S. 2008; M.S. 2011; ECU

Director, Aurora Fossil Museum, Aurora, North Carolina

Nina: Tell me about yourself.

Cindy: "I enjoy educating and interacting with people, encouraging them to ask scientific questions. If they ask questions, any kind of question, it should lead to learning something. People ask me about all kinds of things and it's great; that is my job, which is also a service to society."

Nina: How has the Department of Geological Sciences had an impact on you?

Cindy: "The department is like a second family...they encouraged me. I live and work in in close proximity of Greenville and I try to make a point to visit the department frequently. The Aurora Fossil Museum and ECU worked together and obtained a Burroughs Wellcome grant this year. This is the largest grant the museum has ever gotten and it is to collaborate with the Department of Geological Sciences and STEM science camps and other departments at ECU. I received a high quality education at ECU with very good professors who were nurturing, encouraging, and they fostered that development of me as a professional. Whatever chance I get to promote and give back to ECU, I do."

Nina: What is it like to be a woman in geology?

Cindy: "It has been tough, but it is tough for everybody at times. I do see that women are put under a microscope more than men because it is a male-dominated field. But, if a person lets it get to you and consume you, it does not help one get past it. If a person wants to do science, doesn't matter what their gender is and—if one is a good scientist, it shouldn't matter. I am a woman and I may have to work a little harder to prove myself for it. And those women who really want to be good scientists are going to do it."

Nina: Is there anything that a faculty member has said that has stuck with you?



Cindy: "I had Paleontology with Steve Culver. We had 3-hour tests with only 10 questions that involved drawing and labeling; I mean it was intense. The first class was on foraminifera and radiolarians, all small microfossils, and I can't even see these things! So the first test scores in that class were very low. I was devastated and said to myself I won't be able to do this and tried to hold myself together. I love Paleo so much, but I had to go to my next class and couldn't stay. Steve Culver chased me down and said, 'I know your grade is not good, but because you want to be a paleontologist, you have to own it. Everything you do has to be top notch'. That stuck and helped me through a lot of things."

Nina: If you could do it all over again, what would you change?

Cindy: "That's a question Steve Culver asks when graduate students defend their thesis. He asked me that question and I said, 'I wouldn't do anything over again because I wouldn't be standing here today if I had to'. There is really nothing I would change or go back and do differently, pertaining to my schooling and where I was. Nope. I had kids and worked a job and then graduate school happened. Do I wish I could have done graduate school when I was younger? Nope. It was just the right time for me to do it."



Interviews with Alumni

Chris Smith

B.S. 2001; M.S. 2004; ECU
 LSU PhD in Oceanography and Coastal Sciences 2008
 U.S. Geological Survey
 St. Petersburg, FL

Nina: Do you love what you do?

Chris: “Yeah, it has been very exciting...a torturous road. I get to interact with amazing people every day. Two of those people are former master’s students at ECU that I brought on board through my contacts with previous advisors, Steve Culver, Reide Corbett, and Dave Mallinson. And we’ve brought two other ECU Geology people down here and employed them for the last 2 to 4 years. To provide another pathway [for employment], it’s good.”

Nina: You were originally at ECU as a computer science major. How did you get into Geology?

Chris: “I watched the movie “Office Space” and completely decided I didn’t want to sit in a cubicle all day crunching code. I always enjoyed the sciences so I went into general science education and took biology, chemistry, and a geology course that was Oceanography 1150 taught by Stan Riggs. This course fit with my personality and perception of what I wanted to do. I took more courses and it worked into the road that I wanted to go down. However, my days as a computer scientist were not wasted, I use that knowledge on a daily basis... the toolbar on my Mac-computer has two versions of MatLab, R, Excel, GIS, Sigmaplot, and a whole bunch of statistical programs that I use and think that a working knowledge of coding and quantitative mathematical skills is important.”

Nina: Do you have any funny memories of Graham?

Chris: “My cousin and I were in school together and to get into the mineral collection in Graham building we had to climb through a window and find a key to the mineralogy lab. Since undergraduates weren’t allowed to have keys to the building, we always ended up going through the window near the men’s restroom downstairs;



that was always unlocked and you could get up to the third floor where the mineralogy lab used to be. Every Sunday we would have to do this because Mineralogy had lab practicals that we needed to study mineral specimens for.”

Nina: What impact has the department had on you?

Chris: It has taught me how to address coastal problems the way I do now and to consider all aspects of the sciences including the complete range of Earth Sciences. All of the ECU geology faculty had a specialty, but they all interacted with other folks and sciences on the campus. It is critical to have the ability to understand that your science isn’t the only science being done and that there’s a world of other important science research being done that is relevant to your work. This recognition allows one to respect the inter-relationships of all science gives the opportunities for collaboration and discussion.”



(left) Chris Smith and (right) Steve Culver (or the other way around!), recovering a vibracore on Pea Island.

Interviews with Alumni

Patrick Mallette

B.S. 1982, M.S. 1986

Newmont Mining Corporation

1987-Present, Exploration Geologist

Nina: Tell me about yourself. When did you attend ECU, who did you work with, and what project(s) did you work on?

Pat: "I do remember the time, when we pulled up a core sample, which was the discovery of a major sedimentary phosphorite deposit on the continental shelf of North Carolina. I didn't fully understand what it was about at the time, but I saw Stan Riggs fall to his knees and laugh and go through every emotion you could possibly imagine when he saw what was in that core. He had been looking for and predicting that the deposit was out there for about 20 years. So, Stan and his team of students made this discovery and I got to be right next to him when it was confirmed. For an exploration geologist, which I still am, that is very cool—that is the bucket list, that is what all exploration geologists work for. I don't know how to talk about the direction, education, life and geology in just a few words-- I'll stick to geology. What I learned from Stan is transportable to all aspects of geology and life. Stan, he hasn't changed, I saw him on TV the other night, he is a geologists' geologist."

Nina: What impact did the department have on you?

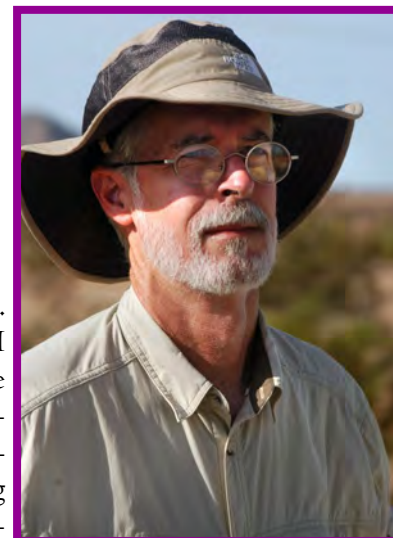
Pat: "The professors that were around when I was at ECU were great. Thirty years later, I go to the annual pig pickin' and we talk about stuff that we were doing decades ago and it is just like it was yesterday. That same closeness existed when I was a student. We were a very tight department. Not many other departments had the close student and faculty as we had in Geology. That sort of respect that the students for the folks that have been around the block many more times than we have-- it's a cool and important relationship and it is a critical component of the educational process."

At 16 years old I dreamed of playing my guitar to be a rockstar and I worked on that really hard. By the time I went to college, I didn't give up but didn't really believe I

could ever be a rockstar. About 6 or 7 years ago I was walking across the desert in Mexico, backpack full of rocks, sweating, wondering how long it was going to take before I got back to my truck. All of a sudden I realized I *am* a rockstar. It is kind of how things work out. That is a true story. I dreamed of being a rockstar and it became true and I have absolutely no regrets."

Nina: What's one piece of advice that you have for current students?

Pat: "Make sure that you really want to do geology, or whatever it is you decide to do, and make sure you love what you do. You need to ask yourself every day do you love what you are doing. I fly on a lot of airplanes and talk to many people in the seats next to me: salesmen, professionals and so many people that absolutely hate their jobs. Most of these people are making hundreds of thousands of dollars and they hate it. Don't be one of those people. If you love what you do it will not be work, because you love it and you get paid for it. As a professional geologist and once you get beyond the startup stage you get paid well. After graduating 30 years ago, and to still love what I do--that's pretty cool."



My crew of geologists and helpers on a project in Mexico (left to right: Sergio Iturbe, Roberto, me, Mishael, Julio Esquer.)

Student Field Trips

Field Methods Explores Hot Springs, NC

"I received an interesting question from a non-geology major some weeks ago in response to a mention of my upcoming field trip with the Geology Department. His surprised question didn't pertain to the trip's events, but was simply expressed at the very idea. *"You still take field trips in college?"*



Lily Howie

In retrospect, it's humbling to think that some disciplines leave the idea of field trips back in grade school, conjuring images of students filing noisily through museums in single-file lines. Imagining the same scene with adult students is laughable. So I imagine someone without knowledge of geologic field opportunities would be baffled. But in trying to construct an explanation for my friend, I realized just how indispensable field trips are for developing a geologic understanding of the world, and what is gained when we get the chance to do field work.

This past November, I participated in a three-night trip to Hot Springs, NC with Dr. Eric Horsman's Geologic Field Methods class. The culmination of our efforts in class (from measuring compass orientation, to determining strike and dip, and reading topographic maps) was an opportunity to apply the skills we'd been developing in the classroom to real-world situations. Armed with background papers about the stratigraphy of the Hot Springs area, we were led by Dr. Horsman and our loyal TAs to outcrops that allowed us to observe firsthand the different lithological units found in the area. From the massive bedding of the Snowbird Formation to the Shady Dolomite, we learned how to take proper field notes using the best method of all: practice! The final project will consist of a full report on the Hot Springs area including fully colored geologic maps, stratigraphic columns, and topographic profiles. Amongst all the work, students still found time to enjoy themselves, camping by the French Broad River and enjoying Hot Springs' nightlife. In the end, students took home not only important geologic knowledge and experience, but friendships and memories that will stay with them throughout their career.

Special thanks to Dr. Horsman and our TAs for all their help on the trip!

Sedimentology Class Analyzes Beach Sand Grain Size of the Outer Banks, NC



Jonathan Redman

Throughout my journey of striving towards a geology degree, I have learned the value of hands-on research.

This year's sedimentology trip with J.P. Walsh was one of many opportunities that allowed me to gain such experience. On October 29, 2016, the class departed ECU and ventured towards our destination at the Coastal Studies Institute on Roanoke Island. Along the way, we noticed piles of debris along the road side, as well as other evidence of flooding and wind damage. This underscored the damage to the coastal region by the recent storm, Hurricane Matthew.

Each student designed their own research experiment prior to the trip, centered on the topic of grain size analysis on several different types of beaches. Three sites were used to give students a chance to compare data from nourished and natural beaches. We met Reide Corbett, who assisted with using the RTK GPS system for locating our samples. At each site we collected sediment samples, gathered RTK GPS data points, counted tire tracks, and observed both amounts and types of vegetation, as well as number of ghost crab burrows. We were split into three groups to allow each of us a chance to participate in the data collection activity.

After a brief lunch stop, we headed to the final sampling site at Jennette's Pier. Students observed the dynamics of modern coastal systems and took part in sedimentologic research. It was a fantastic trip that allowed us the opportunity to engage in coastal field work and we got a chance to spend a day at the beach with friends! Thank you to the professors and TAs that made it happen!

A Word from our Lab Groups

Hydrology

Well, it's that time again. I am glad to peek out from behind the computer monitors in Graham room 305 and update everyone on my progress.

James Owers

It feels like only yesterday that my dream was to disappear into the badlands of Montana to hunt fossils and even more recent that I was to venture into the oilfield to begin a professional career. If someone told me five years ago that I would be almost finished with a hydrogeology project, I may have laughed, but here I am.

My thesis assesses groundwater levels and determines their potential influence on flooding events on Bogue Banks, a North Carolina barrier island. It began by installing 29 monitoring wells, equipping them with data loggers, and working with residents to ensure the accuracy of the data. These data will be used to build and calibrate a groundwater flow model and determine how changes in sea level may impact flooding events on the barrier island in the future. I look forward to presenting the results to the department soon! But for now, I have to duck back behind the computer and get back to work. Cheers!



James Owers, John Woods, and Alex Manda examine sediment in a core while constructing a monitoring well on Bogue Banks.

Sedimentary Petrology and Stratigraphy Lab

Sedimentary petrology and stratigraphy lab students Kelsey McGee and Jonathan Noles, are studying under Dr. Donald W. Neal. Kelsey McGee is conducting a petrographic and diagenetic study of the chert-bearing layers of the Onondaga Limestone in New Jersey. Polished thin section microscopy, insoluble residue analysis, and X-ray diffraction will determine the textural and mineralogical components of the chert and limestone in this formation. This will further enhance mapping already performed in the region and enlighten the timing of chert formation in the limestone.



Kelsey McGee observing an outcrop of the Onondaga Limestone.

Jonathan Noles is conducting a study of the controls on natural gas production from the Gordon Sandstone in southern West Virginia. Petrophysical logs are being utilized to determine rock characteristics such as lithology, porosity and permeability. Those characteristics will be incorporated into 3-D models of the geologic framework to determine pay zones within Gordon Sandstone and the occurrence and accumulation of natural gas within the siliclastic sand bodies.

Both of these studies will help further geologic understanding within the rock record where data collection and knowledge are sparse. We would like to thank our Geological Sciences Department for assistance, experience, and funding. Also, a special thanks to our thesis advisor Dr. Neal for his patience, knowledge and assistance with our studies.

A Word from our Lab Groups

Geochemistry



Stephanie Webb

*On-board the R/V Neil
Armstrong*

I am a M.S. student in the Chemistry Department at ECU, but I conduct my thesis work in Sid Mitra's organic geochemistry lab. My thesis research deals with biochar. Biochar has been proposed as a means of agricultural waste management, energy production, increased crop yield, and most importantly as a way to offset greenhouse gas emissions and associated climate change. While many studies show the potential benefit of biochar use, my research intends to show the potential drawbacks associated with widespread biochar use. Specifically, my MS thesis research focuses on determining the concentration of oxygenated polycyclic aromatic hydrocarbons which are potential carcinogens, mutagens, and teratogens, in different types of biochar.

Dr. Mitra took Beau Benfield and me on a two week research cruise into the Gulf Stream onboard the R/V Neil Armstrong. As a result of that trip, I decided that I much prefer lab work over field work. The color of my face was green for most of the cruise.

Stephanie Webb

Dr. Terri Woods oversees the work of her geochemistry students. I am currently working in the aquifer systems of eastern North Carolina.

The purpose of the study is to use a 3D numerical model, MODFLOW, to illustrate the vertical movement of surface water and groundwater between aquifers, to either support or nullify the groundwater movements predicted by strontium-isotopic



Samantha Kofroth

Analysis (PCA) will also be conducted in order to more

fully understand the processes behind the changing chemistries of groundwater in the Castle Hayne Aquifer.

Previous studies worked on other aspects of the aquifer systems. Dr. Woods and her students have worked extensively to understand the hydrological and geochemical aspects of the Castle Hayne. Their work is relevant to many of the citizens of Eastern NC because of the huge demand for drinking water pumped from the aquifer. This lab group has produced several publications and supported several student's Master's theses. Dr. Woods' recent graduate student, Mark Akland, defended his thesis in Fall 2016.

Sam Kofroth

I am currently working in Sid Mitra's organic geochemistry lab. My thesis research focuses on the mobility of pharmaceuticals and personal care products (PPCPs) in the environment. PPCPs include the active ingredients of prescription and non-prescription drugs, cosmetics, cleansers, detergents, and fragrance products. In the past few decades, these compounds have been detected in surface and groundwater worldwide. Also, many studies have demonstrated that aquatic organisms may exhibit adverse health effects when exposed to PPCPs at present environmental concentrations. A possible attenuation mechanism of PPCPs before they reach the aquatic environment, is adsorption by solids, such as soils, as they travel through the subsurface. My research focuses specifically on the mobility of ibuprofen in three different kinds of common agricultural soils throughout the southeastern United States.



Beau Benfield

*collecting sediment
samples from Kitty
Hawk Bay, NC*

Beau Benfield

A Word from our Lab Groups

Geochemistry and Petrology

Greetings from the geochemistry/petrology lab group. The five of us (Nick Mitchell, Allison Murrie, Brett Pertunen, Alex Hammerstrom, and Tiffany Cummings) work under Dr. Adriana Heimann on a variety of projects from around the globe. Nick Mitchell studies trace elements in garnets from granitic pegmatites. This study requires a variety of analytical techniques and statistical methods. Samples of garnet from pegmatites for his study were collected from around the United States and other parts of the world including Brazil, China, Poland, and Sweden. The goals are to use the geochemistry of garnets to distinguish the two main families of pegmatites, some of which are associated with important rare metal economic deposits, and to determine the evolution of melts that formed various pegmatites.

The other major project focuses on the Skaergaard Intrusion in East Greenland. A suite of samples spanning the entire intrusion episode were collected and generously donated to our lab group by Dr. Alan Boudreau of Duke University. The samples are being used to study the causes of iron isotope fractionation in a complete igneous system. The scope of the Skaergaard project does not allow for field work, but there is still opportunity to travel. Electron microprobe analysis is being conducted at Duke University and iron isotope analysis will be conducted at the University of Wisconsin at Madison during the summer of 2017.



Tiffany Cummings (left), Dr. Adriana Heimann, and Alex Hammerstrom at the Stillwater Complex in Red Lodge MT.

In the summer of 2016, Alex, Tiffany, and Adriana traveled to the world-class Stillwater Complex in Montana to participate in a GSA Penrose Conference on layered mafic intrusions and their associated economic deposits. They had the opportunity to visit and sample the Stillwater Complex and some of its ore-bearing rocks.

Structural Geology

Dr. Eric Horsman's lab group uses structural geology and geophysics to study a wide range of geologic processes. The group is currently comprised of graduate students Matt McDaniel and Max Robinson, and undergraduate students Kim Walsh and Jacob Smith. Matt and Kim's research occurs in the Henry Mountains, located in southwestern Utah. They are studying the emplacement of igneous intrusions in the very shallow crust, along with the deformation of the overlying sedimentary rock. Max and Jacob's interests lie closer to home in the Linville Gorge Wilderness of western North Carolina. They are studying Alleghanian ductile deformation in the Tablerock thrust sheet, on the edge of the Grandfather Mountain window.



Matt McDaniel and Max Robinson taking a dip and strike in the Flanagan rock garden.

A Word from our Lab Groups

Coastal Research at the Coastal Institute (CSI), Wanchese, NC



Our research team is led by Drs. J.P. Walsh and Reide Corbett and consists of MS Geology students Ryan Gibbons, Nick Kelly, and Luke Stevens, CRM PhD student Ian Conery, and technicians Dr. Paul Paris and C.J. Cornette (recent Geological Sciences graduate). The research group works across disciplines and campuses (ECU and UNC CSI). Our research takes us to coastal systems throughout the southeast as well as areas around the world including the Gulf of Mexico, New Zealand, Antarctica, Puerto Rico, Ireland, and France. Much of the current work our lab group is actively engaged in is within North Carolina, studying estuarine shoreline change, marsh and sound sedimentation, barrier island dynamics, coastal hazards, fluvial sedimentation, continental shelf sedimentation, and sand resource dynamics. We are also wrapping up studies focused on deltaic system dynamics and groundwater-seawater interactions. The goal of our research is to understand and predict the behavior of coastal systems through interdisciplinary research in order to address public concerns, advise on coastal development issues, and support coastal management.



Students are actively engaged across this spectrum of research. Ian Conery and Ryan Gibbons are currently elucidating the history and dynamics of shelf sand resources to address issues concerning sand resources and quality for beach nourishment projects along the North Carolina coastline. Nick Kelly is currently working on Pea Island National Wildlife Refuge at “New New” Inlet to study the implications of a major breach in the Outer Banks that filled in naturally allowing the island to build on the estuarine side. Luke Stevens is in the process of completing his thesis focused on marsh sedimentation rates along a change gradient of tidal and sea level rise from North Carolina to Georgia. The projects within our group are diverse and cover a multitude of coastal environments to help address the overarching goal of our research; how do we best protect our coastal environments for future generations to enjoy?

CHaNGE: Coastal Hydrodynamics and Natural Geologic Evolution

Greetings from the Coastal Hydrodynamics and Natural Geologic Evolution group. Graduate student Brian Querry, and undergraduate research assistant Kyle Prock are working on a project detailing the origin and geological history of submarine sand ridges in Pamlico Sound, North Carolina under the guidance of Dr. David Mallinson. These ridges are located approximately 10 km west of Hatteras Inlet. We are building on the work of previous graduate students who worked towards understanding the Pamlico and Albemarle estuarine system. Many of these graduate student projects began with the work of Distinguished Research Professor Dr. Stanley Riggs.

Our present group takes a multifaceted approach that involves sedimentology, seismic profiling, micropaleontology, and hydrodynamic properties to gather information pertaining to the geological history of the submarine sand ridges. We work with other research groups including the micropaleontology group when examining foraminifera, the Coastal Studies Institute group concerning seismic profiling and GIS, and with Dr. Eric Horsman, who advises the structural geology group, on bulk magnetic susceptibility. We have been privy to many great experiences and hope to continue the excellent work of those who came before us.

A Word from our Lab Groups

Micropaleontology

The ECU micropaleontology lab group led by Steve Culver and Edu Leorri, is comprised of four graduate students and several undergraduates. The graduate students are working on two projects from around the world. Bailey Donovan and Emily Harrison traveled to Malaysia together in the summer of 2015 to collect cores from the South China Sea. With these cores, they are trying to reconstruct the paleoenvironment of the area utilizing micropaleontology. Mike Twarog is working on a similar project with a suite of South China Sea cores collected with Dr. Steve Culver during the summer of 2016. He plans to use his cores to examine late Quaternary geologic evolution of the South China Sea. Nina Shmorhun is working on a project in the North Carolina Outer Banks. With help from her undergraduate crew, she plans to evaluate coastal depositional environments and determine what foraminiferal assemblages reside within them. All in all, the micropaleontology lab group is involved in relevant global research.



Emily Harrison (left) and Bailey Donovan (right) in Sarawak, Malaysia.



Culver and graduate student Mike Twarog on the rough waters of the Setiu lagoon, Peninsular Malaysia



Dr. Steve Culver, Mike Twarog, and their beyond helpful colleagues at Universiti Malaysia Terengganu after feverishly preparing hundreds of samples

Nina Shmorhun, geologist for scale, on top of sand dunes near Jockey's Ridge, NC.



Sigma Gamma Epsilon: Epsilon Phi Chapter 2016-17



Sigma Gamma Epsilon: Epsilon Phi Chapter 2016-17

Our ECU geology students always look for ways to get more involved with the department. SGE gives students that chance. This year we have seen a substantial increase in enrollment with twenty new members. This influx of new minds promises great things for our chapter and department!

Many members are already involved in the geology community working on research projects and MS theses. They have enthusiasm and excitement for the things that SGE asks them to do. So it was no surprise when they “rocked” the annual rock and mineral sale in November. This event is always a huge hit with the beautiful rock and mineral specimens capturing the curiosity of almost everybody walking by, sometimes only to ask what some rock is or where a mineral came from. A huge turn-out of people bought items for themselves and others. The newest addition of the geology department embroidered flannels definitely helped pique interest.

What SGE does is spread interest in and appreciation for geology to those who support and love it as we do. Every year SGE is honored to donate some of the proceeds from the rock and mineral sale to the C.Q. Brown scholarship. This scholarship is awarded to a rising senior who has demonstrated excellence in their studies and encourages them to pursue their highest achievements.

SGE is excited to host another annual Pig Pickin’ which celebrates our Geology Department’s 50th anniversary! This event is always a great time with lots of food, fun, and Jean Lowry’s keg. We are hoping for a huge turnout of current students, faculty, and department alumni to help kick off the anniversary celebrations!

Along with the Pig Pickin’, SGE helps raise funds for the summer field course program. This past summer, many of our current SGE members attended the ECU geology field course. They met a fellow student from Appalachian State, who now works on paleontology research projects at the North Carolina Museum of Natural Sciences. He has graciously invited our chapter to visit the museum and learn about the amazing things he gets to see and do everyday!

Alisson Grove, Vice President

Kimberly Ann Walsh, President



Grad Students Brett Pertunen (top left), Matt McDaniel, Mike Twarog, Emily Harrison, and Bailey Donovan (bottom Right) sporting the new flannels.

2016 Department of Geological Sciences Graduates

SPRING 2016

B.S. Geology

Chartier, Ryan A.
Crawley, Andrea
Culver, Ivy C.
Fraley, Crystal A.
Hill, Joseph M.
Mays, Paul M.
Murray, Morgan E.
Padgett, Nelson A.
Penley, Ava M.
Twarog, Michael R.
Tyler, Zachary M.

M.S. Geology

Hindes, Haley E.
Reed, Devon M.

SUMMER 2016

B.S. Geology

Anderson, Tyler R.
Brightwell, Chad A.
Godfrey, Patrick M.
Graboski, Scott A.
Montgomery, Victoria M.

M.S. Geology

Adams, Emily N.
Brinkley, Scott A.
Cornette, Christopher J.
Klipp, Brian D.
Martin, Samuel Q.

FALL 2016

B.S. Geology

Guilavogui, Sao
McMurry, Shea E.

M.S. Geology

Mahoney, Robert N.
Trevisan, Adam R.

Donors to the Department of Geological Sciences 2016

Riggs Endowment

Stan & Ann Riggs
 Brian & Michelle Burgess
 James Coble
 Thomas Eure
 Glenn & Carolyn Johnson
 Rick & Adrienne Koehler
 Keil Schmid

Geology Alumni Fund

Mary Allen
 Ralph Amos
 Wells Barker
 Chris Bergren
 Richard Capps
 Christopher Corbitt
 Michael Dail
 Richard Flickinger
 Brandon Foster
 Stanley Lewis
 John Simpson

Century Fund

Michael Dail

C.Q. Brown

 Chris Schiappa
 Ram Hospitality

C.Q. Brown & Barbara

Hedgepeth Brown Endowment

Charles Q. Brown
 Christopher Bergren
 Richard Capps
 Nancy Leggett
 Sarah McKeever
 Ram Hospitality
 Scott Snyder

Bob VanGundy

Field Course Scholarship

Bob VanGundy

John & Nancy Bray Fund

John & Nancy Bray

Donors

A Wonderful Gift!

Tricia Beaver recently included the Department in her estate planning to the tune of \$250,000. The interest that this donation will provide will be the start of game-changing opportunities for Geological Sciences. Below, Tricia explains why she decided to include the Department in her plans.

I recently chose to include the Department of Geological Sciences in my estate planning. Obtaining my undergraduate degree in geology at ECU provided me with an excellent foundation for my career in the oil and gas industry. I feel very lucky to have had a profession which was both challenging and enjoyable nearly every day. And, I believe that sharing my success with the Department is a fitting tribute to the benefits I gained as a result of my education at ECU.

I am proud of the education I received and the work ethic I developed during my time in the geology program, and I believe that the best way to give back is to leave a financial gift to enhance the Department for the benefit of future geology students. I sincerely encourage other alumni to consider including the Department in their estate plans.

Tricia Beaver

B.S. Geology, 1978

East Carolina University Foundation Inc.
Thomas Harriot College of Arts and Sciences
Department of Geological Sciences

Yes, I would like to make a donation to
Support the Geological Sciences.

Please use my gift for the following:

\$_____ Geology Alumni Century Fund

\$_____ Geological Sciences Fund

\$_____ C.Q. Brown Scholarship Fund

\$_____ Stan and Ann Riggs Endowment

\$_____ C.Q. Brown and Barbara Hedgepeth Brown Endowment

___ Check Enclosed (Payable to the ECU Foundation, Inc.)

___ Please charge my credit card

___ Master

___ Visa

___ American Express

Card Number: _____

Expiration Date: _____

Name: _____

Address: _____

City: _____ State: _____ Zip code: _____

Phone: _____

Email: _____

Copy and mail to : ECU Foundation, Inc.
2200 S. Charles Boulevard
Greenville, NC 27858