THE UNIVERSITY of NEW ORLEANS

Department of Earth & Environmental Sciences

2012

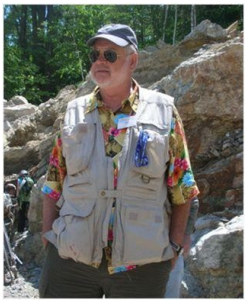
Newsletter #33 October 2012

A message from the Department Chair

Greetings to all our Students, Faculty, Alumni and Friends:

Here we are in late October and it's time to get the 2012 Earth and Environmental Sciences Newsletter out. It seems that the last year has flown by. It has been a difficult year, though, with the change from the LSU system to the University of Louisiana system and huge budget cuts for the University of about 12 million dollars. The university cut around 40 positions mainly through retirement and people leaving. Budgets have been cut and no hiring to replace lost faculty positions is possible. The good news is that our department did not lose any faculty or staff and two of our professors, Martin O'Connell and Ioannis Georgiou were promoted to Associate Professor. In spite of all these difficulties, the department continues to do well. Over the last few years we have steadily added new majors and now enrollment is up to around 140 majors. It is only with the dedication of our faculty and staff that it has been possible for our department to maintain our excellence in teaching and research that has been the hallmark of our department over the years. External research funding exceeded 3 million dollars last year. I extend my thanks to every one for your hard work and commitment which keeps our department strong and moving forward during these difficult times. I particularly want to thank our Departmental Manager and Assistant to the Chair, Linda Miller, for her support and dedication. She keeps the department running smoothly and expertly manages the departmental finances.

The Department has implemented new programs to address the University goals of greater student retention. This year we established a student-mentoring program with volunteers from our Sigma Gamma Epsilon geology honor society. Additionally, we have instituted a new walk-in tutoring laboratory for EES undergraduates staffed by graduate students. The lab is available 18 hours a week. Also, opportunities for undergraduate research have increased greatly. Undergraduate EES majors completed twenty-four undergraduate research projects last year and several were presented at professional meetings.



Department Chair, Dr. William (Skip) Simmons

Through diligent recruiting efforts, we now have a very good group of 19 M.S. and 9 Ph.D. graduate students. Twenty are on either GA or RA support. Eight of these are from outside Louisiana. Twenty of these are in the coastal and environmental studies concentration, including research on hydrodynamics, geomorphology, environmental management and aquatic ecology. The remaining eight graduate students are doing research in the more traditional geologic areas of sedimentology, petroleum geology, igneous petrology and mineralogy

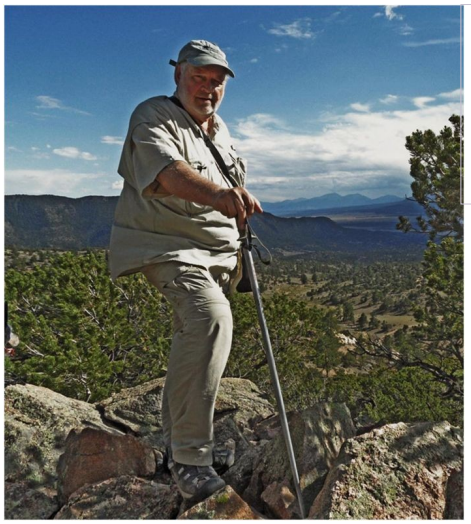
Thanks to the generosity of our Alumni and Corporate donors, in 2012 we awarded about $15,000 in scholarships to 45 students. In addition we were finally able to purchase two new red departmental vans for student field trips (check out the picture below). Funding came from donations to our field vehicle fund and funds released from Dr. Reed's salary last spring while she served as an Arthur Maass-Gilbert White Fellow with the U.S. Army Corps of Engineers. It was a bit of a tough sell to some in the administration who don't seem to understand how important hands-on instruction and experience in the field is. But, finally after 2 years of no vehicles, we're "on the road again". I broke the vans in last summer with a Rocky Mountain Field trip through Colorado, Wyoming, Montana, and North Dakota. This fall there have been class trips to the Appalachian Mountains for structural geology, to Mississippi for geomorphology and a trip to Arkansas for stratigraphy. Remember those great trips you took years ago? Thanks to all of you supporters we are providing those experiences for our students again. We need your continued support more than ever. Please consider a donation to help students with field trip expenses.

I look forward to seeing you at the annual department mineral auction. Come have some fun, buy some samples, and support your department. Remember – bid high - bid often. All the best, Skip

OUR NEW VANS

POINTS OF INTEREST

- **Current Faculty and student info.**
- **Student Organizations, SEES, SGE, AAPG**
- **Minority Education Program**
- **Student Awards and Scholarships**



MP^2 Research Group

*Dr. William (Skip) Simmons,
UNO Research Professor, Department Chair
*Karen Webber
*Alexander Falster

The **MP^2** research group, the final bastion of hard rock geology in Earth and Environmental Sciences, is still here and going strong. **MP^2** stands for Mineralogy, Pegmatology, and Petrology (http://pegmatology.uno.edu/). Our specialty is Pegmatology - the investigation of pegmatites, including their mineralogy, geochemistry and genesis. We continue our collaboration with the Gemological Institute of

America in research on gem minerals, especially tourmaline. We are actively involved in field research on pegmatites, with a number of students working on pegmatites in Maine. In May-June of 2013 we will host the 6th International Symposium on Granitic Pegmatites, "PEG 2013" in New Hampshire and Maine.

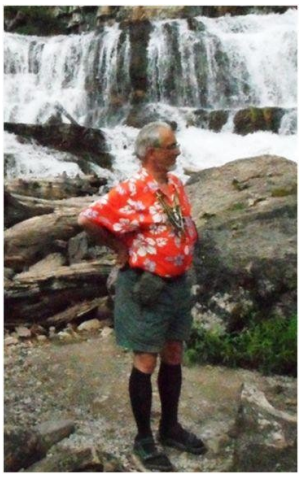
MP^2 group also presented 3 papers at the Rochester Academy of Sciences meeting in Rochester, New York in April. Skip also gave an invited lecture at the Sinkankas Symposium in Carlsbad, CA on "The mineralogy of Topaz".

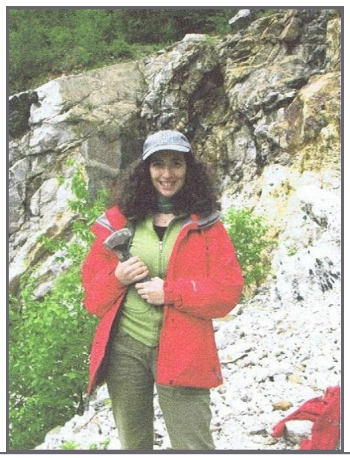
In May both Skip and Karen presented invited papers at the Maine Mineral Symposium in Augusta Maine.

In June the **MP^2** research group conducted the 11th annual Pegmatite Workshop in Poland, Maine. The Workshop is a weeklong short course on pegmatites that includes lectures and daily fieldtrips to Maine's most famous pegmatites (http://

homepage.mac.com/rasprague/PegShop/intro.html). Our textbook for the workshop, *Pegmatology,* continues to be popular. The course is a great opportunity for students to learn about the latest developments in pegmatite research and investigate pegmatites first hand with pegmatite experts. The workshop has been very successful since its inception and has attracted several hundred participants, including students, miners, and professionals from Brazil, Italy, Spain, Portugal, Germany, Sweden, Canada, Argentina, Germany, France, Australia and Russia. This year 12 students from UNO attended the Workshop and we recruited 4 new graduate students into the **MP^2** program. Donations to support student attendance of the workshop are always welcome.

MP^2 sponsored a field course on the Geology of the southern and central Rocky Mountains. Students presented papers on sites that we planned to visit on the trip and we bound the reports together to make our field guide. We had thirteen participants and the trip was two weeks long. We visited pegmatites in Colorado, Black Canyon of the Gunnison, Colorado National Monument, the Book Cliffs, Dinosaur National Monument, the Uinta Mountains, the Green River Formation and Fossil Butte, the Green River Basin, a float trip on the Snake River, geology and hiking in the Tetons, Yellowstone National Park, the Absaroka volcanic field, the Beartooth Mountains, the Bighorn basin, the Wind River Canyon, Devils Tower and Mount Rushmore.





Dr. M. Encarnacion Roda-Robles from Bilboa Spain, was invited to be a Visiting Research Professor for the Spring 2012 Semester .

PEGMATITES RULE!

MP² Graduate Students:

PhD Student Jonathan South: NYF Pegmatites and Granites of the Llano District, Llano Co., Texas

Andrew Boudreaux: Graduated with BS in EES from UNO. **Graduate Research:** Mineralogy and Geochemistry of Anorogenic Granitic Pegmatites of the Erongo Mountain Intrusive Suite Namibia

Kimberly Clark: Graduated with BS in EES from UNO. **Undergrad Research:** Pegmatite country rock interaction, Mt. Mica pegmatite. **Graduate Research:** Wall – Rock interactions between the Mt. Mica Pegmatite and the Amphibolite/Mica Schist Host West-Central Maine

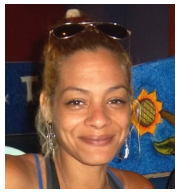
Leah Grassi: Graduated with BS in EES from UNO. **Undergrad Research**: Survey of Salt Dome mineralogy :in the Gulf Coast Region. **Graduate research**: Mineralogy and Geochemistry of the Usakos Gem Tourmaline Pegmatite, Usakos, Namibia

Karen Marchal: Graduated with BS in EES from UNO. **Undergrad Research**: Micas of the Mount Mica Pegmatite. **Graduate Research:** Chemical Evolution of Muscovite and Lepidolite in the Mt. Mica Pegmatite, Maine

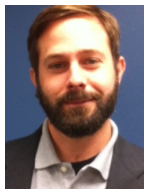
Myles Felch: Graduated with BS from U of Maine, Farmington. Graduate Research: As an incoming graduate student he will be working on a pegmatite related research project in conjunction with the Maine Mineral & Gem Museum.

PEGMATITES RULE!

MP² Undergraduate Student Research Topics:



Sherrie Dix: Petrography and heavy mineral assemblage of a siderite/rhodochrosite and blue tourmaline unit in the Mount Marie pegmatite, Oxford Co., Maine



Jon Guidry: Heavy accessory mineralogy of the biotite schist country rocks around Pegmatites Oxford County, Maine

JP Marlborough: Heavy accessory mineralogy of the metamorphic calc-silicate country rocks around the Sebago batholith in Maine

Mark Johnson: Heavy accessory mineralogy of the Kosnarite-McCrillisite unit and Wall Zone in the Mount Mica pegmatite, Paris, Oxford Co., Maine.

Amanda Lacour: Whole-rock compositions of granitic rocks of the Sebago batholith, Maine

Susanna Kreinik: Phosphate classification (Spring 2012) Composition of apatite from pegmatites in Oxford Co., Maine.

On the road in our new red vans.

Patrick Smith, PhD Student working with Dr. O'Connell and the Nekton Research Lab

May 2008, I graduated from Augusta State University in Augusta, GA with a BS in Biology. After graduation, I knew that I wanted to continue my education in grad school, but I wanted to gain some real world experience before enrolling in a program. So, I worked as a fisheries technician for the Bureau of Land Management in Dillon, MT for 6 months focusing on native fish restoration. After this seasonal position, I moved back home to Augusta, got married to my beautiful wife, Greer, and began work as a Research Scientist for a local NGO called Southeastern Natural Sciences Academy (SeNSA). At SeNSA, I had the opportunity to work on several different projects including designing wetlands for waste water treatment, biochemical oxygen demand analyses, and aquatic macroinvertebrate sampling and identification. The main focus of my work involved using various methods to describe the endangered shortnose sturgeon's (*Acipenser brevirostrum*) spawning habitat. One of the methods we employed involved the use of underwater acoustic telemetry tracking. I really enjoyed this research and wanted to do something similar for my graduate school research.

After looking into various programs across the country, I chose to study red drum (*Sciaenops ocellatus*) in Bayou St. John using underwater acoustic telemetry in Dr. Martin T. O'Connell's Nekton Research Lab at UNO for graduate school. To be honest, I had never heard of UNO before reading Dr. O'Connell's position announcement at a fisheries job board. However, after reading about the University and his work I decided it may be a great fit. After visiting New Orleans and UNO I knew that I wanted to continue my education here. I started here in January of 2010 and completed my Master's thesis, "Fish Assemblage Dynamics and Red Drum Habitat Selection in Bayou St. John and Associated Urban Waterways located within the City of New Orleans, Louisiana", in May of 2012. After completion of my thesis, I decided to stay at UNO in Dr. O'Connell's Lab for my PhD. My current research involves modeling red drum habitat selection and behavior. This is a two-part study that involves the comparison between impounded and unimpounded red drum from within the Lake Pontchartrain Basin. To achieve this, I am utilizing remotely recorded acoustic telemetry techniques to determine movement patterns and multivariate statistical models to compare these data to a suite of physical, chemical, and biological variables. I am also involved in many side projects, including: studying the natural (and possibly unnatural) population fluctuations of fishes of the Order Cyprinodontiformes with Post-Doc, Dr. Tom Lorenz. In addition, I am concurrently pursuing an MSc in Mathematics with an emphasis in Applied Statistics under Dr. Linxoing Li.

Dr. Martin (Marty) O'Connell, Associate Professor

My lab, the Nekton Research Laboratory (NRL), continues to conduct various research projects ranging from estuarine organisms in the northern Gulf of Mexico to freshwater mussels in central Louisiana to coral reef work in Madagascar. Recently with the help of Senior Biologist and Database Manager Meg Uzee O'Connell from the Pontchartrain Institute for Environmental Sciences (PIES) we secured a $1.2 million cooperative agreement with the Bureau of Ocean Energy Management (BOEM) to study crab and shrimp populations in the northern Gulf of Mexico. The five-year study will focus on tracking the abundance and distribution of blue crabs, brown shrimp, and white shrimp throughout the northern Gulf of Mexico, which will yield useful baseline data. Study partners brought in by UNO include scientists from the Gulf Coast Research Laboratory at the University of Southern Mississippi, the University of South Alabama, and the Dauphin Island Sea Lab. Simultaneous sampling will occur from Lake Borgne in Louisiana to Mobile Bay in Alabama. The key goals are to better understand the natural variability of these valuable species, and how they respond to and recover from disasters such as hurricanes on a large, multi-state, multi-year scale.

Research Manager and Senior Biologist Chris Schieble (PIES) continues to work on a two-year project on the impact of commercial crab traps on finfish bycatch. More recently Chris has had to deal with repairing damage caused by Hurricane Isaac to the Shea Penland Coastal Education and Research Facility located on Chef Menteur Pass in eastern New Orleans. Many pieces of research equipment were lost to the storm and Chris is spearheading rebuilding efforts. He has worked tirelessly to get our research team back up and working again.

Post-doc Tom Lorenz continues to monitor for invasive tilapia that may have survived an eradication effort spear-headed by the Louisiana Department of Wildlife and Fisheries (LDWF) in the vicinity of Port Sulphur, Louisiana. Dr. Lorenz is in the final year of this monitoring project and hopes that the population of this invasive fish will not increase. He is also conducting research on determining how another invasive fish, the Rio Grande cichlid (*Herichthys cyanoguttatus*), uses thermal refugia to survive cold winter periods. For this latter project, Dr. Lorenz is working closely with undergraduate independent researchers from both EES and the Department of Biological Sciences.

Since the last EES Newsletter, Scott Eustis successfully defended his thesis in November 2011. The title of his thesis was: "Bycatch of the Lake Pontchartrain Basin inshore shrimp fishery and its effects on two sea catfish species: the gafftopsail catfish (*Bagre marinus*) and the hardhead catfish (*Ariopsis felis*)." One of the major findings of Scott's research was that these two species may have actually benefitted from increased trawling in the last half century because they feed on dead organisms discarded from shrimp trawls. After finishing his thesis, Scott successfully procured a permanent job with the Gulf Restoration Network.

This fall, Jonathan McKenzie (Ph.D. student) is scheduled to defend his dissertation research on lemon sharks at the Chandeleur Islands, including his investigation into the genetic relationships within the population. Shane Abeare (Ph.D. student) continues his research in the Bay of Ranobe, Madagascar, where he is applying satellite remote sensing in the study of coral reef fish spatial ecology. He is particularly interested in the spatiotemporal dynamics of fish populations and ontogenetic shifts in habitat-use. Patrick Smith (Ph.D. student), successfully defended his Master's degree in spring 2012 and continues working on a three year grant to study habitat choice in native red drum (*Sciaenops ocellatus*) that have been restored to an urban fishery in New Orleans. The title of his thesis was "Fish assemblage dynamics and red drum habitat selection in Bayou St. John and associated urban waterways located within the City of New Orleans." Will Stein (Ph.D. student) was the first biologist to publish a scientific paper showing evidence that tarpon (*Megalops atlanticus*) spawn off the coast of Louisiana. The title of the paper is "Evidence of spawning capable tarpon (*Megalops atlanticus*) off the Louisiana coast," and it appeared in the journal *Gulf and Caribbean Research*. His co-authors on the paper were Dr. Nancy Brown-Peterson, Jim Franks, and Dr. Martin O'Connell. New Ph.D. student Jonathan (JD) Davis has been hired to study how bull sharks (*Carcharhinus leucas*) use Lake Pontchartrain. He will be capturing and radio-tagging bull sharks in estuarine habitats and tracking their movement patterns both in and outside the Lake. Rebecca Cope (M.Sc. student) is analyzing important baseline data on larval fishes from the natural passes that enter Lake Pontchartrain. The purpose of Rebecca's thesis research was to better understand how the closing of the Mississippi River Gulf Outlet would affect the densities of larval organisms in the Rigolets and Chef Menteur Pass. She hopes to defend in spring 2013. Graduate student Angela Williamson M.Sc. student) has been studying the federally threatened Louisiana pearlshell mussel (*Margaritifera hembeli*) with the goal of determining its possible fish host species. She works in collaboration with the U.S. Fish and Wildlife service and hopes to have a second shot of capturing female mussels that are ready to release their offspring (i.e., gravid) next spring. New M.Sc. student Arnaud Kerisit will be examining how larval invertebrates use the natural and artificial passes that enter Lake Pontchartrain, building on Rebecca Cope's work on larval fishes. Arnaud has already developed a reference collection as an undergraduate student working in the NRL and now brings his expertise to the next level.

Top row left to right: Chris Schieble, Meg Uzee O'Connell, Will Stein, Shane Abeare, Tom Lorenz and Jon McKenzie. Bottom row left to right: Rebecca Cope, Jonathan Davis, Angela Williamson, Arnaud Kerisit, Patrick Smith and Scott Eustis.

Dr. Mark Kulp, Associate Professor

Greetings everyone! I hope this newsletter finds you all doing well, having navigated through another year of many joys and few sorrows. All is well on this end, academic life is good and the family is doing great. Mary is staying extremely busy right now with her upper-school position at St. Martins Episcopalian school in Metairie and my son Jonah is on the cusp of his second birthday. He is quite the handful these days for us. As is expected for this age he is into everything and always on the move… but there is truly nothing quite like coming home to an extremely jubilant shout of "DADDY".

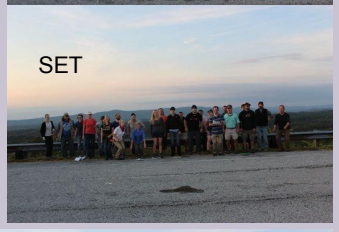
As always, this past year was another busy one. It started out in the Spring 2012 semester with essentially teaching two new courses: Coastal Geomorphology and Methods in Earth and Environmental Science, which now has a laboratory component. Coming up with new material for two courses each week was quite the challenge but we did get through it. I think that some students were not quite as thrilled as I was but from a lecturers perspective no course is perfect the first time it runs and I look forward to improving both of them for Spring 2013.

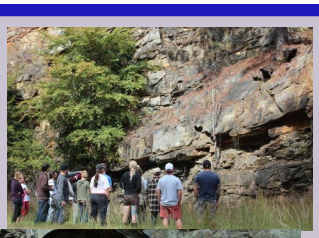
Fieldwork-related research was at a minimum this past year, after coming off several consecutive summers of a lot of field activities. There were several projects that took Coastal Research Laboratory personnel into the northern Gulf waters or Sapelo Island South Carolina (Dr. Georgiou project with Shell) but overall it was a relatively quiet year for fieldwork. Much of the effort this past year was spent trying to tie up loose ends on existing projects or having outside groups bring samples and cores to us for us to interpret and incorporate into their projects. Overall we made some pretty good progress on finishing up existing work and Dallon Weathers, Phil McCarty and Mike Brown continue to keep things running smoothly with our coastal database, survey equipment, and boatyard.

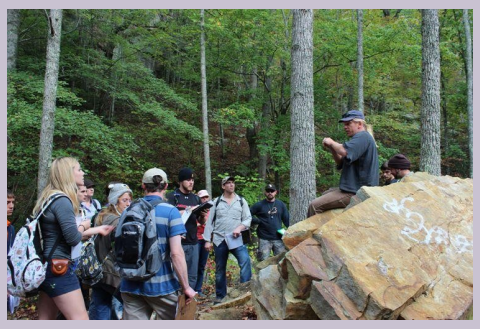
At the moment MS candidate Ben Kirkland is preparing to defend his thesis early October, he has already started at a very good position with Nexus in Texas and John Labold is working feverishly to present some of his work at the annual GSA meeting and finish up his thesis. Jordyn Spizale and Ross Reahard continue to make good progress and the goal is to have all of these students wrapped up with their work by the end of Spring 2013.

If you are ever in the area be sure to swing by and say hi. All the best. Mark

Structure Geology Class Trip to Mt. Cheaha Alabama



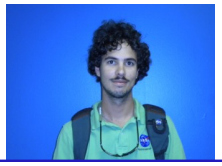


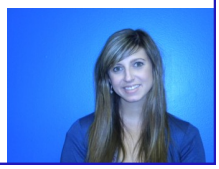


DR. KULP'S COASTAL RESEARCH LAB CREW and GRAD STUDENTS

THE CREW: Phil McCarty, left; Mike Brown, middle and Dallon Weather, right.

THE GRADS:
Ben Kirkland, left; John LaBold, right; Ross Reahard, center and Jordyn Spizale, lower-right;





Dr. Ioannis Y. Georgiou, Graduate Coordinator and Associate Professor, Coastal Oceanography

At a site in Sapelo Sound during low tide; notice the flood and ebb channels around the bar, and the ebb oriented bed forms

Robert Clark (left), Dallon Weathers (center) and John Burnette (right) during a flow survey at a recent cut near Bohemia (nicknamed Margi-Gras Pass), using an Acoustic Doppler Current Profiler

This past year has gone by faster than any previous year. It seems it was only a few weeks ago that we were performing spring flood flow measurements in the delta, except we are well into the fall semester. I guess as another colleague stated in last year's newsletter, time flies when you are having fun. We have some great updates to report on. My lab – Coastal and Environmental Hydrodynamics - continues to perform research centered in coastal Louisiana, while at the same time expanding our research in other areas, through collaborations. The lab conducts basic and applied research in coastal oceanography, coastal geomorphology, and specifically the hydrodynamic and transport processes in tidal and fluvial systems, storm induced sediment transport on barrier coastlines, and deltaic sediment transport.

The lab continues research work in Sapelo Sound with collaborators from Boston University (Drs. Duncan FitzGerald and Zoe Hughes). Our second field visit took place early last summer, where we collected additional hydrodynamic and seismic data to study laterally accreting surfaces in shallow marine environments, and associated geomorphologic processes. We presented preliminary results at two conferences (Southeast Tidal Creek Summit, and the AGU Chapman Conference). We continue our research in deltaic sedimentation during spring floods in the modern delta, and primarily near depositional centers such as mouth bars and crevasse splays. Results from these last two years were submitted for publication at AGU. Recently completed research on the Myrtle Grove sediment diversion was published in the Journal of Hydrology, along with two more submissions resulting from other research currently in review, one co-authored with Dr. Reed, and another with a colleague in Engineering.

Most recently our lab became part of a new effort to study hydrodynamics and sediment transport processes in the lower Mississippi River, in collaboration with scientists from the Water Institute of the Gulf, the Office of Coastal Protection and Restoration, and the US Army Corps of Engineers. Our research will focus on saltwater intrusion dynamics near the modern delta, and the freshwater/saltwater exchange as a function of River flow, using numerical oceanographic models validated with field observations collected by collaborators at the Texas Institute of Geosciences. We are at the beginning of this research, and we are excited to continue working within this larger community of scientists, addressing contemporary issues in the Mississippi.

Presently, there are five graduate students in the lab. But first let's congratulate our recent graduate, Robin Schroeder (Dec. 2011) who completed her Masters studying tidal exchange flows in Bayou St. John, and resulting changes from the removal of hydraulic control structures. Robin continues to work as an Environmental Consultant with a company on the north shore. Kevin Trosclair (left) is nearing completion of his Masters research on non-linear wave transformation at salt marsh edges and their contribution to marsh edge erosion. Alison Sleath Grzegorzewski is continuing her Doctoral research on event driven morphological response of barrier islands during storms. Robert Clark is studying the evolution of the South Pass distributary branch of the Mississippi River, and specifically the reworking of distributary mouth bars by marine processes, and the subsequent development of new barrier islands and tidal inlets on the western side of south pass, in an attempt to build a morphodynamic evolutionary model of this system. John Burnette is finalizing his prospectus with a slight change in direction, following the disturbance of his study site by hurricane Isaac. Finally, Michael Eller, a student that I am co-advising in the college of engineering, is continuing his doctoral research on the environmental and economic implications from desalination operations as a progressive approach to Ocean Thermal Energy Conversion.

Tidal bars in Sapelo Sound, Georgia, showing ebb-oriented bedforms (up left), tidal deposits (up right), and transient bedforms just before flood tide (bottom; Dr. Zoe Hughes is in the foreground, and Carol Wilson in the background).

Dr. Royhan Gani, Assistant Professor

In clastic sedimentology, although my research experience spans from continental fluvial to deep-marine depositional environments, I particularly work on shallow-marine Cretaceous strata in the Western Interior Seaway. In collaboration with Imperial College London (Dr. Gary Hampson) and Bergen University Norway, I'm actively involved in ACS-PRF (Petroleum Research Fund) and industry-supported research on facies architecture, reservoir analog, ichnology, and sequence stratigraphy of Cretaceous strata in the Book Cliffs.

After an intense work-day during fieldwork in the Book Cliffs, Utah, PhD student Hiranya Sahoo is resting on his personal cozy, yet giant, cushion.

Currently, several students are working in my lab. PhD student Hiranya Sahoo (top right) is investigating stratigraphic compartmentalization of Cretaceous coastal-plain and fluvial deposits of the Blackhawk Formation (Book Cliffs, Utah), which is an outcrop analog for producing tight-gas reservoirs in the adjacent Uinta and Piceance Basins. Hiranya has completed an internship with Shell during summer of 2011, and will defend his PhD dissertation during spring of 2013. Prabhat Neupane successfully defended his MS thesis (fall 2011; co-advised by Dr. Nahid Gani) on the incision history of the Ethiopian Plateau using river-profile analysis. He is now conducting his PhD research on late Cenozoic vegetation and climate change from isotopic analysis of the Siwalik strata of the Nepal Himalayas. Undergrad student Corey Hinyup (left) is currently conducting a senior thesis on 3D point-bar geometry using virtual 3d outcrop data from the Cretaceous Blackhawk Formation, Book Cliffs, Utah. After completing his MS study (spring 2012) on sequence stratigraphy of the Book Cliffs strata, Andrew Ranson is now working at Chevron (Bakersfield, California) as a full-time geologist.

Undergrad student Corey Hinyup is working on a senior thesis.

I teamed up with Dr. Nahid Gani, an assistant professor at Western Kentucky University, to study the birthplace of all human beings, the East African Rift System, to understand geological controls on human evolution during early Pliocene. Particularly, we are investigating the Ethiopian Plateau and adjacent regions to understand the link among tectonic uplift, climate change, and hominin evolution. One of our recent papers published in Nature Communications ("River-margin habitat of *Ardipithecus ramidus* at Aramis, Ethiopia 4.4 million years ago") had caught wide media attention. We have also launched a new research initiative, in collaboration with Brown University, to understand late Cenozoic tectonic, climate and incision coupling in the Nepal Himalayas. To learn more about my academic activities, you can visit my webpage: http://ees.uno.edu/Gani_Royhan/index.html

PhD student Prabhat Neupane is working on the Siwalik rocks of the Nepal Himalayas.

Stratigraphy class (spring, 2011) field trip to Ouachita Mountain, Arkansas.

Hiranya Sahoo, PhD student with Dr. Royhan Gani

I am focusing on stratigraphic evolution of fluvial system and channel-fill architecture of the Cretaceous Blackhawk Formation, Wasatch Plateau, Utah. This integrated fluvial rock record analysis has two fold objectives, 1) sedimentologic-stratigraphic analysis of fluvial dynamics from preserved strata, and 2) utilizing extracted knowledge from these analyses towards improved understanding of subsurface fluvial reservoir complexities. Using outcrop, core, GPR, and LIDAR data, study results robustly illustrate analogous geological uncertainties critical to fluvial reservoir productibility and profitability, and constitute an outcrop analog for those producing fluvial tight gas reservoirs in the adjacent hydrocarbon-prolific Uinta and Piceance Basins of Utah and Colorado. Ongoing PhD research has been benefited by financial support from Chevron, ExxonMobil, American Chemical Society Petroleum Research Fund, AAPG, GCSSEPM (Gulf Coast Section SEPM), and IAS (International Association of Sedimentologists). Coming from India with an aim to accomplish a PhD study in US, University of New Orleans has provided me the right platform to achieve both academic and research distinctions so far. My career goal is to pursue research, either as a faculty in a university or as a research and development geoscientist in Petroleum industry.

Society for Earth and Environmental Sciences


SEES Members

The Society for Earth and Environmental Sciences (SEES) is a non-profit student organization at the University of New Orleans focused on Earth and Environmental Sciences. The organization hosts the annual Mineral Auction which is a fantastic event and provides all operating funds for the organization. With these funds, SEES was able to provided four Earth and Environmental Sciences students with scholarships. SEES also contributed funds for two students which enabled them to present their research at field -related scientific conferences. SEES invested funds into the Earth and Environmental Sciences Department, such as the purchase of an industrial size coffee maker for the front office which faculty, staff and students can take advantage of every day. The organization invested in a central organizational computer to store all related files for future organizational operations. SEES also invested in an official SEES cooler and purchased permanent supplies for the Mineral Auction including a dedicated pressure washer and various materials. In addition, SEES hosted it's annual Meet and Greet for new and transfer students as a way for them to become familiar with their department. SEES hosted several EES-related talks to inform students of the variety of research taking place in their fields. SEES also held several BBQ's, a Crawfish Boil and a Movie Night to bring Earth and Environmental Science students together to form lasting relationships and foster an educational environment that is uniquely the Earth and Environmental Sciences Department. The members also benefitted from the annual End-of-Year Trip. Each year the organization provides transportation and lodging to a geologically-significant destination in order for students to gain field experience that might not be attained in the normal academic setting, which is so integral to the field of Earth and Environmental Sciences. The Society for Earth and Environmental Sciences continues to promote academic success and community involvement through volunteer activities year after year and remains a vital component of the Earth and Environmental Sciences Department. Kim Clark, President


Gatlinburg SEES Trip

A.A.P.G. UNO, Student Chapter

During the 2011-2012 school year, the UNO Student Chapter of AAPG hosted and/or participated in several exciting events. We hosted the following three guest lectures: (1) Art Johnson on "Gas Hydrates: Reality and Myths Regarding an Emerging Energy Resource" at the Bulldog, Mid-City, (2) Zhixiong Shen on "Spatial and Temporal Patterns of Tectonic Subsidence in Coastal Louisiana" at UNO, and (3) Bryan Stephens on "Basement Controls on Subsurface Geologic Patterns and Coastal Geomorphology Across the Northern Gulf of Mexico: Implications for Subsidence Studies and Coastal Restoration" at UNO.

Another important event the student chapter partook in was the annual Imperial Barrel Award competition. The 2011-2012 team consisted of graduate students Robert Clark, Kevin Trosclair, and Dillion Asher, and undergraduate student Corey Hinyup. Other noteworthy things the chapter did include the creation and sale of commemorative shirts for the naming of a new phosphate species after UNO's own Al Falster, joint participation with SEES and SGE in departmental events, and networking and collaboration with NOGS.

The UNO IBA TeamFrom left to right: Kevin Trosclair, Robert Clark, Corey Hinyup, and Dillion Asher.

At the end of the spring semester, the chapter elected the following persons to the executive board: Leah Grassi, president; Drew Boudreaux, vice-president; Felicia Peters, secretary; Robert Clark, treasurer.

We look forward to another great year for the 2012-2013 term! Drew Boudreaux, President- UNOSC-AAPG, 2011-2012

Sigma Gamma Epsilon SGE

As an honor society in the Earth and Environmental Sciences, Sigma Gamma Epsilon's first and foremost goal has been student success. We also feel that students should gather personal and professional experience in addition to their academic experiences. As such, we of SGE dedicate our time and energy to our community and department.

SGE is excited to announce our continuing tutoring program, and the sponsoring of our first Graduate Seminar to prepare future graduate students in the department. Our community involvement has consisted of participating in: Save Our Lake – Beach Sweep, judging the Holy Cross Science Far, sponsoring an exhibit at Rockin' in the Swamp, and volunteering with Super Saurus Saturday at the Childrens Museum.

This semester, we kicked off a new mentoring program in which incoming freshmen or transfer students are assigned a mentor. This program is designed to integrate incoming students and to help familiarize new members with our department, build student relationships, and to give academic counseling when needed. By providing these services, we hope to increase retention within EES.

This May, Andrew Boudreaux was awarded the Tarr Award in recognition of his exemplary leadership, commitment to SGE and contribution to the EES department. In addition, undergraduate students Andrew Boudreaux and Leah Grassi, along with graduate students Andrew Ranson (left) and Ben Kirkland (upper right) were adorned with honor cords during the graduation commencement ceremony last May.


Shima and Lily cutting up

There are 22 active SGE members, and on November 2, 2012, seventeen new members will be inducted: Maiadah Bader, David Brassieur, Rachel von Bodungen, Rachal Carter, Angela Denniston, Raechel Fisher, Jon Guidry, Andrew Lade, Kathryn Langley, Joseph Jenkins, Matthew Santiago, Emily Harper, Myles Felch, Whitney Welch, Cris Silva, Brooke Weiss, Amanda Jo Zimmerman. Karen Marchal, President

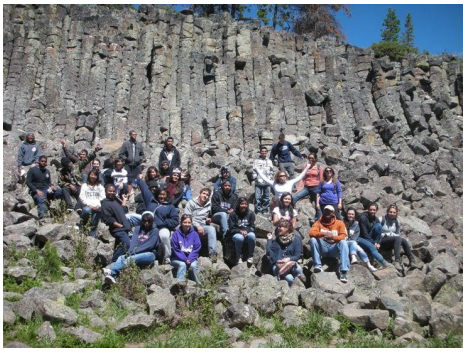
2012 Summer Geoscience Minority Program for High School Students NSF Grant "Minority Education Through Traveling and Learning in the Sciences (METALS)

Each summer since 1974 our department has facilitated a geosciences field trip for minority high school students from the New Orleans area. Ours is the longest running program of its kind for minority students. Our goal is to provide exciting outdoor learning experiences for promising students to help kindle an interest in geology and related sciences. The long term goal is to increase minority participation in the geosciences at UNO and in higher education and the workforce in general. To this end, our currently funded grant from NSF, METALS is a partnership between geoscience diversity programs at San Francisco State University (SFSU), the University of Texas at El Paso (UTEP), the University of New Orleans (UNO), and Purdue University, for which each participating institution recruits about 10 minority students each summer and the four groups meet to travel together to learn about the geology of a part of the US familiar to the hosting university.

2012 was year three for the METALS program, so we are building on our previous experiences and hopefully learning from them! This year, our featured field trip was to the national parks of Wyoming.

We selected 11 students from 26 applicants to participate in the Wyoming field trip. We also ran a Louisiana field trip for which we recruited 7 students. So a total of 18 students benefitted directly through their participation in this summer's activities.

The Wyoming Field Trip was 14 days in all, including travel days. We departed from New Orleans airport for Salt Lake City, UT early on June 11 and returned late on June 24. The itinerary included comparing the Great Salt Lake and Bear Lake; learning about geologic time at Fossil Butte National Monument; three days exploring and hiking in Grand Teton National Park; fossil collecting at Devils Kitchen; exploring the hot springs at Thermopolis; and three days exploring the caldera and classifying thermal features at Yellowstone National Park.



In addition to learning about the geology of these amazing places, the students learned a lot about each other of course! They participated in fun team-building activities, got to swim in hot springs, play in the snow, and socialize along the way. They experienced life in KOA campgrounds, sleeping in cabins, and sharing delicious meals cooked by teams composed of leaders and students. They also interacted with a whole slew of experienced field geologists from UNO, UTEP, SFSU, and Purdue. These individuals' passion for geology set the tone, and provided a perfect environment for young people to gain an understanding of what makes a geologist tick.

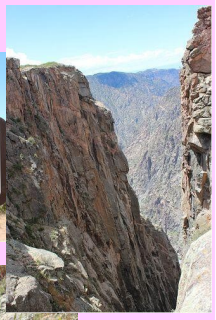
The Louisiana field trip was 8 days in length in which the group traveled to the Old River Control Structure to learn about the role of our great rivers in Louisiana's geology and the human controls placed on the system. They explored the Atchafalaya floodway to consider how people live with the threat of flood waters such as those of 2011. They traveled to the beaches at Grand Isle and Elmer's Island where they learned about shoreline processes from Dr. Mark Kulp and participated in measuring elevation profiles using simple survey techniques lead by Dr. Ivan Gill. They also visited coastal restoration projects and stayed at UNO's Coastal Education and Research Facility, where they took a cruise on the RV Percy Viosca, Jr. to the Lake Borgne Surge barrier, New Orleans's massive, newly constructed protection from storm surges. These students expressed their passion and concern for their home state's coastal land loss issues. Although the Louisiana trip is not as "exotic" as the Wyoming trip, we saw the students make a personal connection to the experience.

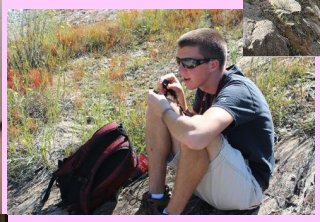
The next steps are to continue to provide mentorship for students who have successfully completed the field trip experience and are interested in further study, and to recruit new students for summer 2013. If you are interested in providing assistance to this program by working with the students, or getting involved in some way, please contact Dinah Maygarden at dmaygard@uno.edu, or Heather Egger at hlgordon@uno.edu.

Linda Miller is the Assistant to the Department Chair but her work goes above and beyond that title. She keeps the Chair in line and coordinates faculty business skillfully. She authors, edits and produces the Departmental Newsletter. The students point out “She holds down the fort and is the glue for the entire EES department. When a student or anyone is in need of assistance, she is quick to stop what she is doing and assist them with their needs. In addition to all of the work she does for the EES department such as all scheduling and paper-work needs, she also provides caffeine and love, two of the things needed for earth scientists to function. She is truly an asset to the EES department”. We couldn’t function without her. Thanks, the students, faculty and Skip.

A Picture is Worth a Thousand Words




















Student Scholarships and Awards 2011-2012

Career Advancement Scholarship from the Business and Professional Women's Foundation (BPW): Brooke Weiss

New Orleans Geological Society Memorial Foundation Graduate Scholarship Award: Robert Clark

New Orleans Geological Society Memorial Foundation, Junior Scholarship Award: Dominik Kardell

New Orleans Geological Society Memorial Foundation Graduate Scholarship Award: Andrew Boudreaux

New Orleans Geological Society Memorial Foundation Senior Scholarship: Jon Guidry

Olga Braunstein Scholarship for EES Undergraduates: Joshua Flathers, C. Mark Johnson, Dominik Kardell, Christina Varuso

Olga & Jules Braunstein Service Award Undergraduate: Andrew Boudreaux

Chevron Geology Graduate Student Scholarship: Benjamin Kirkland

Shell Minority and Women in Science Award: Sherrie Dix, Kimberly Clark, Leah Grassi, Shima Massiha, Elizabeth Thompson

AAPG Student Research Award: Hiranya Sahoo

SGE Tarr Award: Andrew Boudreaux

SEES Scholarship: Karen Marchal and Andrew Ranson

Exxon Minority Geoscience Support Scholarship: Sherrie Dix, Crystal Dunn, Shima Massiha

NOGS Scholarship Luncheon: Left to right: Dominik Kardell, Andrew Boudreaux, Jon Guidry, Dr. Georgiou, Daisy Pate, Dr. Simmons, Robert Clark

Recipients at the College of Science Convocation: Prabhat Neupane, Joshua Flathers, Kimberly Clark, Krisztian Megyeri, Karen Marchal, Hiranya Sahoo, Dr. Simmons, Leah Grassi, C. Mark Johnson, Benjamin Kirkland and Andrew Ranson

New Orleans Town Gardeners Club: Research pertaining to vegetative aspects of coastal land loss: Ben Kirkland

Geology and Geophysics Research Scholarship: Prabhat Neupane, Hiranya Sahoo, Kevin Trosclair

Gulf Coast Association of Geological Societies Student Research Award: Mary Ellison

Gulf Coast Section of Society for Sedimentary Geology GCSSEPM Award: Hiranya Sahoo

Society for Sedimentary Geology: Prabhat Neupane

Shell Oil Company Internship: Hiranya Sahoo

William W. Craig Memorial Scholarship: Robert Clark

Jennifer R. Miller Memorial Scholarship: Karen Marchal, Angela Williamson

Glenn Hebert Petroleum & Geology Scholarship: Andrew Ranson

Scholarship to attend National Conference on Ecosystem Restoration Aug 2011 including registration and hotel accommodations in Baltimore: Lindsay Dunaj

SEPM Foundation Grant: Prabhat Neupane

SEES Scholarships: Leah Grassi, Susanna Kreinik, Brittany Lamelle, Karen Marchal

Invited to present results from his thesis research at the Louisiana Chapter of the American Statistical Association, Spring 2012 Meeting: Patrick Smith

SURE Award: Karen Marchal

College of Science Dean's Award: Krisztian Megyeri

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DONATIONS AND GIFTS TO EES

The Department of Earth and Environmental Sciences has thrived in large part because of the support of our alumni and friends. Monetary contributions have allowed teaching, research, and scholarship programs within the Department to flourish during periods when state support wavers. Permanent support to the Department has been established with the creation of endowed accounts from which the interest is used to support a specific purpose. These accounts are managed by the UNO Foundation and include:

William W. Craig Memorial Award (No. 80696): an award for students who display excellence in teaching earth science.

Jennifer R. Miller Memorial Award (No. 80711): an award for graduate students who display research excellence in environmental geology

Jules & Olga Braunstein UndergraduateScholarship(No.80351): merit-based scholarships for undergraduate geology and geophysics majors

Geology and Geophysics Research Fund (No. 80633):a fund to support graduate student thesis research.

The Department maintains the Earth & Environmental Sciences Fund (No. 90243) which is used to support special projects, such as the purchase of vans, departmental seminars, special events and faculty and student travel.

Contribution to any of these funds is greatly appreciated. The preferred form of donations is a check that is payable to the **UNO Foundation** and **sent to the Department Office.** If you want to target a specific fund, please indicate the name or number of the fund on the check.

SPECIAL THANK YOU FOR YOUR GIFT (2011-2012)

Chevron Humankind Matching Gift Program

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