THE UNIVERSITY of NEW ORLEANS

Department of Earth & Environmental Sciences

2011

NEWSLETTER #32 OCTOBER 2011

Dr. William Ward, 1933—2011

I first met Bill Ward as a graduate student at an AAPG core workshop session. Introduced by another graduate student, Bill asked thoughtful, interesting questions, and showed an approachability that was rare in my experience. Over the next several years as a graduate student at another institution, I would run into Bill on joint field trips and workshops. In my time in Louisiana, Bill served as mentor, colleague and friend. It was difficult to know what Bill knew scientifically because of his astonishing professional generosity and ability to be self-effacing that bordered on the criminal.

Over the next decades, Bill helped serve as a liaison between our departments at Tulane and UNO. He was part of a group of teachers that made the department at UNO the best undergraduate geology program in the state, and I include my own in that mix. In those years, he unselfishly served on the committee of every grad student I had, including several at the University of Puerto Rico. Bill had the ability to interact with students without pretense in a way that spanned culture gaps and gaps of any other sort. He could read through theses and offer clear, constructive comments in half the time of anyone I knew. I believe that Bill graduated more Masters students at UNO Geology than anyone else on the faculty, by a margin that may never be closed.

I never saw Bill grow old. I remember Bill in the field in Puerto Rico after a long dusty day. We were looking at a Tertiary outcrop sitting crouched on upended rock hammers, staring at grey limestone. Bill was describing the mangrove root marks he could clearly see below a vague horizon. No one else could see these things, but if he kept it up, Bill would have us see them. This proved two things to me: first, the old line about engineers not believing it unless they see it (and geologists not seeing it unless they believe it) and second, that rock hammers are damned uncomfortable no matter how you sit on them. Sorry, Bill, they just are.

I never saw Bill grow old. After retirement, it was difficult to find him absent a project in geology, conservation and natural history; he just specialized in the Hill Country of Texas more, and pushed university paperwork less. The only one that worked harder in retirement was his wife Kathy, and she should be arrested. We stayed in a 50s vintage motel in Paris, Texas once (yes, the town and motel do exist outside the movie) before venturing into Big Bend. Bill and Kathy made numerous excuses for their age, but reached trail's end first, after identifying every bird in the hemisphere, or pretending to do so; I was never sure.

I never saw Bill grow old. Bill and Kathy put us up for several days after Katrina flooded New Orleans, dog and all. I know Bill didn't like dogs much. Maybe because they pee on plants, but he and Kathy put us up anyway. Bill suggested that I should stay on indefinitely and help him map the Glen Rose Formation, all the new outcrops, all of it; no house, no job, no career, city under ten feet of water made as much sense as anything to Bill.

I never saw Bill grow old. I saw Bill about 6 months before he passed on a chance visit to his house. Bill decided we should collect harvester ants. For what? Because Horny Toads eat them and Horny Toads are endangered. We collected harvester ants by wandering down an arroyo, harassing harvester ant nests and sticking large ants into glass jars with little sticks. I scratched chigger bites for weeks, Bill never got a bite. At his funeral, I learned that bugs never bit Bill, or at least that was the legend. But he never told me where he was hiding those illegal endangered Horny Toads.

I never saw Bill grow old. Bill passed away after cross-country skiing with his family well north of the Mason-Dixon line. For the first time, I think. In his seventies. Almost like the time Dale Easley convinced him to rollerblade in Audubon Park and he donated a pound of flesh to the tarmac. I'll miss the mannerisms, the unbreakable humility, the askance looks and the sense of humor, mimicked without dilution from his mother Momo, now approaching the century mark. He is survived by his family and by a much larger family of students and colleagues who will remember him well. But we never saw him grow old.

Dr. Ivan Gill

See more stories starting on page 10.

POINTS OF INTEREST

Cheers from the "Now Former" Dept. Chair, Mark Kulp

Here we are in late August and as I sit cozy inside my office, well insulated from the progressively waning heat of another New Orleans summer, I am thinking about the wide range of positive changes I have seen within EES during the last few years. In my opinion the most significant of these changes has been the phenomenal increase in the number of students within EES. Our undergraduate population has skyrocketed during the last few years and we are approaching nearly 140 declared majors within the Department. This represents an approximate three-fold increase since 2005 which, coupled with increased enrollment in our graduate program, has clearly brought EES into the sights of several administrators. This bodes well for future investment in the Department, despite the fiscal challenges that seemingly always exist. We are hopeful that additional faculty lines will open up and additional improvements in our infrastructure will take place.

Secondly, I think that we have made a considerable academic leap with the modifications of our curriculum during the last several years. During the past year we streamlined our curriculum to include only two concentrations (Geoscience and Coastal and Environmental focus areas), instead of the four that previously existed. This change in concentrations and course requirements, coupled with recent State-mandated reductions in the total required credit hours, will allow our students to take courses in a more regular and structured time frame, all the while receiving a high-caliber EES education.

Furthermore, I think that EES has made great strides in reaching out to our alumni, which is evidenced by an increase in the number of donations to the Department, by more discussions about how alumni can help the Department secure equipment such as field trip vans, and by involvement of alumni as mentors to our students. It is the dedication of our faculty and staff, and concern on behalf of our Alumni, that have truly enabled EES to not only survive, but to actually excel in the midst of widespread budget cuts and State-wide pressure on the higher-education system of Louisiana.

The future is bright for EES, which brings me to my final point. This is my last newsletter as Chair of the Department. When I first took on the role of chair I firmly stated that I would take on this position for the minimum three-year time frame, after which I would need to focus on devoting time to instruction and research as an Associate Professor. My three year tenure as Department Chair wrapped up approximately one month ago, and it is now that I easily and confidently hand the reigns over to Skip Simmons. Skip thoroughly understands the history and the needs of EES, and will no doubt accomplish great things as Chair of the Department. I am confident that he will successfully assume the challenges and the responsibilities of this position. There is an added bonus – we are guaranteed to have him as an auctioneer for several more years!

In closing I would like to once again extend a substantial thank you to our alumni from all of the people within EES. Your support of our students through mentoring, internships, and donations are significant. It is truly the community of past and present students and staff that ensures a bright future for EES. From a personal perspective I would like to thank all of the individuals within EES and the alumni who have been incredibly supportive during my time as Chair. It has been a rather challenging, but also uniquely rewarding, experience. All the best. Mark

Dr. Mark Kulp, Associate Professor

Structure Geology Class trip to Mt. Cheaha Alabama

I am just back from leading a structural geology trip to Mt. Cheaha in northern Alabama. The class spent one day mapping a really nice fold within Devonian rocks and the second and third day driving around looking at foreland folds and thrust faults and metamorphic facies of the Blue Ridge. It was pretty chilly in the evenings but an overall fabulous weekend with some spectacular fall colors, if you have never been to Mt. Cheaha it is certainly worth a trip.

This past year continued to be a busy one with lots of field work and travel, including places like Sapelo Island Georgia and Banff Alberta; always a whirlwind but also some great science and good times. I am happy however that most of my travels are pretty limited for the remainder of the year and that I will be in town much more than I have been the last two months.

This time last year the big news was the birth of my son Jonah a year later into fatherhood and all is well. He is a great little dude, laughing and stomping his way all across the house these days. "Ball" has been the big word during the last two weeks but the other night before I left for Alabama we started working on "rock", we still need some practice on that one--apparently the rock also looks like a ball??

In other news Mary Ellison successfully defended her thesis this past summer and is now working with the U.S. Geological Survey Wetland Research Center in Lafayette. I just spoke to her the other day and she seems to be doing really well, working with Mike Miner to get some of her thesis results published and enjoying her time out of school. Other students who are moving along toward completion include John Labold, Jordyn Spizale, Ross Rearhard and Ben Kirkland, all of whom are working on developing a more robust understanding of the geomorphic evolution of small segments of the Louisiana barrier islands. Despite some hiccups procuring the required data Dillion Asher is moving forward with his work on the evolution of restoration-based dredge sites on the Louisiana continental shelf and bays. I expect that all of these students will be getting to the point very soon where they can start publishing some abstracts and presenting at professional meetings, so keep your eyes open for their work. The Coastal Research Laboratory continues to be busy and Dallon Weathers, Phil McCarty, and Mike Brown are all thigh-deep with a wide array of projects. As I sit here Mike and Phil are in the lab describing cores from sites across Ship Shoal and Dallon is running a suite of numerical models that Ioannis Georgiou developed to make predictions

Dr. Denise Reed, Research Professor

Time flies by when you are having fun – so they say. Time flies by when you work on coastal restoration in Louisiana. It seems like we only just finished the first joint protection and restoration 'Master Plan' for coastal Louisiana in 2007. Certainly there has hardly been time to get any big projects on the ground. But this year a very large portion of my time has been spent on endless conference calls and multiple trips to Baton Rouge to coordinate work that will underpin the 2012 version of the Master Plan. I am the "Senior Technical Advisor" to the effort and that means keeping track of a lot of moving parts, troubleshooting issues from sediment deposition to nature-based tourism, and trying to ensure a smooth flow of information from scientific models into decision-making tools. The good news is that I think this will be the plan that Louisiana really needs to move forward (and believe me I have worked on a lot of the previous plans and know their strengths and weaknesses). The actual list of projects will be released to the public, at least in draft form, in January 2012.

Ross DelRio

Working on the Master Plan has been a good opportunity to renew collaboration with some researchers at the RAND Corporation who I worked with a few years ago on a climate change study. Other collaborative efforts this year include work with Ioannis Georgiou and Ed Barbier (U. Wyoming) on quantifying in monetary terms the effects of wetland on storm surge attenuation, continuing work on our NASA funded project that uses MODIS imagery to look at the health of coastal wetlands and help managers prioritize sites (with Deepak Mishra of Mississippi State and Anatoly Gitelson on U. Nebraska – Lincoln), and the BREACH III project which evaluates change on a wetland restoration project in the Sacramento -San Joaquin Delta (with U. Washington, ESA-PWA, Washington State-Vancouver, East Carolina and ULL). In the lab, Ross Del Rio started work as a Research Associate in January 2011 and has been an enormous help on all of these projects. As well as coordinating local and long-distance field work, he has helped with suitability index models for the Master Plan and general project management.

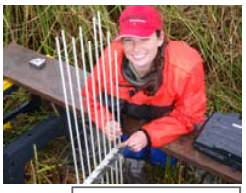
Polly Burns

Lindsay Dunaj

I have two graduate students working on aspects of coastal wetland soil development. Lindsay Dunaj is working on the BREACH project and is comparing processes out in California to those here at home in the Atchafalaya and Wax Lake Deltas. Polly Burns, who has been working part-time for a couple of years on her MSc, has also been in the field getting samples, so the lab is full of grass and mud as usual ..

Ross & Lindsay

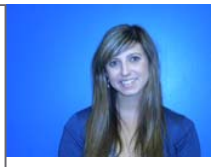
While the home team takes care of business, I continue to try and point Federal agencies, and any others who will listen, in the right direction (or at least what I think is the right direction). I serve on the USACE Chief of Engineers Environmental Advisory Board and the NOAA Ecosystem Science and Management Working Group. This year I have also been a member of two National Research Council Committees – one on water management in the California Bay-Delta and another on west coast sea-level rise. It is always tough to know if any of these efforts make any difference at all. I know they give me great fertilizer for classes on coastal issues, but they also help me realize that this restoration stuff is difficult for everyone – not just here in Louisiana. All the more reason to keep at it!



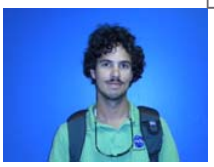
Lindsay Dunaj

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

about future Louisiana shoreline configurations. All is good and get in touch when the spirit moves you, I always enjoy hearing from former students.

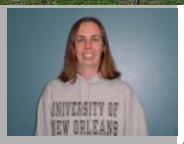


Dillion Asher, left; Ross Reahard, lower-left; John LaBold, below; Jordyn Spizale, right; and Ben Kirkland, lower-right.

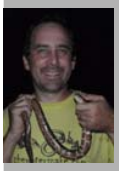


THE CREW: Phil McCarty, right; Mike Brown, below and Dallon Weather, lower right.

Dr. Martin (Marty) O'Connell, Graduate Coordinator and Assistant Professor



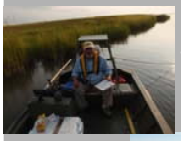
Meg Uzee O'Connell

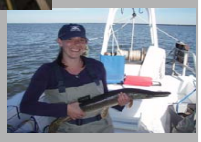

Tom Lorenz


Jon McKenzie


Scott Eustis

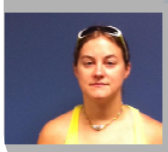

Patrick Smith


Will Stein


Rebecca Cope


Chris Davis


Shane Abeare

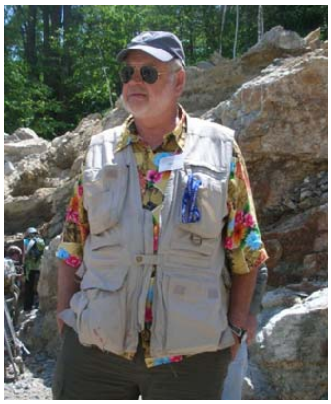

Angela Williamson

My lab, the Nekton Research Laboratory (NRL), continues to conduct various research projects including fishery research on Lake Pontchartrain, fish habitat studies at the Chandeleur Islands, coral reef research in Madagascar, and studies of invasive fishes. We are currently involved with monitoring invasive tilapia (a yet to be determined strain of *Oreochromis*) in the vicinity of Port Sulphur, Louisiana. Post-doc Tom Lorenz and Ph.D. student Jonathan McKenzie helped conduct the initial sampling efforts which (unfortunately) yielded post-rotenone treatment tilapia in fall 2010. Funding for two more years of monitoring has been obtained through the Louisiana Department of Wildlife and Fisheries (LDWF) with the hope that the population of this invasive fish will not increase. Dr. Lorenz is also conducting research on determining how another invasive fish, the Rio Grande cichlid (*Herichthys cyanoguttatus*), uses thermal refugia to survive cold winter periods.

We also continue to collaborate with Senior Biologist and Database Manager Meg Uzee O'Connell from the Pontchartrain Institute for Environmental Sciences (PIES). She is currently working on two grants based on the Deepwater Horizon oil spill, one from the National Science Foundation and one from the Harte Research Institute for Gulf of Mexico Studies. In collaboration with Dr. Mark Kulp (EES) and Dr. Chris Jenkins (University of Colorado at Boulder), we are compiling data on fish habitats and substrates to determine how they may be impacted by the presence of oil. Operations Manager and Senior Biologist Chris Schieble (PIES) has recently begun a two-year project on the impact of commercial crab traps on finfish by-catch. Chris also continues to manage research and education activities at UNO's newly dedicated Shea Penland Coastal Education and Research Facility located on Chef Menteur Pass in eastern New Orleans. Scientists interested in using the facility for either research or education purposes can learn more at http://www.nekton.uno.edu/cerf.htm.

Since the last EES Newsletter, Chris Davis successfully defended his thesis in November 2010. The title of his thesis was: "Prey selection by young lemon sharks (*Negaprion brevirostris*) at Chandeleur Island nursery habitats with a comparison to three other co-occurring shark species." One of the major findings of Chris's research was that young lemon sharks at the Chandeleur Islands have a relatively reduced diet breadth in comparison to those from nurseries in Bimini (Bahamas) and the Florida Keys. After finishing his thesis, Chris successfully procured a job with the LDWF and is currently working as a biologist out of the Grand Isle Research Station.

Jonathan McKenzie (Ph.D. student) will be finishing 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) has returned to his study site 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) is coordinating a new three year grant to study habitat choice in native red drum (*Sciaenops ocellatus*) that have been restored to an urban fishery in New Orleans. Will Stein (Ph.D. student) has been studying tarpon (*Megalops atlanticus*) habitat use in southeastern Louisiana and has generated some interesting results suggesting that perhaps this popular sports fish is spawning off the coast of Louisiana (e.g., an adult female with eggs was collected offshore in July 2011). He will continue to collect data and generate more information to hopefully support this hypothesis. Rebecca Cope (M.Sc. student) is analyzing important baseline data on larval fishes, shrimp, and blue crabs from the natural passes that enter Lake Pontchartrain. While the original 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, these data have now become important measures of the local aquatic ecosystem's health prior to the oil spill. Scott Eustis (M.Sc. student) will be defending his thesis on 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*). Scott's results suggest that these two species have actually benefitted from shrimping over the last half-century because they successfully forage on bycatch discarded from shrimping vessels. New graduate student Angela Williamson (M.Sc. student) will be studying the relationship between the Louisiana pearlshell mussel (*Margaritifera hembeli*) mussel and its possible fish host species.



MP^2 Research Group

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

The **MP^2** research group is the final bastion of hard rock geology in Earth and Environmental Sciences and continues to be a very active program. **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.

In February The **MP^2** Group attended the 6th International Pegmatite Conference meeting in Mendoza, Argentina. Skip gave an invited presentation on "Geochemistry of REE–Rich Pegmatites from Different Tectono-Magmatic Provinces in South Platte, CO, Trout Creek Pass, CO, Kingman and Aquarius Range, AZ, North America" Karen and Al were invited session chairs and Karen gave a presentations on "Miarolitic Pegmatites from the Searchlight District, Colorado River Extensional Corridor, Nevada, USA: evidence for a Hybrid Source" and Al gave a presentation on "Mineralogical Heterogeneity in Pegmatites of the Nine Mile Pluton in the Wausau Syenite Complex, Marathon County, Wisconsin.

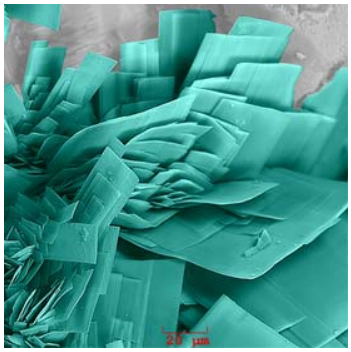
MP^2 group also presented 3 papers at the Regional GSA meeting in New Orleans in March and three papers at the Rochester Academy of Sciences Mineralogical Symposium in April. Skip and Karen gave invited talks at the Maine Mineralogical Symposium in Auburn, Maine in April. Skip also gave an invited lecture at the Sinkankas Symposium in Carlsbad, CA on "The Mineralogy of Diamond".

In June the **MP^2** research group conducted the 10th 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, Australia and Russia. This year 4 students from UNO attended the Workshop and we recruited 3 new graduate students into the **MP^2** program. Donations to support student attendance of the workshop are always welcome.

Fernando Colombo, Karen, Skip and Al in Argentina

Over the summer we learned that Al and Karen both had a new mineral named in their honor.

Falsterite pictured below is a new secondary phosphate mineral from the Palermo No. 1 pegmatite, North Groton, New Hampshire with the formula: $Ca_2\ Mg\ Mn^{2+}_2\ Fe^{2+}_2\ Fe^{3+}_2\ Zn_4\ (PO_4)_8\ (OH)_4\ (H_2O)_{14}$. The mineral was described by Tony Kampf, Stuart Mills, William Simmons and James Nizamoff and will be published soon in the American Mineralogist.



Karenwebberite is a new phosphate mineral (no photograph available) with the formula Na (Fe^{2+}, Mn^{2+}) PO_4 from the Malpensata dike, Piona pegmatite swarm, Colico, Lecco Province, Lombardy, Italy. The work was done by Pietro Vignola, Frederic Hatert*, Andre-Mathieu Fransolet, Olaf Medenbach, Valeria Diella and Sergio Ando and will be published soon.

Masters and PhD Graduate Students:

Kristen Camp, Masters Candidate

Mineralogy and Geochemistry of Anorogenic Granitic Pegmatites Associated with the White Mountain Intrusive Suite, New Hampshire

TJ Brown, Masters

Geology & geochemistry of the Kingman Feldspar, Rare Metals and Wagon Bow Pegmatites, Arizona

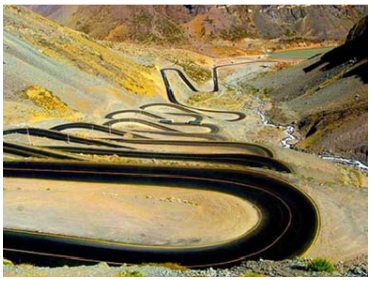
Peter Tice, PhD

Petrology and Geochemical Evolution Of the East Hill Suite Of the Mont Saint-Hilaire Alkaline Plutonic Complex. Graduated December 2010

Jonathan South, PhD Candidate

NYF Pegmatites and Granites of the Llano District, Llano Co., Texas

Pegmatites Rule!



Road over the Andes that we drove to Vina Del Mar, Chile

Dr. Mostofa Sarwar, Professor, Geophysical Research for Oil and Gas Exploration

We are fortunate to have a new chair who is an excellent leader and scholar (as well as an infamously outstanding auctioneer)—Skip Simmons. He will follow in the successful footsteps of the departing chair, Mark Kulp, who rescued us from the decline of previous years, and will work hard to emulate the vigorous growth we enjoyed under the stellar guidance of Lou Fernandez, Joe Snowden, and Bill Craig. Skip, just as they did, exhibits a rare breed of academic leadership, boasting excellent scholarly accomplishments, selfless dedication, and a good, fair heart. I am very optimistic about our department's future.

This academic year, I have co-authored one paper that has been published in a scientific journal and have presented two papers (one of which was by invitation at a physics colloquium at Dhaka University, Bangladesh). My research involves theoretical development of seismic imaging, and, in conjunction with my students, three-dimensional seismic interpretations. I am supervising one graduate student.

I was appointed as Academic Director of the UNO-Innsbruck Summer School. I will be assisted by an extraordinary team that includes a retired Federal Judge and an Assistant Academic Director from the University of Georgia. We are in the final stages of hiring about twenty-five faculty members from the U.S. and Europe. I am confident the 2012 program will provide a wonderful and enriching summer experience for our students.

On a happy, personal note, my recently-published book of Bengali poems (English title, *Pathology of Depraved Transfiguration*) received rave reviews in New York and Dhaka. The publication event was covered by television networks and national dailies in Bangladesh.

I am also grateful to report that my family continues to prosper. My wife, Dr. Syeda Sarwar, M.D., continues her practice at the VA Hospital here in Louisiana. Turhan, our eldest son, is now twenty-six. He earned a J.D. from the University of Pennsylvania Law School this May with a certification in Business and Public Policy from Wharton. He passed the Pennsylvania Bar this summer and works at a law firm in Philadelphia. In April next year, he will marry Kathy, a fourth-year M.D. student at Johns Hopkins Medical School. They met as undergraduates at Harvard.

Arush, our second son, is nineteen and a junior at Harvard. This summer he completed an internship in the investments division at a prestigious international bank in New York. He is quite ambitious, pursuing degrees in mathematics, economics, and physics. Our daughter, Shaina, is seventeen years old and graduated from high school last spring (as Class President and, amusingly, Prom Queen). She is a freshman at Tulane in the honors undergraduate program, and has been awarded the Presidential Scholarship. So far, she is opting to traverse the pre-medicine route—following in my wife's footsteps, it seems—and is exhibiting an unusual knack for understanding Japanese culture. She is (carefully) learning to drive.

I have no complaints; life, thankfully, is beautiful.

The Dinosaur Man, Dr. Kraig Derstler, Associate Professor

2010-11 has been a year of loss. My mother passed away in February; she was nearly 94 and clear-minded until the end. Mom was an artist and a teacher. She was still painting portraits, gardening, cleaning her own house, constantly redecorating, and frequently visited by her former students throughout 2010. She was looking forward to joining Dad, who died eight years earlier at 89.

This year, I/we also lost Bill Ward. He was and still is one of my favorite people in the entire world. I missed him since his retirement and now he is completely gone. Dale Easley called me shortly after Bill passed away and suggested that we organize a memorial service at UNO. Joined by Ivan Gill and Emily Taylor, we offered the service and we were gratified that so many of you were able to attend. Thanks one and all.

Late last spring, the department started a Bill Ward Field Geology Fund and many of you contributed during Bill's memorial service. We collected $3600. Thank you! We will be reviving and expanding this effort soon. Some of the faculty met in September to develop plans to increase our fund-raising efforts to honor our founders and assists our students.

I end on happy notes. Mark Kulp did a spectacular job as chairman for the past several years. It is fun to see him throw himself back into research and teaching. Meanwhile, Skip Simmons is embracing his new job replacing Mark as EES chairman. Thanks Skip and Mark! (I am especially glad that I didn't have to do it.)

During Mark's term, EES became a thriving educational enterprise, rising from the ashes of post-Katrina hardships, excesses, and neglect. In December 2011, UNO will join the University of Louisiana System of Higher Education. We all hope that, no longer in the shadow of LSU, UNO will become a thriving independent institution of education and research for Louisiana's citizens.

At a site in Sapelo Sound during low tide; notice the flood and ebb channels around the bar, and the ebb oriented bed forms (Wavelength ~ 2 m, Height ~ 0.23 m)

Dr. Ioannis Georgiou, Assistant Professor

It's October, we are mid-way through the semester, and we have a number of updates and news to share, both within my lab and outside. Most recently, at home, we celebrated the arrival of our twins. I am very pleased to say that they are healthy, have good appetites and keep us on our toes, continuously creating new challenges for us. Within the lab (the Coastal and Environmental Hydrodynamics Laboratory - CEHL) we have some new projects to report, some new people to introduce and we are all excited to continue performing research in the Gulf Coast and other places in the country.

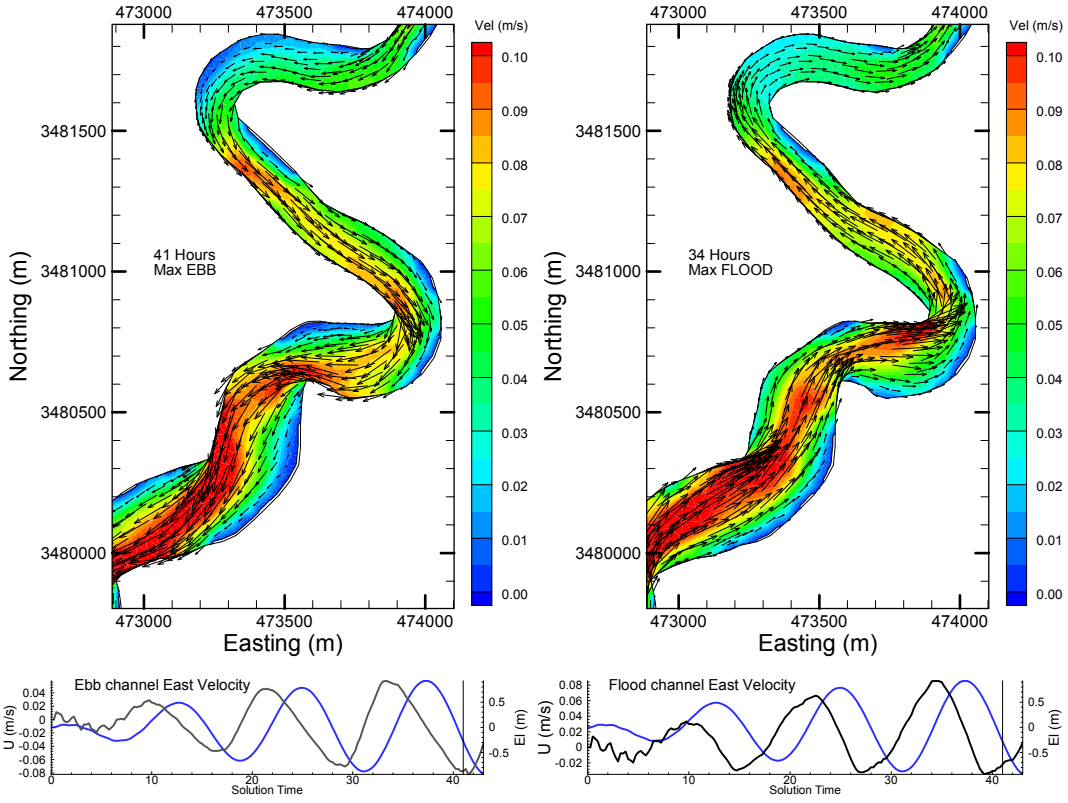
First let's congratulate our recent graduates, Chris Esposito and Jennifer Schindler. I am very pleased to report that Chris is continuing his education across town at Tulane University, studying under the direction of Dr. Kyle Straub in the department of Earth Sciences. Jenni is currently a hydrodynamic modeler with the FMI Center for Environmental Modeling here on campus working on the State's Master Plan for 2012.

Our collaboration with the United States Geological Survey (USGS) Coastal Marine Program continues. This is our last year of funding, and with some success during the new direction of the program, we may continue this long term collaboration. In any case, we have made some great friends along the way from different research centers throughout the United States, and fruitful collaborations will likely re-emerge.

The lab was also part of the historic Mississippi River flood of 2011. For the first time in several years, all flood control structures along the Lower Mississippi River were open to help reduce the risk of flooding. Our lab conducted field work to help address important questions regarding deltaic sedimentation during these floods, and to help identify overbank flow from the lower Mississippi River along natural levees. The first effort, funded by the Audubon Society and the Environmental Defense Fund, in collaboration with Dr. Alex Kolker from Louisiana Universities Marine Consortium (LUMCON) seeks to understand the flow magnitude through the West Bay diversion structure during the flood of 2011, and help quantify the sediment input to the receiving basin. The latter, funded by the Lake Pontchartrain Basin Foundation (LPBF), was focused on estimating the overbank flow along the Bohemia Spillway, and the distribution of that flow through the receiving Basin. Field surveys were conducted using RV Mudlump and RV Greenhead employed with vessel-based and self-deployed Acoustic Doppler Current Profilers (ADCP).

Most recently our lab, in collaboration with the Coastal Research Lab at UNO, has received funding from Shell Oil, Bellaire Technology Center in Houston TX., to study laterally accreting surfaces in shallow marine environments, to link geomorphologic processes to stratigraphy. This is a field drive study taking place primarily in Sapelo Sound and DuBous Sound in Georgia. Field work was completed last month and data analysis and interpretation is on the way. Additionally the lab was part of three research efforts: The first (1) "Understanding Regional Sediment Dynamics among Coastal Geomorphic Units in Louisiana: Belle Pass to Sandy Point", this study investigated the feasibility of incorporating vibracore data, grain size distribution and historic bathymetric surfaces among different geomorphic units, to help identify erosion/deposition at the regional scale in Louisiana. The second study (2), "Quantifying Ecosystem Services in Coastal Louisiana: A Pilot Study of Hurricane Surge and Wave Attenuation", a collaborative study with Dr. Reed within the department and Ed. Barbier and Brian Enchelmeyer from the University of Wyoming, and the

Ebb and Flood currents in the Duplin River, GA showing the mutually evasive flow patterns leading to sedimentation around the bar.

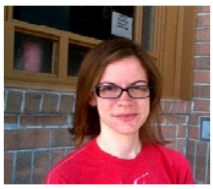


third (3), “Numerical Modeling of Hydrodynamics and Sediment Transport in Lower Mississippi near Myrtle Grove River Bend”, a collaborative study for the Office of Coastal Protection and Restoration (OCPR) with Dr. Ehab Meselhe (University of Louisiana Lafayette), Dr. Alex McCorquodale (UNO), and Dr. Mead Allison (Texas Institute of Geosciences), to help identify optimal outflow channel dimensions and location capable of diverting sand size particles near Myrtle Grove. Lastly, as part of the Northern Gulf of Mexico (NGOM) Ecosystem Change and Hazard Susceptibility Program from the USGS, my lab was involved in studying the wave climate and storm induced physical processes during winter storms and their impact on the evolution of the berm

Kevin Trosclair in the field with R/V Mudlump collecting seismic, side-scan and bathymetry.

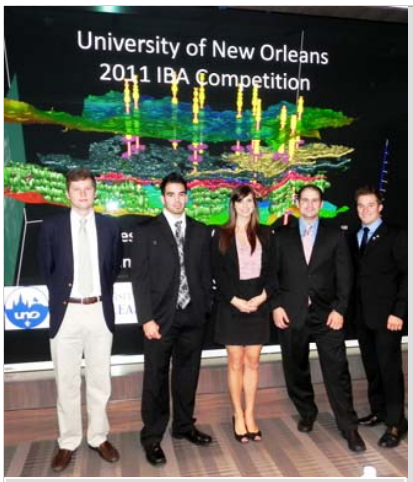
near the northern terminus of the Chandeleur Islands. Several deployments were planned, deployed, recovered, and data analysis in on the way with our collaborators at the Florida Integrated Science Center (FISC) in St. Petersburg, FL.

Presently, there are four graduate students and one undergraduate researcher in our lab. Kevin Trosclair (lower right and left) is continuing his Masters research on wave propagation and transformation at salt marsh edges. He is in the process of finalizing his prospectus and soon he will deploy instrumentation



to capture winter storms, and wave transient dynamics. Alison Sleath Grzegorzewski (left) is continuing her Doctoral research on event driven morphological response of barrier islands during storms. She is currently working on simulations to produce preliminary results to support her dissertation proposal. Robin Schroeder is studying the hydrodynamic response of Bayou St. John to astronomical, meteorological, and anthropogenic forcing. Robin is nearing completion with a Masters Thesis titled, “Tidal exchange flows in an urban water body; implications on habitat management as a result of anthropogenic alteration “.

We have new people who joined our lab this fall. Robert Clark (right) is a graduate student seeking a Masters Degree in Coastal Sciences. Robert will study the hydrodynamic and sedimentary response of tidal inlets and implications to inlet morphology. He will test the stability and maturity of an inlet relative to sediment supply, regional and local geologic controls, and come up with a new classification system for transgressive inlets. Tidal inlets are of most relevance in transgressive coasts and in systems where rising sea levels and diminishing sediment supply may be dominating coastal evolution. Finally, Shima Massiha, (below) an undergraduate researcher, is the newest member in our lab. Shima will start to interact with graduate students, gathering relevant experience in the field of coastal oceanography and coastal transport, and will be involved with several projects within the lab.



From left to right: Ben Kirkland, Charles Chaisson, Jordyn Spizale, Chris Cook and Andrew Ranson

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

There has been much progress in the rebuilding of the UNO Student Chapter of the American Association of Petroleum Geologists since the organization's re-launch in the Spring of 2009. In particular, under the leadership of last year's president, Andrew Ranson, the chapter participated in AAPG's international Imperial Barrel Award (IBA) for the first time and was recognized for their unconventional plays. Participants in last year's competition include the aforementioned Andrew Ranson, accompanied by Jordyn Spizale, Ben Kirkland, Chris Cook, and undergraduate Charles Chiasson. The AAPG student chapter plans on participating in the competition again this spring. UNO was also honored and represented last year by the graduate student presentations of Kristen Camp (oral), Hiranya Sahoo (poster), and Andrew Ranson (poster) at the AAPG Annual Convention and Exhibition (ACE) in Houston, TX. In addition to the IBA competition and ACE, the chapter has been hosting a series of lecturers for the department. Notable examples include Mike Miner on Barrier Island Morphology, Kevin McVey on Reworking Abandoned Oil Fields in Southeast Louisiana, and Ron Boyd on Coastal Facies. This fall, we are excited to welcome back Art Johnson and his presentation on "Gas Hydrates: Reality and Myths Regarding an Emerging Energy Resource". We are currently seeking lecturers and other resources to continue our activity for the Fall 2011-Spring 2012 school year.

CHAPTER OFFICERS:

Drew Boudreaux - apboudr1@uno.edu- Chapter President
Leah Grassi - lrgrassi@uno.edu - Vice President
Chris Joachim - cjoachim@uno.edu - Secretary
Kevin Trosclair - kjtroscl@uno.edu - Treasurer

Dr. Royhan Gani, Assistant Professor

This is my fourth year as an assistant professor in the Earth & Environment Sciences department at UNO.

In clastic sedimentology, although my research experience spans from continental fluvial to deep-marine depositional environments, I particularly works 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 Cliff.

Graduate Student Prabhat Neupane is involved in the Ethiopian Plateau research in understanding incision history of the plateau.

My StrataMax (stratigraphy maximum) lab is a cutting-edge PC-based workstation lab with 3D visualization capability, to investigate surface and subsurface geology in a maximum way. A software grant (1.5 million dollars) from Landmark (Geographix) was instrumental to this effort. In addition, we also have Kingdom, RiverTools, Nueralog, ArcGIS, and ENVI software running in the workstation. This lab also has a GPR system (with 100 MHz and 250 MHz antennas) to acquire, process, and interpret shallow subsurface geology.

Currently, three graduate students are working in my lab. PhD student Hiranya Sahoo is investigating stratigraphic compartmentalization of Cretaceous coastal-plain and fluvial deposits of the Blackhawk Formation (Wasatch Plateau, Utah), which is an outcrop analog for producing tight-gas reservoirs in the adjacent Uinta and Piceance Basins. MS student Andrew Ranson is also working on the same rocks to investigate the complex land-ocean interplay in shoreline successions, where fully-marine strata transition stratigraphically upward into fully-continental strata. These researches could be important for a coastal city like New Orleans, for example, to predict subsurface lithology and associated subsidence. MS student Prabhat Neupane (co-advised by Nahid Gani) is involved in the Ethiopian Plateau research in understanding incision history of the plateau.

Grad student Hiranya Sahoo (above) and Andrew Ranson (below) at Wasatch Plateau, Utah

Because of the nature of their work, Hiranya and Andrew were hired last summer as interns in Shell and Chevron, respectively. These are highly sought-after, competitive internships for graduate students across USA. We are excited that because of their excellent performances during internships, both Hiranya and Andrew have been offered full-time jobs. Prabhat is finishing up his MS this semester and will continue his PhD in my lab (co-advised by Nahid Gani) starting next semester. In his PhD research, Prabhat will investigate, in collaboration with Brown University, the past vegetation and climate change from compound specific isotopic analysis of the Siwalik strata in the Nepal Himalaya.

I teamed up with my wife, Nahid Gani, Assistant Professor-Research at EES (and now a faculty member at Tulane University), to study the birthplace of all human being, the East African Rift System, to understand the 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. This research in currently supported by NSF and Louisiana Board of Regent. We are also planning to launch a new research initiative to understand late Cenozoic tectonic, climate and incision coupling in Nepal Himalaya, for which we hope to get funding from NSF.

To learn more about my academic activities, please visit my webpage: http://ees.uno.edu/Gani_Royhan/index.html

Dr. Nahid Gani, Assistant Professor-Research

Currently I am an Assistant Professor-Research in EES at UNO, and recently joined Tulane University as Professor of Practice, mainly to teach GIS and remote sensing courses.

My research expertise involves investigating geologic (tectonic and structural) constraints on landscape evolution. I primarily integrate GIS-based incision model, quantitative river profiles, and thermochronology. Some of my research also uses paleoelevation and paleoclimate modeling to link with hominin evolution in East Africa. My research is currently focused on the Ethiopian Plateau (Ethiopia) and Book Cliff (Utah).

Tectonics -climate-incision coupling in the Ethiopian Plateau:

This research focuses on the tectonic exhumation of the Ethiopian Plateau relating to geodynamics and paleoclimate of the region (funded by NSF and Board of Regent grants). The main objective of this study is to explore whether: 1) Ethiopian Plateau experienced >1 km uplift shortly after 6 Ma. 2) long-term incision rate of the Blue Nile increased rapidly around 6 Ma, and 3) major knickpoints found in the tributaries of the Blue Nile are tectonic-driven. This research integrates thermal modeling from low temperature thermochronology (in collaboration with Dr. Matthijs van Soest at Arizona State University), quantitative river-profile analysis, and structural modeling to investigate tectonic and climate signals of the region.

I am also pursuing stable isotope-based paleoaltimetry and paleoclimate (in collaboration with Dr. Royhan Gani at UNO, Dr. Yongsong Huang at Brown University, and Dr. David Rowley at University of Chicago) to understand late Cenozoic tectonic, climate and incision coupling in East Africa and Nepal Himalaya.

Former Faculty/Alumni News and Remembrances of Bill Ward

Dr. Ward and David Broadbridge

David Broadbridge, This year I would have 30 years experience in the "Oil Patch" since my graduation from UNO, August 1981. I am still active in oil and gas prospect generation in south Louisiana. Earlier this year we had an impromptu Northshore UNO Geology Alumni Lunch from the classes of 1980-81. It was good seeing everyone.

Bill Ward will be missed. I do remember at field camp in Mexico, Dr. Ward was giving us a lecture in the field. We all looked around for a place to sit and I found a perfect spot where 2 slabs of rock were perpendicular to each other forming a "rock chair" . As I proceeded to sit down, I looked in the crack between the two slabs, and there was a rattle snake curled up right between the two rocks. I yelled "Snake" and Dr. Ward simply walked over to the rock with his walking stick in hand and killed and removed the snake from its hiding place. He then gave the snake to our bus driver, Jose to bring back to the camp. Later that night we all dined for the first time on fried rattle snake.....tastes like fish.

Ed Sticker, MS/1979, Manager/ Geoscientist, Sticker Resource Investments, LLC; Exploring and developing the Lower Cretaceous and Jurassic of the Upper Gulf Coast from E. Texas to Florida. Needless to say, a few resource plays are getting in the way (go Brown Dense!). Family is doing great with main focus still on church and baseball. Look me up if you are ever in the Jackson, MS area. Seems like NAPE is the only place I see anyone anymore!

Frank Sheppard, BS, 1984, Senior Geophysical Advisor, Noble Energy: Getting married to Amie Christmas Eve! Hiked Canyon Lake Gorge this summer, where Dr. Ward played a large role....

John Scheldt MS, 1976; Still plugging away at El Paso, although back in CBM in Raton Basin, formerly with the Eagle Ford group. That reminds me how much we will all miss Bill Ward. As for me, Bill was always interested in my career since guiding my academic path at UNO, to discussing the geology of any area where I later worked or traveled. His most recent influence was felt this past June when attending the Canyon Lake Gorge Tour in central Texas. Bill was instrumental in organizing the tour and training many of the current docents, as well as leading the tour himself. If you get up that way, be sure to take the tour (http://www.canyongorge.org/) and mention Bill. The leaders appreciate all he taught them and will also appreciate any geology you can share. It was heartening to see so many folks (mostly non-geologists and their children) interested in the gorge, the processes that shaped it and geology in general. Sadly, as we discussed at the last Rocktoberfest in Boerne, Bill is no longer here to lead us UNOers on a private tour but his legacy lives on.

Ronald K. Stoessell, Research Professor Emeritus, **retired at the end of 2006**; I met Bill Ward in 1982 when I joined the UNO geology faculty that fall. At the beginning of that semester, Bill and Al Weidie led a GCAGS field trip down to the Yucatan. The area south of Cancun was where Bill had done his Ph.D. work years before, followed by years of carbonate and structural research with Al. I soon realized that Bill had a wonderful scientific mind and was a true gentleman, just an absolute pleasure to interact with. I treasure the time I spent in the Yucatan with him during that trip and subsequent trips when I was doing my Yucatan geochemical research projects. Years later, when Al passed, I watched him with tears in his eyes at Al's memorial in Mississippi, marking the passing of his old friend. So many of the "treasured" old faculty are gone now. I only wish I had realized then how short the time was that we would be together, and that I had interacted more them when we were on the faculty together. Vaya Con Dios Bill.

Skylar L. Primm, BS in Geology 2002; I am in my third year of teaching science in a project-based high school. My students love asking me questions about the many rocks that decorate my desk. I miss New Orleans, but I love my home in Wisconsin.

Rob Herbert, MS in Geology, 1991;Been living in Salt Lake City 19 years now. Teri and I still enjoy the 4-season climate and spectacular outdoor recreation of Utah. Our oldest son Trent is in his freshman year at Seton Hill U in Greensburgh, PA studying business on lacrosse/academic scholarship. Younger son Zachary is a junior in HS playing soccer and ruling the roost after moving in Trent's room and inheriting his car. May be moving to Denver in near future when Teri transfers with QEP. Ready for another great Utah ski season with the Greatest Snow On Earth.

Philip Richardson, B.S. Geophysics 1992; I am working shoreline to deepwater West Africa from the Chevron Houston office, but I still have my home in New Orleans. Susan is working for herself and traveling a lot as an IT consultant. All is good.

Bill Busch, UNO Emeritus Professor, retired 2008. After three years on the Oregon coast my New Orleans-thinned blood has thickened to the point where I was able to go outside without a sweatshirt this past summer. In March I looked out the window and saw the Japan tsunami come on shore. It wasn't much. The tsunami debris is supposed to show up next spring. In April, Barb and I went to Paris for the Expedition 321 post-cruise meeting and continued on to Normandy. The food was great. In keeping with the times we now have half the dog we used to have. Last November we adopted a wire-haired wiener dog. Everyday now starts with a walk up the hill tracking coyote and deer. (All hyphens dedicated to the memory of Bill Ward.)

Peggy Henry Schexnayder—Memories of Bill Ward


Kathy and Bill

I met Dr. Bill Ward when he first came to UNO - maybe it was 1971 or 1972?. The Earth Sciences Department then occupied only one quarter of the upstairs corner of the old Science Building. The building that EES now occupies was not even built then. I saw him unpacking boxes in his office, unloading books and more books.

I remember my first impression - he was quiet, he was observant, he was distant - he was different. I was already an emotional wreck being one of the first women ever admitted to the Geology Department in 1971. I was different, too. I had a little boy. In 1971, I was an anomaly in that world. Yet, I loved geology and oceanography and I wanted to learn.

It was an incredibly difficult journey for me. I was terrified and exhausted, determined and defiant. I dreaded the day I had to take my first course with Dr. Ward. I heard how tough his classes were and I only saw his serious side from a distance. What would he think of me? Of my plight? I could not slip in unnoticed under his observant eye. He could see right through me. It was 1973 and when I was not being a daytime student, I lived and worked in the French Quarter alone with my small son. Abject poverty, no help and bartending /waitress jobs. Less than stellar student life. He never batted an eye. I was held to the same high standards he set for all his students. He was tough. I was terrified to even speak to him in class.

Then came the first Geology Picnic. I wanted to go and so I took my little child with me. I believe this picnic was at Michel Bectel's? Well, in the midst of all student events, my darling child threw a little boy tantrum. I was mortified. At that point, Bill Ward (Dr. Ward! my sedimentary geology Professor) calmly walked over, leaned down and lifted this screaming,flailing child into his arms and walked off into the surrounding woods. I was stunned. He nodded to me a silent "I've got this under control." Huh. In about seven minutes, he reappeared carrying a smiling little boy holding a handful of honey suckle.

I was never afraid of Dr. Ward after that day. I knew he understood. He invited us to his home for Thanksgiving Dinner that year and we were welcomed into his home with Kathy. I will never forget his kindness to me and Stevie (who is now 46 and a lawyer!) and his ability to touch the heart and mind of each person he taught.

Anyone who ever took his thin section Carbonate Petrology final exam (and passed) has succeeded in life! Bill Ward taught success through his humble , firm approach of combining diligence with performance expectation, kindness, wisdom and values. I can still see him sitting at his desk, looking up at the doorway when I would knock to ask a question - about anything. He always took the time to thoughtfully answer in his soft, measured Texas voice.

Over the years, both Kathy and Bill continued to be my friends and mentors. I will never forget those sweetest times of all, a mere forty years ago!

Student Scholarships and Awards 2010-2011

International Association of Sedimentologist, Postgraduate Grant: Hiranya Sahoo

New Orleans Geological Society Memorial Foundation Senior Scholarship Award: Charles Chaisson

New Orleans Geological Society Memorial Foundation, Junior Scholarship Award: Andrew Boudreaux

New Orleans Geological Society Memorial Foundation Graduate Scholarship Award: Kevin Trosclair

Louisiana Department of Wildlife and Fisheries Student Research Grant: Patrick Smith

Olga Braunstein Scholarship for EES Undergraduates: Andrew Boudreaux, Derik Gonzales, Jeremy Henley, C. Mark Johnson, Kriszten Megyeni

Olga & Jules Braunstein Service Award Undergraduate: Tiffany Warner

Chevron Geology Graduate Student Scholarship: Andrew Ranson, Charles Chaisson

Shell Oil Internship: Hiranya Sahoo

Shell Minority and Women in Science Award: Jennifer Brizzolara, Kimberly Clark, Karen Marchal, Leah Sossamon, Elizabeth Thompson

Chevron Internship: Andrew Ranson

UNO Full Graduate Deans Scholarship: Jennifer Schindler

AAPG Student Research Award: Andrew Ranson

SGE Tarr Award: Michelle Dellinger

SEES Scholarship: Karen Marchal and Andrew Ranson

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

Student Choice and Recognition Award for the Best Oral Presentation at the 2010 Graduate Student Symposium in Ocean Springs, Mississippi at the Gulf Coast Research Laboratory. "Diet of Young Lemon Sharks within a Nursery at the Chandeleur Islands, Louisiana": Christopher Davis

SOCIETY FOR EARTH AND ENVIRONMENTAL SCIENCES

EARTH DAY 2011

The Society for Earth and Environmental Sciences (SEES) is a student organization in the EES department committed to providing a framework of knowledge and networking for students interested in Earth and Environmental Sciences, improving the general academic welfare of the UNO students and fostering awareness of Earth and Environmental Sciences in the community. In addition, SEES works to improve the community through various volunteer activities, such as the annual Pontchartrain Beach Sweep in coordination with the Ocean Conservancy, student outreach events at UNO and Earth Week activities in conjunction with local high school students. As a new member of the UNO Service Coalition, SEES is looking forward to expanding its volunteer efforts for maximum impact. Additionally, SEES sponsors; guest lectures, BBQ's, workshops and many other essential events to perpetuate student involvement, academics and camaraderie. SEES also works in conjunction with the student chapter of the American Association of Petroleum Geologists, as well as the student chapter of Sigma Gamma Epsilon, The National Honor Society for the Earth Sciences, to promote education in the Earth and Environmental Sciences.

Our new board was elected in May of 2011. Serving as President, Kimberly Clark; Vice President, Shima Massiha; Secretary, Elizabeth Thompson; Treasurer, Jeremy Henley. SEES is led under the guidance of our faculty advisor, Dr. William (Skip) Simmons.

CRAWFISH BOIL

Our most significant fundraiser, the 36th annual Mineral Auction, will be held on Friday, November 4th at 7:00pm in the Geology and Psychology building at UNO, room 1000. This event allows students to create and maintain relationships with professionals in the Earth and Environmental field as well as providing the major resource of funding to the organization throughout the year. The funds raised help support all previously mentioned SEES activities as well as yearly field trips to areas of geological significance for the purpose of gaining essential hands-on experience in the field. Last year, SEES raised enough funding to grant two student scholarships and donated a substantial amount to the EES Van Fund used for field trips. For information regarding membership, making donations or upcoming events, please email sees.uno@gmail.com or visit the website at https://sites.google.com/site/unosees/.

MINERAL AUCTION

Sigma Gamma Epsilon SGE

The Society of Sigma Gamma Epsilon was established to recognize scholarship and professionalism in the Earth Sciences. It has for its objectives the scholastic, scientific, and professional advancement of its members and the extension of relations of friendship and assistance among colleges and universities, which are devoted to the advancement of the Earth Sciences. UNO's student chapter, Gamma Omicron, was reinstated in spring 2010 after its dissolution after Hurricane Katrina. Beginning with 11 members, has since grown to 28 active members, including 9 initiates who will be inducted in December 2011. Under the advisement of Dr. Mark Kulp, SGE consists of dedicated, motivated students who have displayed academic excellence, and who are committed to students' academic support as well as enhanced community involvement.

In order to be eligible for SGE, undergraduate students must have a 2.7 cumulative GPA, as well as a 3.0 GPA in EES curriculum. In addition, all students must have completed 10 semester hours in EES classes, and be in good standing within their department and the university. Members are encouraged to complete 10 community service hours per semester. SGE members are eligible for national and local scholarships and awards. They will receive and have the capability to submit articles to "The Compass" (SGE's national publication), and are given the opportunity to attend the National Conference. There, students attend lectures, meet fellow professionals, and possibly display their own research.

Anyone who would like to contact SGE with school or community volunteer opportunities, or anyone wishing to apply for SGE, please contact Karen Marchal at sge.uno@gmail.com. Please take a moment to recognize the members of SGE:

President - Karen Marchal
Vice President- Christopher Mark Johnson
Secretary- Kimberly Clark
Treasurer- Jeremy Henley

EES MINORITY SCIENCE EDUCATION PROGRAM

In 2009 UNO's Department of Earth and Environmental Sciences was awarded a four-year National Science Foundation grant in collaboration with San Francisco State University (SFSU), University of Texas, El Paso (UTEP), Purdue University and the University of New Orleans (UNO). Mark Kulp is the PI on the project and the UNO team this year included Dinah Maygarden, Heather Egger, Ivan Gill, and Drew Boudreaux.

The central goal of the project: ***"Minority Education through Traveling and Learning in the Sciences" (METALS)*** is to excite minority high school students about the geosciences through field based exploration. The longer term goal is to increase the likelihood of students from underrepresented groups entering college and choosing an academic path in the field of geosciences.

METALS objectives are:

1. Increase opportunities for high school students to have engaging and challenging geoscience experiences in the field;
2. Promote scientific exchanges between different cultural and regional groups in a supportive environment that promotes experiential learning;
3. Provide a mechanism for recruitment of minority students to universities and colleges that may not have easy access to large minority populations
4. Enable under-represented students to realize that earth science issues have direct impacts on their communities and
5. Provide a forum to discuss earth science processes within culturally significant landscapes.

This summer (year two of this four-year partnership) it was UNO's turn to host the field trip for 30 high school students from El Paso area, San Francisco Bay area, and New Orleans area, as well as 10 graduate students from Purdue University in Indiana. Year one was held in the splendor of the Utah national parks and hosted by the University of Texas, El Paso. Our challenge was to provide an equally exciting and interesting field trip in the steamy heat of the flat Mississippi delta.

We employed a number of strategies in order to meet the challenges presented by the landscape and the climate:

1. Draw on past experience – The UNO team has many years of field education experience in Louisiana
2. Plan every day long before the trip begins and have contingencies
3. Include local culture and involve local experts and characters
4. Use all team members' knowledge, talents and skills
5. Provide a variety of experiences, including a lot of hands-on science, dividing the students into small groups and rotating through activities when possible
6. Use boats and provide swimming opportunities
7. Sleep inside! And have indoor venues every day for more focused activities
8. Stay hydrated!

The resulting experience successfully blended geology, environmental science, engineering, and social science by taking a different theme for each day of the thirteen-day field trip, including: The relationship between the Mississippi River and its delta; barrier island geology; oil and gas and the Mississippi River delta; coastal community sustainability; Katrina's impacts on coastal wetlands; "lines of defense" against storm surges; New Orleans geology – recovery from Katrina and the future; faults and watersheds; Salt domes and associated oil and gas features; dynamic rivers; the ancient and modern native peoples of central Louisiana; the Pleistocene terraces, including the rivers and the loess unconformity.

The students participated in a variety of activities including measuring beach elevation profiles at Grand Isle to add to a dataset that is documenting changes in the shoreline over time; measuring water quality parameters in Bayou Lafourche; using GPS and GIS in a topographic mapping exercise; and drawing a stratigraphic column at Clark Creek. They also visited with the residents of a Native American village to learn about coastal resilience, heard from a number of coastal science experts and river engineers, and visited several sites such as the Bonnet Carre Spillway, the Old River Control Structure, and Davis Pond Freshwater Diversion project. They traveled in a several boats, including canoes on the Bogue Chitto River.

One of the students commented in his journal "I love the fact that we get field or 'hands on experience' with our studies. Rather than looking at a map or a video, we actually go to the physical place. As a result, we have a better understanding of geology. Just how we were studying beach elevation and erosion"

Our take-away lessons this summer confirmed for us that providing a wide variety of activities helped to keep everyone interested; that active, student-centered, small group learning – including inquiry, journaling, and reporting works best with this age group (no surprise); that the students value societal connections; and that good teamwork and plenty of planning is essential for success.

The majority of the students responded positively, and it was heart-warming to see students bonding across cultural and geographic boundaries to form strong ties. The students continue to communicate with each other and even with us via Facebook and other media. From this and previous experiences working on the long-established Minority Awareness Program, which began in this department as long ago as 1974, we recognize that it is necessary to mentor students over many years and things don't always go according to plan. We will be staying in touch with this year's crop of budding young geoscientists in the hope that some will enroll at UNO to major in Earth and Environmental Sciences.

The department is in particular need of contributions to replace our aging vans. Both are out of service and this is causing a hardship to EES especially with regards to field trips. Monetary donations or a donation of a particular vehicle would be welcome.

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 and Olga Braunstein Undergraduate Scholarship (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 Geology and Geophysics Foundation 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.

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