Case Studies In Environmental Community Outreach

An important aspect of the MES Program at the College of Charleston is its ties to the local Charleston community. Students and faculty are constantly engaged in local environmental issues from the perspective of both the natural and physical sciences, such as Geology and Biology, and the social sciences, such as Political Science and Economics.

In this vein, one of the requirements for graduation from the MES Program is the completion of an interdisciplinary Case Studies course during a student’s second year. This course is designed to provide students with an opportunity to conduct team-based, academically relevant, and pragmatically important research that focuses on a local environmental issue or topic.

In the Fall of 2007, Dr. Angela Halfacre and Dr. Mitchell Colgan conducted a Case Studies course on the topic of “Resident Perceptions and Hurricane Risk in Coastal South Carolina.” The primary goal of this case study was the assessment of how residents view hurricane risk in the Lowcountry.

Given the interdisciplinary nature of all case studies, this course focused on the actual hurricane risk, from a natural and physical science perspective, and the perceived risk, from a social science perspective. Given these two factors, the class then formulated a set of best management practices for the mitigation of hurricane impacts on resident communities in the Lowcountry.

In order to accomplish these goals the class of 16 students was divided into three sub-teams that each focused on a different aspect of data collection and correlation.

Using Daniel Island, a community with 5,000 homes, as their model, the students conducted survey research to gauge residents’ views and knowledge of hurricane risk and their preparedness in the...
FAREWELL ADDRESS

Well, this time it is official. I will be retiring at the end of the spring semester after thirty-four years of service at the College of Charleston. Of those thirty-four years, I can honestly say that the last four years serving as the Director of the MES Program have been some of the most gratifying. When I first accepted the job as Director in 2004, it was for a two-year term that eventually evolved into four years. I will surely miss the college and the graduate program. However, I can honestly say that it has meant a great deal to me, and I’m sure that you’ll still see me around from time to time.

The experience working with faculty members from the various disciplines across campus, as well as getting to meet and work with other professionals from the surrounding community has been very rewarding. The joy of teaching and getting to know the graduate students and witnessing their success upon completion of the degree program has been one of the highlights of my career.

What can I say about the work and dedication of Mark McConnel that hasn’t been said already? I think that I have run out of superlatives to describe his work ethic and the important role that he plays as program coordinator. I know that I couldn’t have survived the four years without him.

I will be transferring the gavel to Dr. Kem Fronabarger who I know will do an excellent job in my stead. He truly has the experience and the welfare of the graduate program at heart. Please afford Kem the same allegiance to the program that you have provided me in the past.

I wish this year’s graduates the best, and my many thanks to all of who continue to contribute to the success of the MES Program.

Best –
Dr. Michael Katuna

(Scene from the Etiwan Park neighborhood, Daniel Island. Photo: Niall Cytryn)

(Community Outreach continued from page 1)
Spotlight on Student Research & Internships

Students in the MES Program are engaged in some exciting research and internship opportunities. Gregg Swanson (Advisor: Lindeke Mills) is currently conducting an internship with the South Atlantic Fishery Management Council, one of eight regional fishery management councils in the nation. Headquartered in Charleston, the SAFMC is responsible for the conservation and management of fish stocks within the federal 200-mile limit off the coasts of North Carolina, South Carolina, Georgia and eastern Florida.

Gregg’s internship consists of following the fisheries regulation process by documenting the procedures necessary to institute an amendment to the fishery management plan. This amendment, known as Amendment 19, involves the consideration of a Limited Access Privilege (LAP) Program to the commercial Snapper & Grouper Fishery.

To accomplish this task, Gregg has been attending scoping meetings, LAP meetings, and SAFMC meetings, to gather first-hand experience in the process. Gregg says, “I find it very challenging to be on the ‘other side of the fence’... but I believe exploring all angles is crucial to an anyone’s passion.”

She hopes that the end result of her project will be the discovery of new and improved ways of communicating fishery management issues to the public. She also hopes to figure out whether or not early stakeholder participation in the fishery management process is more efficient than traditional management regimes. Gregg hopes that with her new understanding she will be able to help facilitate improved fisheries management in the future.

Environmental Speakers Series: On Thin Ice

Each year the MES Program invites a distinguished lecturer to speak on a topic as part of an ongoing series of talks on environmental issues. This year students, faculty, and other interested parties were privileged to hear a lecture by Dr. Walter Rosenbaum of the University of Florida entitled On Thin Ice: Polar Bears, Probability, and Climate Warming’s Implicit Lesson. Dr. Rosenbaum’s lecture explored risk assessment and management strategies, and how our current ways of assessing and managing risk are ineffectual when used for emerging global threats like climate warming.

Traditionally, risk management approaches in the United States have focused on dealing with the after-effects of product or substance after it is introduced into the environment instead of working for the mitigation of the possible risk beforehand. As an alternative, Dr. Rosenbaum advocates the use of the precautionary principle, which states “When an activity raises threats of harm to human health or the environment, precautionary measures should be taken even if some cause and effect relationships are not fully established scientifically.” Under this model, Dr. Rosenbaum thinks that certain life-threatening situations and expensive regulatory scenarios could be avoided. He proposes this as a new way of thinking and acting on emerging environmental threats and new technologies that may substantially alter the way risk management is conducted.

Dr. Rosenbaum received his PhD from Princeton University. He is currently Professor Emeritus of Political Science at the University of Florida and the Interim Director of the Bob Graham Center for Public Service at the University of Florida. He is the author of numerous articles and books concerning environmental policy, energy policy, and environmental risk assessment.
MESSA News
Master of Environmental Studies
Student Association

The Sixth Annual MESSA 8K for H₂O was a HUGE success! The mission of the 8K Run and 5K Family Fun Walk is to preserve and improve water quality in the Charleston area. The proceeds from the race are donated to a local non-profit organization that will use the funds to promote education about water quality. This year, the funds were donated to Friends of the Edisto (FRED) - www.edistofriends.org

This year MESSA made the race as green as possible – there were recycle bins out for all materials, including a bin for used running shoes! The race shirts were organic cotton, the awards were recyclable USA made water-bottles, and there were also composting bins available. In addition, the paper race packet bags were donated by Earth Fare. Also, Earth Fare came out with a tent on race day and gave out coupons and books as well as $500 worth of fruit and water.

The big news is the donation MESSA was able to make to FRED. The Sixth Annual MESSA 8K for H₂O raised $4,260 for Friends of the Edisto, the largest donation ever. Congratulations to Julia Carter and her team of organizers for making this event a success!

New Officer Elections:

MESSA’s new officers were elected this past December:

President - Tyler Lawson
Vice President - Gretchen Coll
Secretary - Katie Luciano
Treasurer - Ryan Bollinger
Social Chair - Quinn Garrett
Public Liaison - Mcghee Penrod
Volunteer Coordinator - Jenn Scales
Volunteering and Public Outreach:

Adopt a Highway - In February, ten MESSA volunteers came out to clean a designated stretch of highway along Route 61 in West Ashley. Over 20 bags of garbage/recyclables were collected in several hours work. A second round of cleanup took place in April.

MESSA was part of an Earth Day celebration at Park Circle on April 19th. Six MESSA volunteers taught children the importance of recycling.

Social Events:

MESSA hosted a holiday welcome back party at Henry’s on the Market. Lots of new and old students and faculty came together for an evening of food and drinks.

We also conducted a March camping trip. On this trip a dozen MES students traveled to the Francis Marion National Forest and spent the night camping and enjoying a variety of great campfire food provided by MESSA. We were all in a festive mood thanks to midterms being over.

Also, MESSA hosted the Spring Fling in April at Fort Johnson. At this event students and faculty got together to enjoy some sustainably harvested shrimp, play some corn toss, and relax before finals.

MESSA Events for Fall ’08:

MESSA will be meeting with all incoming MES students this August to welcome them into the program. Each MESSA officer will be mentoring new students to help transition them into the program.

Now that MESSA is a part of the Graduate Student Association we have more money in our budget – look for even better social events, volunteering, and public outreach opportunities.

There are also plans to make the first weekend back to school a fun one. MESSA is planning on going to a Charleston Riverdogs’ baseball game, and we will also be hosting a welcome back party.

A Fall camping trip to Capers Island is being planned as well.
Congratulations to our Spring 2008 Graduates!

Dany Burgess (Advisor: Elizabeth Wenner) **Thesis:** Development of Invertebrate Assemblages on Artificial Reef Cones off South Carolina: Comparison to an Adjacent Hard-Bottom Habitat

Jayson Carey (Advisor: Karen Burnett) **Internship:** Identification and Characterization of a Novel Organism found in the Bladder and Urine of Loggerhead Sea Turtles

Louisa Carter (Advisor: Amnon Levi) **Thesis:** Genetic Linkage Map for Watermelon (*Citrullus lanatus* var. *lanatus*) Useful in Identifying DNA Markers Linked to Gene Loci Conferring Bacterial Fruit Blotch Resistance

Kimberly Counts (Advisor: Leslie Sautter) **Thesis:** Genetic Linkage Map for Watermelon (*Citrullus lanatus* var. *lanatus*) Useful in Identifying DNA Markers Linked to Gene Loci Conferring Bacterial Fruit Blotch Resistance

Niall Cytryn (Advisor: Lindeke Mills) **Internship:** Creation and Development of the South Carolina Green Building Directory

Jason Daniels (Advisor: James Neff) **Internship:** Can a Consumer Significantly Increase Fuel Efficiency while Decreasing Emissions without Buying a New Car?

Andrea Gorno (Advisor: Vijay Vulava) **Internship:** Hazardous Waste Reduction and Chromic Acid Treatment in a Charleston, South Carolina, Manufacturing Facility

Jenny Gossett (Advisor: Michael Katuna) **Internship:** The Effects of the 2005 Folly Beach South Carolina Beach Renourishment Project on Loggerhead Sea Turtle (*Caretta caretta*) Nesting and Hatchling Success

Brian Grabbatin (Advisors: Angela Halfacre & Patrick Hurley) **Internship:** Sweetgrass Basketry: The Political Ecology of an African-American Art in the South Carolina Lowcountry

Jennifer Hawthorne (Advisor: Lindeke Mills) **Internship:** Installation, Maintenance and Reliability of a Continuous Emissions Monitoring System at an Electric Arc Furnace Steel

Stefanie Huffer (Advisor: Lindeke Mills) **Internship:** Reusing Brownfield Sites: Examination of How Environmental Laws Affect Growth and Redevelopment

Ileana LaTorre-Torres (Advisor: Timothy Callahan) **Thesis:** Seasonal Relationships between Precipitation and Stream Flow Patterns Related to Watershed Characteristics of Two Third-Order Coastal Plain Watersheds in South Carolina

Jason McMaster (Advisor: D. Reid Wiseman) **Internship:** Sustainable Management and Outreach for Impaired Shellfish Waters in the Rural Coastal Zone of South Carolina

Michelle Pate (Advisor: Wayne McFee) **Thesis:** Stomach Content Analysis of Bottlenose Dolphins (*Tursiops truncatus*) in South Carolina

Al Plan (Advisors: Courtney Murren & Allan Strand) **Thesis:** Genetic Inference of Population Structure and Clonality Assessment of the Non-native Dune Plant *Vitex rotundifolia*

Reggie Reeves (Advisors: Patrick Hurley & Norman Levine) **Thesis:** GIS Mapping of 'Two Worlds': Comparing Expert and Non-Expert Conservation Priorities
Spotlight on New Faculty

Dr. M. Scott Harris is one of the newest faculty in the MES Program, only becoming a faculty member after joining the Department of Geology and Environmental Geosciences at the College of Charleston in the Spring of 2008.

Dr. Harris was born in Chester, Virginia, just south of Richmond, and he attended the College of William and Mary where he majored in Geology with a minor in Anthropology. He received his Master’s degree in Environmental Science from the University of Virginia, and his PhD in Geology with a concentration in Coastal Studies from the University of Delaware in 2000.

Dr. Harris’s dissertation research focused on the Charleston area, and he was also actively involved in several U.S. Geological Survey coastal erosion projects along the South Carolina coast. Prior to teaching at the College of Charleston, he taught at Coastal Carolina University for 9 years, while simultaneously serving on several MES students’ thesis committees. Dr. Harris says that the quality of life in the Charleston area, the student body, and the tight knit nature of the faculty at the College of Charleston were strong motivating factors for seeking employment here.

Dr. Harris has many diverse interests within the fields of Geology and Environmental Studies that benefit the MES Program. Currently his research interests focus on quaternary geology, geomorphology, and stratigraphy, especially as they pertain to the coastal plain and continental shelf. Research questions of interest to him focus on looking at long term and short term sea level changes, sediment budgets, and coastal dynamics over the course of hundreds of thousands of years to as little as several decades. This involves a multidisciplinary approach that incorporates work with ecologists, hydrologists, archaeologists, and paleontologists.

In addition to these research interests Dr. Harris also maintains strong ties to the field of Geoarchaeology, which studies the natural geological processes that affect archaeological sites. He was involved with the recent geologic studies that led to the excavation of the Confederate submarine the H.L. Hunley, and he has also worked at Dixie Plantation.

His other fieldwork experiences include sites in Utah, Ethiopia, Virginia, and Delaware. Currently he is planning a fieldwork expedition to Alaska to study glacial degradation using ground penetrating radar (GPR).

In the future Dr. Harris is hoping to engage interested students in geologic mapping to answer questions about past sea levels and Quaternary environments, including documenting shoreline change and the influence of near-surface geologic controls on modern beach dynamics along the Charleston barrier islands.
Welcome To Our New Director!

Dr. Kem Fronabarger was born in Las Vegas, New Mexico, but he moved throughout the United States and Europe for most of his childhood. He attended the University of Missouri at Rolla and received a BS degree in Geology. Dr. Fronabarger went into the Peace Corps and served for two years in Haute Volta (now Burkina Faso) as an exploration geologist. On his return to the United States, he worked for the Federal Power Commission (now part of the Department of Energy) as a geologist studying natural gas reserves for federally leased properties in the gulf coastal region. He then worked for Union Carbide Corporation as a uranium exploration geologist.

Dr. Fronabarger received both his MS and PhD degrees in Geology at the University of Tennessee, Knoxville. He accepted an appointment at the College of Charleston in 1984 in the Department of Geology where he as served as a faculty member for the last 24 years. He has served as the founding faculty advisor of the College of Charleston chapter of Sigma Gamma Epsilon Geological Honorary Society, and as president of the Charleston Chapter of Sigma Xi Scientific Honorary Society. Dr. Fronabarger’s current research is in the geology of the Theban Tomb Complex of Luxor, Egypt. He has served as both primary advisor and as a committee member to numerous MES student theses and internships. He takes over the directorship of the MES Program from Dr. Michael Katuna, who is retiring.