

MES NEWS EDITOR

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MES PROGRAM

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Bill McKibben at the College of Charleston

Bill McKibben, author and educator, has been called by the Boston Globe “probably the country’s most important environmentalist.” He has written a number of books about the environment, from *The End of Nature*, perhaps the first book for a general audience about

“probably the country’s most important environmentalist”
- Boston Globe

climate change, to his most recent book *Eaarth*, about the ways our planet has changed.

In 2008 he founded 350.org, a grassroots climate campaign serving as a global model of creative activism. Why 350? Scientists say we need to reduce our current CO₂ level of 392 parts per million (ppm) to 350 ppm in order to help preserve our planet.

Dedicated to “building a global grassroots movement to solve the climate crisis,” 350.org has encouraged the development of online campaigns and public demonstrations by volunteers in over 188 countries.

McKibben spoke as the Conrad D. Festa Community Lecture speaker

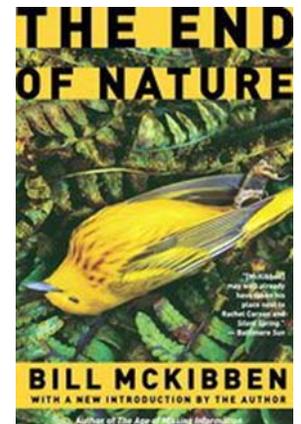
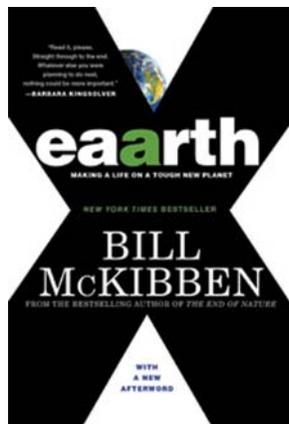
during the College of Charleston’s Sustainability Week this past April at the Sottile Theater, where a full crowd applauded him in a standing ovation. Describing a planet in transition, he spoke about the work 350.org has done, including the efforts in 2009 that led to over 5200 demonstrations in 181 countries, an event described by CNN as “the most widespread day of demonstration in political history.”

He certainly caught everyone’s full attention when he stated that the recent “Texas drought may have killed about half of a billion trees,” and that we didn’t just bypass our old climate records, but

“the planet’s best green journalist”
- Time Magazine

“smashed” them.

Although he brought about laughter when he said we “don’t need to drive semi-military vehicles to grocery store,” there seemed to be quite an understanding of the truth behind it. The odds may seem bleak, but he left the audience with the challenge of “figuring out how you are going to wake up in the morning and change the odds.”





From the Director

I hope you all had a restful and productive summer! The first breath of autumn weather arrived recently, but by the time this newsletter goes to press some of the heat and humidity has returned. Cooler nights certainly are welcome as we continue the mad dash of the new semester.

Welcome to our new students of Fall 2012! We have twenty-seven new students, many of whom have recently moved to Charleston. They join seven students who started the program last semester. Thirty-four new students for 2012 is our largest class in MES history! They dove in to the deep end of the pool right away (pardon the pun) and saw first-hand our stormwater flooding problems. I'd like to take this opportunity to mention some groups working to understand and mitigate these kinds of impacts on environmental and human systems.

The Surfrider Foundation is a non-profit organization working to protect coastal resources and educate communities about environmental stewardship. The Charleston Chapter is very active across the Low-country region. See charleston.surfrider.org/ for more information. Our student organization MESSA has volunteered with Beach and River Sweeps over the years and the MES program continues to work with them on different events. Stay tuned for a Surfrider event in early November when they host the 5 Gyres group (5gyres.org), who are ending at Folly Beach their nationwide bike tour to bring awareness about ocean pollution.

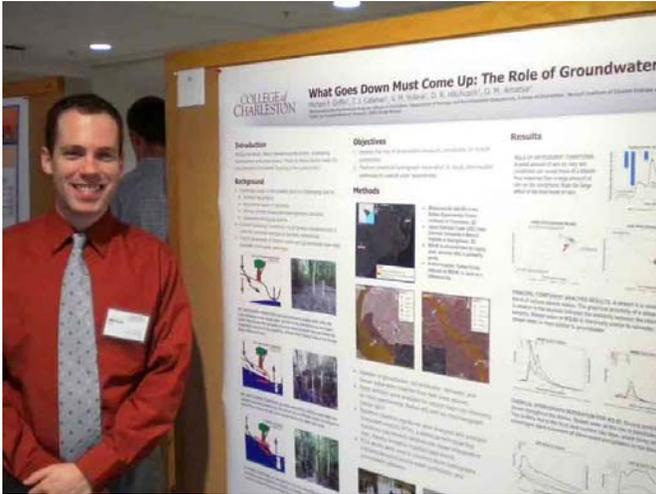
Carolina Clear (<http://www.clemson.edu/public/carolinaclear/>) is a statewide program working to educate and involve communities about stormwater and is part of the Clemson University Restoration Institute. The MES program has been collaborating with Carolina Clear on stormwater mitigation and education projects such as the rainwater cisterns behind the Political Science building at 24 Coming Street, and we also assisted with the Grice Marine Lab cistern and rain garden project that was constructed by Marine Biology graduate students and members of the Sustainability Office. CofC is also a member of the Ashley Cooper Stormwater Education Consortium, which brings together communities, universities, government agencies and NGOs to educate the public about stormwater issues. We have two students currently working on research projects with Carolina Clear and we're very pleased to have such an important partnership.

South Carolina Sea Grant Consortium is a state agency linked to the National Oceanic and Atmospheric Association, and they offer support for environmental and community research, education, outreach, and training, with the mission to provide economic benefit and effective conservation practices for coastal and marine resources. We've had many students and faculty engage with Sea Grant through funding support and research and management opportunities over the years. They provide critical support throughout the region, especially needed now in these difficult economic times. Environmental resources do not easily fit into political constituencies, making Sea Grant even more important as they work to ensure future economic and environmental security. Their offices are at Meeting and George Street, and be sure to learn more and provide your support by visiting them. www.scseagrant.org (and better yet, tell your state senator and representative that you support Sea Grant's mission!)

Unfortunately there isn't room to list all of the agencies and partners that have made the MES program what it is today. As we continue to strive toward our goal of integrated solutions to environmental problems, collaborations are an important part of the foundation for the MES program. Thanks to all our partners! I am standing by ready to help brainstorm how we could place students in your group for mutual benefit. Drop me a note at callahant@cofc.edu

— Tim

Graduate Research Poster Session

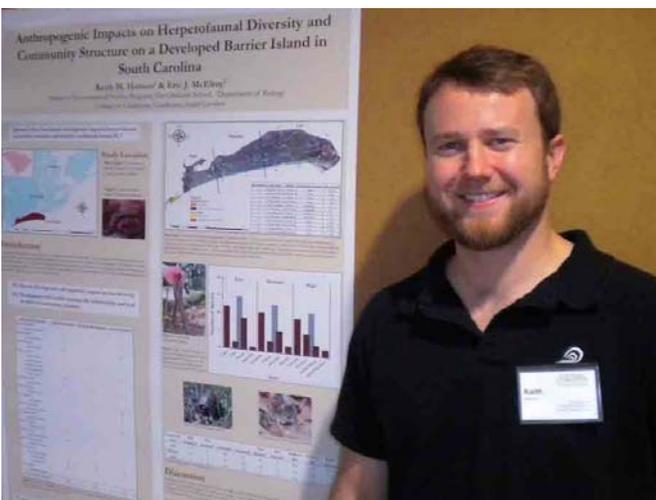


Michael Griffin *What Goes Down Must Come Up: The Role of Groundwater in Lowcountry Flooding*

Thirty-seven Graduate Students participated in the Sixth Annual Graduate Research Poster Session, including 17 from the MES Program!

Congratulations to **Michael Griffin** (advisor: **Timothy Callahan**) and **Keith Hanson** (advisor: **Eric McElroy**) for their recognition as top presenters. More information about the Poster Session is on the Graduate School website at:

<http://gradschool.cofc.edu/>



Keith Hanson *Anthropogenic Impacts on Herpetofaunal Diversity and Community Structure on Kiawah Island, SC*

- **Lowell Atkinson** *Socioeconomic and Ecosystem Benefits Derived from Coastal Restoration Projects in Southern Louisiana*
- **Lauren Brown** *Impacts of Environmental Disaster on Social Conflict*
- **Elise Clopton** *Everything Going Against Them: The Difficulties in Monitoring and Protecting the Interior Least Tern (Federally Endangered) on Private Registry Lands*
- **Megs Eichorn** *How do People Perceive Scientific Information? A Study of the Communication of Science Using the Local Food Movement in the Lowcountry*
- **Justin Greenman** *A Characterization of Bottlenose Dolphin (*Tursiops truncatus*) Interactions with the Commercial Shrimp Trawl Fishery of South Carolina*
- **Keith Hanson** *Anthropogenic Impacts on Herpetofaunal Diversity and Community Structure on Kiawah Island, SC*
- **Brooke James** *How Will Tidal Freshwater Forested Wetlands Respond to Sea Level Rise?*
- **Jarrold Loerzel** *Social Valuation of Ecosystem Services in the ACE Basin, South Carolina*
- **Matt McCalley** *Biogeographical Assessment of the Ecological Vulnerability of South Carolina Marsh Hammocks to Sea Level Rise*
- **Dylan Murphy** *Development of a New Technology for the Advancement of a Citizen Science Project: Clean Marine Smartphone App*
- **Sarah Rollins** *Residential Stormwater Pond Maintenance and Outreach in the Lowcountry*
- **Jennifer Saunders** *Growing Connections: Understanding the Role of Higher Education in the Urban Agriculture Movement*
- **Liz Symon** *The Transect Program: The Role of Undergraduates Utilizing At-Sea Data for Quality Oceanographic Research*
- **Andrew Wynne, Laura Mudge, Melissa Strickland, Adam Brunelle** *The Peace Corps Master's International Program (PCMI) at the College of Charleston*

10th Annual 8K for H₂O



Every year MESSA hosts the 8K for H₂O to promote improved water quality in the Charleston Area.

MESSA extends a thank you to everyone who participated in this year's race on Folly Beach. The time and effort put forth made it another successful year! Keep your eyes and ears open for next year's race!



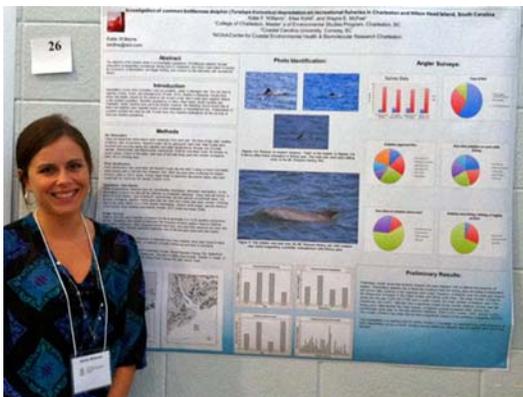
"Standing watch for the future,
environment and community."

-www.scmaritime.org



Proceeds from this year's race benefit the **South Carolina Maritime Foundation**, a public nonprofit 501(c)(3) organization. The Foundation owns and operates the tall ship *Spirit of South Carolina* and has a mission to "create opportunities for life-changing experiences resulting in leaders for tomorrow's communities." Since its first season of programming in 2007, it has served nearly 10,000 students through shipboard and land-based programming and MESSA is certainly proud to give back!

SC Academy of Sciences



MES student **Katie Williams** (advisor: **Wayne McFee**) presented her poster entitled *Investigation of Common Bottlenose Dolphin (*Tursiops truncatus*) Depredation on Recreational Fisheries in Charleston and*

Hilton Head Island, SC at the 2012 Annual Meeting of the SC Academy of Sciences in April.

Fall Events

August 20:
Fall Orientation

October 12:
Angela C. Halfacre presents
*"A Delicate Balance:
Constructing a Conservation
Culture in the South
Carolina Lowcountry"*

November 5:
Last Straw Plastic Solutions
Bicycle Outreach Tour

November 7:
Nuclear Energy's Future

December 15:
Commencement

Summer Travels



Michael Griffin Surveys the Himalayas - Photo courtesy of Vijay Vulava



The Group on a Boat in the Sundarbans - Photo from the Graduate School: <http://blogs.cofc.edu/gradschool/>

MES students **Kim Ryan** and **Michael Griffin** (advisor: **Timothy Callahan**) received study-abroad scholarships, funded by a generous donation from Dianne Culhane through the Graduate School Office, to help support their travels abroad to study water quality issues in India this summer.

Led by MES Program Director Timothy Callahan and MES Program Science Advisor Vijay Vulava, graduate and undergraduate students from the College of Charleston examined water quality issues from the glaciers of the Indian Himalayas to the Sundarbans wetlands along the Bay of Bengal. Michael and Kim have both written about their travels - read all about their adventures on the Grad School blog! <http://blogs.cofc.edu/gradschool/>

Peace Corps Masters International

The first students participating in the **Peace Corps Masters International (PCMI)** option through the MES Program departed this summer for their Peace Corps assignments in Coastal Resources Management.

Andrew Wynne (advisor: **Vijay Vulava**) and **Laura Mudge** (advisor: **Melissa Hughes**) are both in the Philippines. Andrew is in Tabaco City, and Laura is in Sabang (Bataan Province), and both are posting updates online. Check out all of the latest news on Laura's blog at <http://elmudge.blogspot.com/> and on Andrew's blog at <http://philippinecamino.blogspot.com/>

Five new students participating in the PCMI option have enrolled in the MES Program this Fall semester, and will go overseas after completing their initial coursework. Information about PCMI at the College of Charleston can be found online at <http://pcmi.cofc.edu/>

Graduate Assistantships for Student Research

MES students had the opportunity this spring to apply for Graduate Assistantships for Student Research through the MES Program. Two students were awarded full funding, receiving a \$13,000 Assistantship and \$3,500 in faculty support. Funding in the form of research scholarships and project support was also awarded to other meritorious proposals submitted for this program.

These assistantships are designed to provide funding to perform environmental studies research along the lines of a thesis or internship project, and students applied for the funding by submitting a proposal for review by an independent panel. The merit of the proposals was determined by (1) relevancy to environmental studies, (2) problem statement clarity, (3) feasibility of methods and likelihood for success, and (4) creativity of project idea.

Sarah Baxter (advisor: **Leslie Burdett Hart**) "Skin Lesions on Bottlenose Dolphins (*Tursiops truncatus*) and their Association with Environmental and Anthropogenic Factors in Coastal Georgia, USA" *Full Funding*

Adam Brunelle (advisor: **Annette Watson**) "The roles of discourse and social networks in the South Atlantic snapper grouper management complex" *Partial Funding*

Robert Crimian (advisor: **Susan Lovelace**) "Socio-economic impacts to surrounding community and individual well-being from the restoration of the Noiset Creek in North Charleston, SC" *Partial Funding*

Krystle Miner (advisor: **Steven Jaumé**) "Using the Charleston, SC Earthquake of 1886 to Develop New Models for Estimating Future Earthquake Damage" *Full Funding*

Matthew Rittinghouse (advisor: **Peter Etnoyer**) "Modernization of a Deep-Sea Coral Database for Gulf of Mexico" *Partial Funding*

Michael Stanton (advisor: **Narayanan Kuthirummal**) "Analysis of the Potential for Reducing Buildings' Radiated Cooling Losses Using Roof Evaporative Cooling Systems" *Partial Funding*

Students who received Graduate Assistantships for Student Research will present progress reports to provide information on methods development, initial results, relevant project meetings, and any related publications or presentations regarding the projects, as well as Final Reports that will describe any changes in the proposed objectives, and provide a narrative that lists the details on the project, the results, implications of the work, and list of cited literature. Depending on funding, the MES Program hopes to make the Graduate Assistantships for Student Research available to students in future years as well.

Orchestrating a National Workshop on Coral Reef Social Monitoring



Bob Crimian at the Workshop

*MES Student **Bob Crimian** (advisor: **Susan Lovelace**) orchestrated a national workshop on Coral Reef Social Monitoring this past summer.*

There are tasks that school does not prepare you for; first-hand experience serves as your schooling, even if you have no idea what you are doing. “Winging it” becomes your means of tackling problems you have never encountered, and to my surprise trusting your instincts often pays off. This was the case for me when I was given the job to organize and plan a national workshop at the Hollings Marine Laboratory (HML) for the Human Dimensions Research Program. The workshop title, “Developing Social and Economic Indicators for Monitoring U.S. Coral Reef Jurisdictions”, intimidated me as I was just beginning to learn about indicators. I have studied coral reefs in the biophysical sense, but never in the social or economic sense. Additionally, experts from around the country were setting time aside from their ridiculously busy schedules to travel here to Charleston to work through developing indicators to help coral reef jurisdictions monitor social and economic changes. “How am I even remotely qualified for this?” I kept asking myself.

It turns out that I was more qualified than I realized. All the participants thanked me for organizing everything so well and for making their job “easier”. The biggest realization out of this entire process was how quickly I was able to learn “on the go” and produce quality results and products. In my opinion, and this experience solidifies this opinion, learning by doing is the best way to learn. Having little understanding of social and economic indicators before this workshop, I am certainly more knowledgeable on this topic. I even contributed to some of the discussions in the workshop with the experts who have been actively involved in this field for years. Furthermore, organizing workshops and meetings takes communications skills and patience (lots of it). It may sound silly, but tasks that people take for granted are often very important parts of a well-organized workshop; “Is the conference room reserved?” or “How is this participant getting from the hotel to the lab?” or “Is she a vegetarian?” are all questions that need to be answered correctly to allow for the workshop participants to accomplish all they can. That is the ultimate goal and as an organizer that is what you set out for. Other specific skills I gained from this experience included working with a budget (a real one – not one you make up in class), creating and editing agendas, learning how federal government funding and research actually works (you would be surprised how much can be gained from just listening to conversations), and facilitating small working groups. This last one was definitely a skill that will certainly benefit me in the future and I urge everyone to gain facilitation experience.

Overall, it was a great experience that I would have never had in a classroom setting. I made some great contacts, which I think will greatly benefit me when it comes time to apply for jobs, and I learned a ton of new information about social and economic aspects of coral reefs.

— *Bob Crimian* (crimianrl@g.cofc.edu)

Congratulations to our Spring and Summer Graduates!

Lauren Brown *Advisor:* Susan Lovelace

Thesis: Societal Responses Following Disaster: Exploring the Association between Social Conflict and Environmental Disaster Events

Stephanie Bratkovics *Advisor:* Ed Wirth

Thesis: Monitoring and Fate of Organic Sunscreen Compounds in the Marine Environment

Ande Buskirk *Advisor:* Tracy Burkett

Internship: Demonstrating Sustainable Agriculture Practice at Dixie Plantation

Megs Eichorn *Advisor:* Annette Watson

Thesis: How Do People Perceive Scientific Information? A Study of the Communication of Science Using the Local Food Movement in the Charleston Area

Justin Greenman *Advisor:* Wayne McFee

Thesis: A Characterization of Bottlenose Dolphin (*Tursiops truncatus*) Interactions with the Commercial Shrimp Trawl Fishery of South Carolina



Michael Griffin (*Outstanding Graduate 2012*)

Advisor: Timothy Callahan

Thesis: Using Chemical and Hydraulic Data to Understand Storm-Event Stream Flow in Lowland Watersheds

Keith Hanson *Advisor:* Eric McElroy

Thesis: Anthropogenic Impacts on Herpetofaunal Diversity and Community Composition on a Barrier Island in the Southeastern United States

Chrissie Lanzieri *Advisor:* Melissa Hughes

Internship: Assessing the Population Demographics and Habitat Preferences of the Diamondback Terrapin (*Malaclemys terrapin*) within the Cape Romain National Wildlife Refuge and Implications for Conservation Management

Jennifer Saunders *Advisor:* Tracy Burkett

Internship: Growing Connections: An Assessment of the Urban Agriculture Movement on University Campuses

Jeff Swatkowski *Advisor:* Timothy Callahan

Internship: A Rainwater Harvesting Feasibility Study for the College of Charleston

Elizabeth Symon *Advisor:* Gorka Sancho

Internship: The Role of Undergraduates Utilizing At Sea Data For Quality Oceanographic Research



Upcoming Fall 2012 Events - Don't Miss Out!

Join Angela C. Halfacre as she presents:

A Delicate Balance: Constructing a Conservation Culture in the South Carolina Lowcountry

Friday, October 12th
12:00 Noon
School of Sciences and Mathematics Building
Room 241



Every region of the United States is seeking a sustainable pattern of growth. Angela C. Halfacre, in her new book *A Delicate Balance: Constructing a Conservation Culture in the South Carolina Lowcountry*, uses interdisciplinary methods to show how growing numbers of Lowcountry South Carolina residents have sought to sustain and conserve the rapidly growing region's distinctive sense of place including its fragile ecology, natural beauty, and traditional land-based livelihoods.

Angela C. Halfacre teaches in the departments of Earth and Environmental Sciences and Political Science at Furman University, and serves as the director of Furman's David E. Shi Center for Sustainability. Before returning to Furman, her alma mater, in 2008, she spent 10 years at the College of Charleston as a political science professor and director of the graduate program in Environmental Studies.

The Last Straw Plastic Solutions Bicycle Outreach Tour

Monday, November 5th
Folly Beach

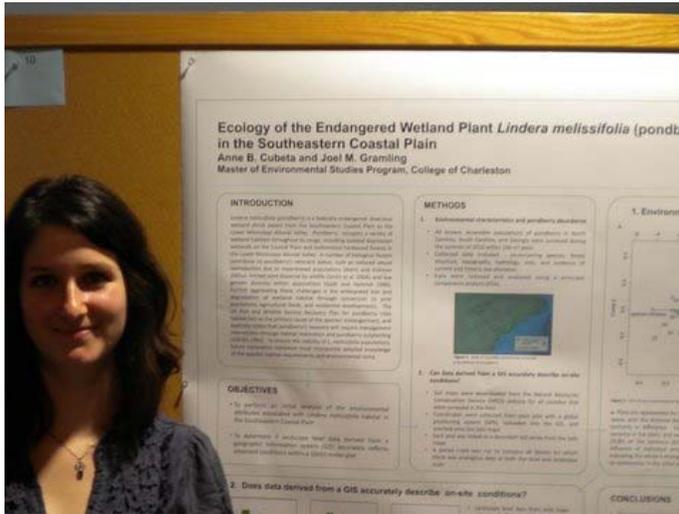
Join 5 Gyres, the Surfrider Foundation, the Coastal Conservation League, and others at Folly Beach for the Charleston leg of The Last Straw Plastic Solutions Bicycle Outreach Tour. Details and more information coming soon!

Nuclear Energy's Future

Wednesday, November 7th
5:00 p.m.
School of Sciences and Mathematics Building, Room 129

Clean Energy America invites you to learn about the future of nuclear energy. Meet with the experts working for a variety of energy companies to discuss today's critical energy issues and the nuclear industry. *Sponsored by the Nuclear Energy Institute.*

Elsie Quarterman-Catherine Keever Award



MES Student **Anne Cubeta Beckley** (advisor: **Joel Gramling**) was awarded the **Elsie Quarterman-Catherine Keever Award** for best ecological poster at the **Association of Southeastern Biologists** conference in Athens, GA.

Anne (shown at left at the Graduate School Research Poster Session) received this award for her poster *Using Species Distribution Modelling to Develop a Restoration Framework for Lindera melissifolia in the Southeastern Coastal Plain*

Using Species Distribution Modelling to Develop a Restoration Framework for Lindera melissifolia in the Southeastern Coastal Plain

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