



# GRICE LOGBOOK

A NEWSLETTER OF THE GRICE MARINE LABORATORY AND THE  
GRADUATE PROGRAM IN MARINE BIOLOGY, COLLEGE OF CHARLESTON

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## A Marine Lab Experience for Undergrads

Summers at the Grice Marine Lab are always exciting, as students and faculty revel in the break from regular classwork to focus on research. One highlight of the Summer of 2006 was the exceptional group of undergraduate interns from across the United States who, for 10 weeks, called Grice their home and conducted independent research as part of College of Charleston's NSF-sponsored



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## George D. Grice, Jr. Lecture Established

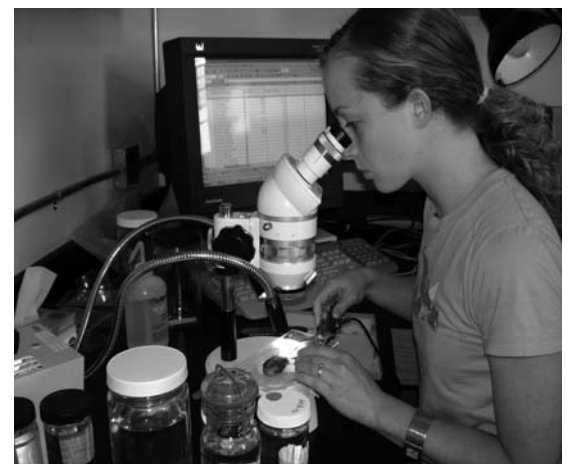
The grandson of the namesake of the Grice Marine Laboratory, George D. Grice III, is a local surgeon who grew up around marine laboratories. Through a generous gift of Dr. Grice, we have established a lectureship in honor of his father, George D. Grice, Jr. George D. Grice, Jr. was a prominent marine biologist who spent most of his career at the Woods Hole Oceanographic Institution (WHOI) in Woods Hole, Massachusetts on Cape Cod. Dr. Grice was born in Charleston in 1929 and received his B.S. degree in biology from Clemson College and his M.A. and Ph.D. in biology from Florida State University. He worked as a fishery biologist for the U.S. Fish and Wildlife Service in Alaska from 1957 to 1958 and spent a year at the University

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## Fish Biodiversity Studies at the Grice Marine Lab

Biodiversity is a word appearing frequently in the news, especially with concerns of decreasing biodiversity resulting from global warming. **Dr. Tony Harold**, Associate Professor of Biology, studies the biodiversity of bony fishes at the Grice Marine Laboratory. This research is largely characterized by phylogenetic analyses, comparative studies in biogeography, and the discovery, description and naming of species new to science. Since 2001, Dr. Harold has co-authored articles in which more than 40 new species of fishes have been named.

**Allison Chandler**, a graduating senior in marine biology, has been carrying out an independent study project with Dr. Harold this year, working on the systematics of deep-sea hatchetfishes (Sternoptychidae: *Argyripnus*). Allison has won the Navy League Award and an award for Outstanding Graduate in Marine Biology at the CofC. Her work was presented at the recent Poster Day in the School of Sciences and Mathematics and will be presented again later this year at the annual meeting of American



*Student Allison Chandler studies deep-sea fishes.*  
Society of Ichthyologists and Herpetologists. Allison will be attending graduate school at the University of Maryland next year.

Other research in Dr. Harold's lab involves the use of morphological and molecular data to solve problems relating to the evolutionary history of tropical marine gobies. A combined

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## Recent GPMB Degrees

**Tiffany Baker** – Stock Identification of the Atlantic Croaker, *Micropogonias undulatus* Linnaeus, Using Macroparasites as Biological Tags (Advisor: Isauere deBuron)

**D. Andrew Baltzegar** – Hox A2 and SP5 Gene Structure and Expression in Two Species of *Fundulus* (Cyprinodontiformes: Fundulidae), *Fundulus heteroclitus* (Linnaeus) and *Fundulus majalis* (Walbaum) (Advisor: Bob Chapman)

**Laura Borecki** – The Population Genetics of French Grunt, *Haemulon flavolineatum*, in the West Central Atlantic and Implications for the Design of Marine Reserves (Advisor: Bob Chapman)

**Christopher Bradshaw** – Behavioral Ecology of Spotted Seatrout, *Cynoscion nebulosus*, at Spawning Aggregations in Charleston Harbor (Advisor: Gorka Sancho)

**Colleen Bryan** – Non-lethal Monitoring of Trace Elements in Bottlenose Dolphin, *Tursiops truncatus* (Advisor: Steven Christopher)

**Dave Couillard** – Genetic Inference of Population Structure in the Beach Annual *Cakile* sp.: Analyses on Two Spatial Scales (Advisor: Allan Strand)

**Kelly Filer** – Age, Growth and Reproduction of the Barrellfish, *Hyperoglyphe perciformis* (Mitchill, 1818) (Advisor: George Sedberry)

**Nathan Garcia** – Effects of Light and Iron on the Growth of Colonial *Phaeocystis antarctica* (Advisor: Jack DiTullio)

**Adam Herbert** – Incidental Nest Predation by Rice Rats (*Oryzomys palustris*) and Incidental Nest Disturbance by Researchers on Saltmarsh-Nesting Songbirds (Advisor: Will Post)

**Kristine Hiltunen** – Mixed-Stock Analysis of Harbor Porpoises (*Phocoena phocoena*) along the U.S. Mid-Atlantic Coast Using Microsatellite DNA Markers (Advisor: Patty Rosel)



**Tye Pettay** – Effects of the Antifouling Algaecide, Irgarol 1051, on Cultured Zooxanthellae (Genus *Symbiodinium*) (Advisor: Cheryl Woodley)

**John Robinson** – Divergence in the Oyster Drill, *Urosalpinx* (Neogastropoda: Muricidae), Around the Florida Peninsula (Advisor: Rob Dillon)

**Christina Smar** – Age Estimation and Life History of the Pygmy Sperm Whale (*Kogia breviceps*) and Dwarf Sperm Whale (*Kogia sima*) (Advisor: Joe Bernardo)

**Amelia Viricel** – Spatial and Social Structure of the Common Dolphin *Delphinus delphis* in the Northeast Atlantic Inferred from Genetic Data (Advisor: Allan Strand)

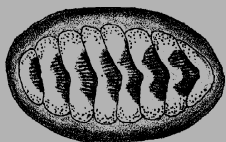
## Alumni Notes

**David Whitaker (1978):** David was hired by the South Carolina Wildlife and Marine Resources Department (now Dept. of Natural Resources) in November, 1976. Most of his career has involved crustacean management and research. Along the way he has worked on softshell blue crabs, white and brown shrimp tagging, white shrimp population modeling, shrimp stocking, octopus fishery development, squid jigging experiments, sea turtle population and health studies, hammock island ecology, and other topics. During his career, David served as Director of the MRD's Environmental Office, and Director of the Office of Fisheries Management. He is currently Asst. Dep. Director for the Marine Resources Division of the SC DNR. Currently, David is mostly busy with administrative matters, but he is also leading a cooperative research program that is funding a number of students and fishermen to conduct cooperative research projects with DNR. David is married to Betsy, who works as a bookkeeper. They have two daughters: Riley, who graduated from Clemson in Microbiology and received a masters degree from MUSC, and Saylor, who graduated from the College of Charleston with a degree in Education. The Whitaker family lives on James Island, and when he has the time David enjoys fishing, gardening, and woodworking.

**Dan Abel (1981):** Dan received a PhD in Marine Biology from Scripps Institution of Oceanography (UCSD) in 1986. He is now Associate Professor of Marine Science at Coastal Carolina University and director of the CCU Campus and Community Sustainability Initiative. Dan has been studying ecology of sharks in Winyah Bay, North Inlet, and Murrells Inlet, and has co-authored two textbooks on environmental issues (The third edition of Environmental Issues: An Introduction to Sustainability will be out in April 2007). Dan says that whatever success he has achieved in his life and career is due in large part to his College of Charleston education. His wife, Mary, is a physical therapist; daughter, Juliana, 21, is a C of C senior majoring in political science and his son, Louis, 19, is a C of C freshman.

**Joel Kostka (1988):** Joel received his PhD in Marine Science from the Univ. of Delaware, with postdocs at the Univ. of Wisconsin and Max Planck Inst. for Marine Microbiology in Bremen, Germany. He is an Associate Professor in the Oceanography Department at Florida State University. His research group studies the microbial ecology and biogeochemistry of coastal marine ecosystems and he teaches Marine Microbial Ecology and Biogeochemical Field Methods at the graduate level and

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## Faculty Notes

News from the **Erik Sotka** laboratory: Erik celebrated the birth of his son Kai in June 2006. **Beth Cushman** presented results from her MS thesis on gag grouper population genetics (funded by SC SeaGrant) to the Graduate Program in Marine Biology's Student Colloquium (February 23-24, 2007) and the Southeastern Ecology and Evolution Conference (March 16-18, 2007) in Orlando, FL. She has been awarded a Research Grant (\$500) from the Graduate School to attend the University of Washington's Summer Institute of Statistical Genetics. **Amanda McCarty** presented results from her MS thesis on geographic variation in seaweed-herbivore interactions (funded by the National Science Foundation) to the GPMB Colloquium and as a poster to the Benthic Ecology Meeting (March 2007) in Atlanta, GA. CofC undergraduate **Sam Crickenberger** presented work from his thesis on the fouling communities of Charleston Harbor. Sam received a great deal of local press for being among the first scientists to document an invasive (to Charleston Harbor) South American barnacle (*Megabalanus tintinnabulum*) and Asian green mussel. He presented a poster to the Benthic Ecology Meeting in Atlanta and was accepted at multiple graduate schools. He will attend Clemson University this fall to work with Dr. Amy Moran.

From the **Robert Podolsky** laboratory: **Haley O'Brien**, a CofC undergraduate, has been carrying out independent research this semester. Her project looks at the effects of atmospheric CO<sub>2</sub> concentrations on the early development of the local mud snail *Ilyanassa obsoleta*. Elevated levels of CO<sub>2</sub> lower the pH of seawater making it more acidic, which can inhibit the formation of calcium carbonate (a common component of

snail shells, coral skeletons, and other hard structures in the sea). In her research, Haley is manipulating CO<sub>2</sub> levels in seawater to match levels predicted 50, 150, and 300 years in the future. She predicts that these increases in CO<sub>2</sub> will weaken the shells of mud snail larvae that hatch from egg capsules, increasing the vulnerability of these small, vulnerable stages to predators.

In the lab of **Craig Plante**, the main focus is the microbial ecology of marine sediments. Recently, this has centered specifically on the role of biotic disturbance and its effects on both heterotrophic bacteria and benthic microalgae. **Stacey Littlefield** traveled to Panama over the summer to finish data collection for her MS thesis research on the effects of sea cucumber deposit feeding on the structure of bacterial assemblages. Dr. Plante has conducted related research, but instead focused on the landscape-scale effects of lugworm feeding in the intertidal sediments of Maine. He presented this work at the Benthic Ecology Meeting (March 2007) in Atlanta. CofC undergraduate **Jennifer Wilkie** conducted research on non-equilibrium processes that structure benthic microalgal communities. She received a CofC undergraduate research travel grant, which allowed her to present her research at the Benthic Ecology Meeting in Atlanta. Middlebury College student **Kieran Coe** worked with Dr. Plante as a summer REU student, and again during the January-February semester break, prospecting for surfactant-resistant bacteria in marine habitats. This work holds promise for bioremediation of contaminated sediments. Dr. Plante also studies quorum sensing (a means of communication in bacteria) in sedimentary

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### **Grice Lecture** - Cont. from page 1

of Hawaii. He joined the staff of WHOI in 1959 as a research associate in marine zoology in the Biology Department. He was promoted to Associate Scientist and then Senior Scientist. He served as chair of the Department of Biology from 1974 to 1981, when he was named Associate Director for Scientific Operations. He played a major role in planning for the nation's new fleet of research vessels including the RV *Atlantis* and its sister ships.

In his research he was a leader in using large specialized enclosures called mesocosms to study plankton communities under controlled conditions. He coauthored a book in 1982 called *Marine Mesocosms*, which is available in our Marine Resources Library.

After his formal retirement from WHOI in 1991 he was named Director of the Research Planning

and Coordination Division for the Northeast Fisheries Science Center of the National Marine Fisheries Service in Woods Hole. He was later named Deputy Science and Research Director for the center.

In 1997 Dr. Grice accepted an appointment with the Intergovernmental Oceanographic Commission (IOC) in Paris, France to serve as Senior Assistant Secretary for Oceans and Living Resources. This work involved oversight of international coral reef monitoring programs and the development of the Living Marine Resource Module of the Global Ocean Observing System.

Dr. George D. Grice, Jr. passed away in March 2001. The lectureship established in his name will continue to honor a family that has contributed much to marine research and education in South Carolina and beyond. The first lecture will occur in the fall semester of 2007.

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~GRICE

## Student & Faculty Awards

### Awards

**Stacey Littlefield & Adair Dempsey** - McLeod-Frampton Scholarship from the South Carolina Agricultural Society. \$5,000

**Artur Veloso & Jessalyn Ierardi** - Marine Genomics Award. \$20,000

**Claudia Friess & Tom Baird** - Presidential Summer Research Award, College of Charleston. \$3,750

### Student Presentations

**Courtney Arthur** "Diamondback terrapins and mercury: the who, what, how, where and why of using *Malaclemys terrapin* as an estuarine sentinel species". International Sea Turtle Symposium.

**Gaëlle Blanvillain** "Methylmercury and total Mercury Concentrations in diamondback terrapin (*Malaclemys terrapin*) scutes and salt marsh periwinkle snails (*Littoraria irrorata*)". SETAC Montreal, Canada. November 2006.

**Jessalyn Ierardi** "Health Assessment of the North Atlantic Right Whale through Expression of Target Immune/Stress Response Genes". International Society for Developmental and Comparative Immunology Conference.

**Luis Leandro** "Exposure of the North Atlantic right whale to multiple algal biotoxins: the proof is in the poop!" North Atlantic Right Whale Consortium, New Bedford, MA.

**Jeffrey Schwenter** "Determination of blood mercury levels in diamondback terrapins (*Malaclemys terrapin*) using two distinct stable isotope tracers with application to pharmacokinetic wildlife studies." Eighth International Conference on Mercury as a Global Pollutant. Madison, Wisconsin. 2006.

**Lindy Thibodeaux** "Lactate Excretion in Crustaceans during Exercise: Effects of Bacterial Infection". American Physiological Society, Virginia Beach, VA, Oct. 2006.

**Kimberly S. Wieber**. "Associations of Demersal Fishes on the Charleston Bump and Adjacent Blake Plateau". SC-AFS, GA-AFS, SCFWA joint meeting, January 2007.

**Heidi R. Williams** "The Fate of *Vibrio campbellii* within the Eastern Oyster, *Crassostrea virginica* (Gmelin)". World Aquaculture Society and National Shellfisheries Association, March 2007.

**Debra Zdankiewicz** "The Distribution and Stratification of Fat Soluble Organic Contaminants in Bottlenose Dolphin Blubber".

Oral Presentation at SETAC 27th Annual North America Meeting in Montreal, Quebec, Canada. 2006.

## New Staff Member at GML

GML welcomes our new staff member, **Peter Meier**, who was hired in November 2006 to support the Graduate Program in Marine Biology and the Grice Marine Laboratory. He moved to Charleston from Burlington, Vermont in 2005 where he worked for the Vermont Cooperative Fish and Wildlife Research Unit at the University of Vermont. Pete has his B.S. in Coastal Science from University of Connecticut and has 6 years experience working in a marine research lab setting. After graduation, he spent 4 years working for Millstone Environmental Laboratory in Niantic, Connecticut on 2 research vessels



Courtney Arthur (left) won the award for Best Student Presentation at the annual Student Research Colloquium.



as well as in the lab conducting research on lobster and flounder population dynamics.

Pete's duties at GML include maintaining the boat fleet and wet-lab, office and administrative duties and most importantly, trying to keep everybody at GML happy.



## Craig Plante Directs GPMB

In 2007 Craig Plante took over as director of the Graduate Program in Marine Biology, replacing David Owens. Dr. Plante received his Ph.D. from the University of Washington. He came to the College of Charleston in 1994 and will be promoted to Professor in the Fall of 2007. His research interests include microbial ecology, benthic biology, the influence of animal-microbe interactions on biogeochemical processes, and the role of autoinduction in the development of marine biofilms.

## Research Colloquium

The 10<sup>th</sup> annual Marine Biology Student Research Colloquium was held on February 23<sup>rd</sup> and 24<sup>th</sup>, 2006. The keynote speaker, Dr. Peter Wainwright, a professor of Evolution and Ecology, was invited from University of California, Davis. As a comparative functional morphologist, he investigates the effects of evolution on the patterns and themes of functional diversity in both physiological and biomechanical systems. He examines the ecological and evolutionary implications of specific evolutionary and ontogenetic adaptations focusing on the biomechanics of suction feeding and pharyngeal jaw apparatus in teleost fishes and on comparative analysis of morphological and functional diversity. In his talks, he discussed the high rates of innovation and diversity of feeding morphology in coral reef fishes. Dr. Wainwright helped develop time-calibrated phylogenies to illustrate how significant evolution rates result in high morphological and functional diversity among groups.

Eighteen students participated in the oral presentations this year. The oral presentations were evaluated by a panel of six judges on the basis of: 1) scientific content including introduction of the problem, hypothesis testing, methodologies, and analyses; 2) presentation of the material including delivery, organization, and graphics; and 3) functional understanding of the science as demonstrated in the question and answer period. Peer reviews were also conducted by audience members to facilitate the presenters' oratory development. Courtney Arthur received the award this year for her talk titled "Preliminary Assessment of the

Diamondback Terrapin, *Malaclemys terrapin*, as an Indicator of Regional Mercury Contamination along the Southeastern Coast of the United States". Her research, which was conducted with Dr. David Owens, hypothesized the diamondback terrapin might be a good indicator species in mercury-contaminated estuaries due to its wide distribution, high site fidelity, status as a high trophic-level predator and

expected life span. She compared mercury levels in terrapin scutes from three distinct airsheds to evaluate the relationship between atmospheric mercury inputs and terrapin mercury levels and to determine its sensitivity to differential environmental levels of mercury. Future analysis of blood, scute and sediment samples from the three regions will determine the usefulness of the diamondback terrapin as an indicator species for mercury contamination. The day was finalized with a talk from the keynote speaker titled "Secrets of Success in Coral Reef Fishes" and the award presentation. A cookout complete with BBQ and veggie burgers was held in the outdoor classroom at the Marshlands House.

Pictures from this colloquium and past events are available at [www.cofc.edu/~marine](http://www.cofc.edu/~marine).

### Faculty Notes - Cont. from page 3

bacteria and presented results of this research at the 11<sup>th</sup> International Symposium on Microbial Ecology in Vienna, Austria (August 2006).

**Gorka Sancho** continues to work on the behavioral ecology of fishes, both in the distant equatorial Indian Ocean and in the marsh behind the Grice Marine Laboratory. He just published observations of previously unknown deep diving behaviors of yellowfin tuna, which have been recorded descending to 1160 meters in the Indian Ocean. This work was published with other members of the FADIO project (Fish Aggregating Devices as Instrumented Observatories). A bit closer to home, along with **Meg Malone** and **Alice Worrel**, two CofC undergraduates, the lab has developed an acoustic tracking kayak to be able to follow the movements of tagged fishes in the very shallow waters of Grice Cove. In the summer of 2007 you will see members of the lab following these fishes back and forth as we try to identify the habitat use patterns of these

species and continue to study the behavior of seatrout at the spawning aggregation off Fort Johnson, a project funded by a College of Charleston Research and Development Grant.

The **Burnett Lab** is part of a team effort to determine whether oysters can be used as a sentinel organism to predict the health of estuarine habitats. The project, sponsored by NOAA's Center of Excellence for Oceans and Human Health at the Hollings Marine Laboratory, involves scientists with expertise ranging from molecular biology and bioinformatics to field and community ecology. That means that summer intern



Student Meg Malone tracks spotted seatrout.

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### Fish Biodiversity - Cont. from page 1

morphological and molecular analysis of the phylogenetic relationships of Indo-Pacific coral gobies (Gobiidae: *Gobiodon*), which is to be published this year, addresses the general question as to whether or not such diverse sources of information should be analyzed together to arrive at a solution supported by the maximum available evidence.



Dr. Tony Harold at the Grice Marine Lab.

Much of the work

on this paper was carried out during Dr. Harold's sabbatical leave during spring semester 2006.

Two new graduate students are beginning work in Dr. Harold's lab this academic year. **Ray Simpson** will be studying patterns of intra- and interspecific variation in certain midwater fishes (*Bregmaceros* species). Data used to study these patterns will be acquired using multivariate morphometric shape analysis, histology and radiography. **Jackie Wilkie** will be working on a study of temporal variation in the diversity and abundance of marine fishes off Folly Beach. Her project is one component of a larger study funded by SCDNR which involves a comparable study at Myrtle Beach to be carried out by faculty and students at Coastal Carolina University.

Another aspect of Dr. Harold's work relates to the maintenance and development of the Fish



### Undergrad Research - Cont. from page 1

Research Experiences for Undergraduates (REU) Program. Four of the interns were from universities in South Carolina.

**Thomas Miller** and **Andrea Peterson**, both from the College of Charleston's South Carolina Alliance for Minority Participation program, earned internships, along with **Sherry Pittman** from Coastal Carolina University and **Sara Dunaway** of



Anderson University. Other interns hailed from schools across the country, including Texas, Wisconsin and Vermont. In addition to its focus on research, classroom and independent

and Invertebrate collection resource at Grice. The collection is a part of the Southeastern Regional Taxonomic Center (SERTC) project, and has been generously sponsored by NOAA Fisheries, through a contract with the South Carolina Department of Natural Resources (Elizabeth Wenner, P.I.). The Grice collection has developed a database through this project which houses nearly 6,000 records of fish species/collection data. Allison Chandler has worked in the collection as a curatorial assistant during the last two years and has been directly involved in the growth and development of the database. The database is an important developing resource on the biodiversity of inshore marine and freshwater species of the southeast.



## New Construction at Grice

After years of planning, some new building activity will take place at the Grice lab. Last spring the state appropriated \$4 million for the construction of a new facility that will serve multiple functions. The features of the building will include new teaching labs that will support the new areas of marine genomics, a classroom, office spaces for faculty, staff, and graduate students, residential units for students and visiting scientists, meeting rooms, as well as a shop and storage areas. The new facility will also include an area for the display of marine specimens and information regarding the history of Fort Johnson. The initial stages of the process begin in the summer of 2007.

reading, the Summer Program also gives interns first-hand experience with the Lowcountry's distinctive marine habitats. Among many notable field trips, **Dr. Reid Wiseman** led forays into the mudflats and beachfronts of Kiawah as well as the Charleston Harbor, while **Dr. David Owens** combined an overnight field trip to the ACE Basin with role-playing sessions on scientific ethics.

The Summer Program at the Grice Laboratory began in 1992 and has received continuous support from NSF since 2000. Over the past 15 summers, more than 100 undergraduates from 47 states have conducted research with mentors from Grice and all of the Fort Johnson partner institutions. The Program continues to enjoy high praise from NSF and former participants for helping guide the career path for a new generation of scientists. Our web page: [www.cofc.edu/~reu](http://www.cofc.edu/~reu).



## Alumni Notes - Cont. from page 2

oceanography at the undergraduate level. Joel's wife is Beth Kostka and he has two children, Laurel, age 7, and Lily, age 5. The Kostka family is currently living in Germany for a year. The Hanse Institute for Advanced Study, Delmenhorst, Germany and the Max Planck Institute for Marine Microbiology, Bremen, Germany, have awarded him a sabbatical fellowship to support his research for one year from August, 2006, to August, 2007. The title of his fellowship project is, "The Biogeochemistry and Microbiology of Nitrogen Removal from Permeable Sediments." Joel is collaborating with other fellows at the Hanse Institute as well as scientists from the Max Planck Institute and the University of Oldenburg in Germany. He has gone on several research cruises to the North Sea and will go on a cruise to the Arctic this summer. Visit Joel's website at <http://www.joelkostka.net>.

**Myra (Solorzano) Brouwer (1997):** After graduating from the Marine Biology Graduate Program in August 1997, Myra worked for the SCDNR as a biologist for the Inshore Fisheries section. In 2003, she left the DNR to pursue a career in fisheries management and took a job with the South Atlantic Fishery Management Council. Myra primarily assists in the coordination of the Council's coral and habitat initiatives, including development of a Fishery Ecosystem Plan for the South Atlantic region. She and her husband, Dennis, have been happily married for 11 years. Their son, Alex, is now 7 and his little brother, Evan, is 3.

**Julian Burgos (2001):** Julian is a PhD candidate at the School of Aquatic and Fishery Sciences, University of Washington (Seattle, WA). He is

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planning to defend his dissertation in the next few months. His research topic is related to using hydroacoustics to describe patterns of spatial distribution of walleye pollock in the Bering Sea and Gulf of Alaska. Julian is also working on a three-dimensional dynamic simulation model of walleye pollock distribution to be used as input to Steller Sea Lion foraging models. Since 2004 he has been very happily married to Nancy.

**Aimee Neeley (2005):** After receiving her Master's degree in Marine Biology from the College of Charleston, Aimee continued working for her mentor, Dr. Jack Ditullio, as a research associate. She has been a research technician

on several cruises to the North Atlantic Ocean and the Ross Sea, Antarctica to study the effects of climate change on ocean chemistry and phytoplankton physiology. She also spent a month at Palmer Station, a U.S. research station on the Palmer Peninsula, Antarctica. Amy has also continued her work on the dinoflagellate, *Karenia brevis*, studying the effects of light and iron on DMSP production, DMSP-lyase activity and protein regulation. She is currently pursuing other job opportunities in the field of oceanography and considering a PhD in oceanography.



## Making Jolly at Folly

On December 9 the Marine Biology Graduate Student Association, along with some GML faculty, staff and canine companions, participated in the annual Folly Beach Christmas Parade. The newly renovated RV *Chamberlain* was decked out in a marine Christmas theme and was captained by our own aqua-Santa Dave Owens. With lots of hot chocolate and cookies to keep us warm, we followed the parade route through the streets of Folly Beach throwing candy to the crowd. A good time was had by all.





**Faculty Notes - Cont. from page 5**

**Thomas Miller**, graduate students **Heidi Williams** and **Kolo Rathburn** and postdoctoral fellow **Dr. Brett Macey** have spent plenty of time in the pluffmud and at the bench measuring the ability of oysters to eliminate infectious microbes from their tissues. The group now has a robust and sophisticated model for monitoring disease-resistance in oysters, and data from models are being used to generate predictive mathematical models of South Carolina's tidal creeks. Graduate student **Lindy Thibodeaux** continues to place blue crabs on a treadmill to assess their performance while fighting bacterial infections.

The **Allan Strand** lab is currently focusing upon three primary projects, two of which are supported by external funding. **Miranda McManus**, a student in the MES program, is using genetic markers and progeny analysis to understand the polyploid history of the endangered Shortnose Sturgeon. The genetic markers that we have identified are also being used to estimate the amount of genetic differentiation among Sturgeon populations in Southeastern rivers. This work is funded through the National Fish and Wildlife Foundation. **Al Plan**, another MES student, is using genetic markers to characterize clonal reproduction in populations of the introduced plant Beach Vitex. We are trying to determine how many individuals

comprise each population of this invasive plant, in part to develop better control strategies. This work is part of a project funded by South Carolina Sea Grant Consortium. Finally, we have continued to develop individual-based population genetic models. These models have become important for testing existing population-genetic metrics under realistic demographic scenarios. The most recent model was just published by Allan Strand and **James Niehaus**, a former student in Computer Science, in *Molecular Ecology Notes*.

During November and December 2006, members of the **Jack DiTullio** lab embarked on a 45 day NSF-funded research expedition (CORSACS) to the Ross Sea in Antarctica aboard the RV/IB *Nathaniel B. Palmer*. The group consisted of **Dr. Jack DiTullio** (chief scientist), **Dr. Peter Lee**, **Aimee Neeley**, and students **Juliana Miller**, **Tom Baird** and **Jay Francella**. The focus of this project was to examine the effects of various climate change variables including CO<sub>2</sub>, temperature, iron and light on biogeochemistry and algal community dynamics. More information about this project can be found by visiting the website [www.whoi.edu/sites/corsacs](http://www.whoi.edu/sites/corsacs) or the special issue (March 16, 2007) of *Science* on the International Polar Year (315:1520-1521).

