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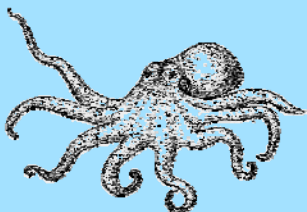
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Graduate Program in
Marine Biology

marinebiology.cofc.edu



“FORMER ZOOKEEPER” INTERESTED IN BIOLOGICAL MATERIALS

Andrew Clark is fascinated with animal form-function relationships. This fascination is a product of his childhood obsession with animals, his zookeeping experiences, and his training in comparative physiology. Andrew’s research interests include the mechanics of biological materials, musculoskeletal systems, and prey capture behaviors, and more broadly, how these topics relate to animal ecology and evolution and how they could potentially benefit humans. After earning a B.Sc. degree at the University of Maryland, Andrew worked as a zookeeper in Miami, FL for two years before returning to academia. Five years later, he earned a Ph.D. degree at the University of California Irvine, where he studied the biomechanics of jawless biting in hagfishes. He then spent one year as a postdoctoral associate at Clemson University, where he studied terrestrial locomotion in eublepharid geckoes, and in guinea fowl negotiating low friction surfaces. Andrew joined the CofC Biology Department as an Assistant Professor in 2010, where most of his research has investigated the mechanical properties of biological materials like hagfish skins and cockroach cuticles, and synthetic materials like silver-doped chitosan polymers and Kevlar-reinforced lacrosse pads. These projects are collaborations with high school students, CofC undergraduates, GPMB students, and faculty from the Biology and Physics departments.



GML POSTDOCS

Grice Marine Lab is fortunate to have a number of postdoctoral fellows contributing to research in CofC laboratories. Here we highlight their work and interests.



Sean Berthrong, Plante Lab

Dr. Berthrong was most recently a graduate student at Duke and a postdoc at Cornell. His work focuses on how different types of agricultural methods affect soil bacteria and fungi, and how these soil organisms can be used to improve our knowledge of ecology and make agriculture more sustainable. Sean has also recently begun studying diatoms and how they differ based on tidal cycles. He was raised in Boston and loves to bike and play squash.



Shannon Corrigan, Naylor Lab

Dr. Corrigan is fascinated by the evolution of natural history in marine organisms. Primarily she uses modern molecular approaches to study diversifying processes, with the ultimate aim of answering evolutionary or ecological questions. Shannon’s doctoral research (Macquarie University, Australia) focused on the evolution, phylogeography, and dispersal of wobbegong sharks. More recently Shannon has been studying movement and connectivity in shortfin makos. Her current postdoctoral position with Dr. Gavin Naylor allows her to explore

(Continued on page 7)

PETER MEIER WINS NOONAN AWARD

Pete Meier, Marine Operations Manager for Grice Marine Lab, has won the 5th annual Norine Noonan Award from the CofC School of Science and Math (SSM). This award recognizes the efforts of a faculty or staff member who has benefitted or enhanced the reputation of SSM. Pete was recognized for founding and operating the GML **CORAL** (Community Outreach in Research and Learning) program, which hosts visitors at GML and brings marine science to public venues through touch-tank and microscope displays. In the last 3 years, CORAL has brought educational outreach locally to over 4400 individuals (9000 since 2008!), including many schoolchildren who may have had little previous exposure to marine science. Congratulations and many thanks to Pete for his vision and leadership in science education and outreach!



Grice Marine Lab Staff

Bob Podolsky

GML Director &
Associate Professor of
Biology

Craig Plante

GPMB Director &
Professor of Biology

Shelly Brew

Administrative
Coordinator

Savannah Gilmore

Administrative
Specialist

Kristy Hill

Molecular Core Facility
Manager

Peter Meier

Marine Operations
Manager

Emily Phillips

Laboratory Assistant

NEW MOLECULAR CORE MANAGER

Kristina Hill joined the GML family in October 2013 to manage the Molecular Core Facility and to provide technical and research support to Dr. Craig Plante's benthic microbial ecology lab. Kristy is originally from Greensboro, NC, and she and her husband are new to the Charleston area. After receiving her B.A. in Environmental Science and Policy and Music from Duke University, she was a technician at the Virginia Institute of Marine Science (VIMS) in the Shellfish Pathology Lab. This experience sparked her interest in using molecular tools to answer important ecological questions. She went back to school to complete an M.S. in Marine Science at The College of William and Mary, where her thesis project involved assessing the diversity, molecular phylogeography, and dispersal of a genus of protistan parasites of oysters. As a research assistant in the Fisheries Genetics Lab at VIMS, she then worked on the population genetics of rays and spearfishes using microsatellite markers. Most recently, she was a research biologist at the Smithsonian Institution working on the latitudinal diversity of marine bivalve parasites, using standard molecular methods as well as next generation sequencing. Kristy is excited to be at Grice where she assists faculty, staff, and students in applying molecular methods to their research questions. Welcome, Kristy!

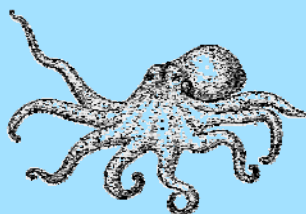


SUMMER REU PROGRAM

In summer 2013, Fort Johnson once again buzzed with the excitement of undergraduate research interns from around the world. Among these were 10 students selected from 188 applicants to participate in our NSF-sponsored Research Experiences for Undergraduates (REU) summer program. Working with scientists from among our Fort Johnson partners as part of the research theme, "Marine Organism Health: Resilience and Response to Environmental Change", the interns pursued research questions in physiology, toxicology, parasitology, ecology, molecular biology, and biochemistry using diverse marine organisms, including fish, crabs, coral, grass shrimp, sea urchins, alligators, sponges, and bacteria. Interns also participated in workshops, field trips, and exercises in communicating science to professional and public audiences. To complete their summer experience, the interns gave oral presentations and wrote research papers based on their data. Under the guidance of postdoctoral fellow Dr. Jillian Johnson, interns also installed a public educational display, featuring how marine organisms respond to environmental challenges (take a virtual tour of the display at: <http://tinyurl.com/memsxt5>). In addition, we are pleased to announce that NSF has awarded another three years of funding for our unique REU with its dual focus on research and communication. Congratulations and thanks to everyone involved in the success of the Fort Johnson Undergraduate Summer Research Program!



REU student Korin Albert



GRADUATE RESEARCH COLLOQUIUM

The 17th annual Marine Biology Student Research Colloquium was held on September 20th and 21st, 2013. The colloquium featured keynote speaker Dr. Felicia Coleman, a marine ecologist and Director of the Florida State University Coastal and Marine Laboratory, as well as Scientific Director for the new Deep-C Consortium at Florida State University. Felicia's research focuses on marine ecology as it relates to reef fishes and their interactions with other species and their habitat. She is also interested in how scientific findings are incorporated into the laws and regulations that affect the management and conservation of living marine resources. She gave two addresses at this year's colloquium: "Groupers on the edge: The secret lives of fishes" and "Descending from the ivory tower: A scien-

tist's plunge into the policy arena." Fourteen marine biology students gave oral presentations of their research at this year's colloquium. David Coles received the best oral presentation award. Seventeen students presented posters of their thesis research this year. Liz Duermit received the best poster presentation award. The colloquium concluded with a cookout and Lowcountry Boil for students, faculty, and colloquium attendees at the Marshland's House outdoor classroom.



*Dr. Felicia Coleman
Florida State University*

GEORGE D. GRICE, JR. LECTURE



Dr. Ken Halanych

On April 11, 2014, Dr. Ken Halanych from Auburn University gave the 6th annual George D. Grice, Jr. Lecture, a special Ft. Johnson seminar that honors the contributions of the Grice family to marine science. Ken's talk, "Two for the Show: An Antarctic Odyssey & A New View on Old Animals," covered his work on how biological, geological, and physical processes drive population connectivity and structure in the Southern Ocean, as well as his recent genomics research that is upending traditional views of animal relationships. Ken also met with graduate students for breakfast and a roundtable discussion on topics of professional interest.

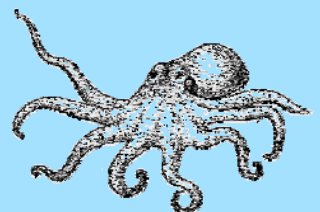
GREEN TEACHING GARDEN

The GPMB student-coordinated Green Teaching Garden (GTG), located between the two wings of the Grice Marine Lab, has had a productive year! The GTG includes four raised beds surrounded by a well-mulched rain garden filled with native plants. In October, the GTG was the first garden in South Carolina to be recognized as an Ocean Friendly Garden by the Surfrider Foundation. The garden is irrigated using rainwater captured from the Grice roof. This setup reduces stormwater runoff, produces vegetables and herbs, and serves as an educational resource for students. To highlight native plants, and to encourage visitors to plant them in their own gardens, Ashley Cooper Stormwater Educational Consortium (ACSEC) generously sponsored the purchase of ID signs. Paty Cowden, supervisor of the CofC Grounds Department, generously contributed herb and flower seedlings. In February, GPMB students Rebecca Balazs and Sharleen Johnson took part in a native plant rescue at a soon-to-be Boeing construction site, along with GPMB alumna Dorian McMillan and other community members. Many of the rescued native plants were transplanted into the GTG and into local parks, including Magnolia Plantation's Audubon Swamp. Edible harvests that have been shared with the Grice community include bell peppers, banana peppers, sweet potatoes, broccoli, kale, komatsuna, and culinary herbs. In mid-April, GPMB students took part in the fourth volunteer workday of the year to plant warm-season vegetables, basil, and flowers. Future goals include the incorporation of seating into the GTG to encourage increased utilization of this lovely space by the Grice community and visitors.



*GPMB students Liz Vinyard and Rebecca Balazs,
with Noah Balazs, planting dune sunflowers*

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RECENT GPMB DEGREES

Carly Altizer — Community Structure of Demersal Temperate Reef Fish at Artificial and Natural Reefs in South Carolina as a Function of Reef Age and Season (Advisor: Joey Ballenger)

Drew Anderson — Past and Present Genetic Structure of Striped Bass (*Morone saxatilis*) in the Carolinas and Effects from Stocking (Advisor: Tanya Darden)

Katie Anweiler — Low-Temperature Tolerance of Juvenile Spotted Seatrout, *Cynoscion nebulosus*, in South Carolina (Advisor: Mike Denson)

Walter Blair — In Vitro Search for Quorum Sensing Activity in Batch Cultures of Harmful Dinoflagellates and Algicidal Bacteria and Improved Bioassay Methods for Applications in Marine Matrices (Advisor: Greg Doucette)

Michelle D'Aguillo — The Feeding Ecology of the Naked Goby, *Gobiosoma bosc* (Teleostei): A Characterization of Diet Composition and an Ontogenetic Diet Shift (Advisor: Tony Harold)

Robin Garcia — Effects of Hypoxia and Low pH on Mosquito Insecticide Toxicity in Two Commercially Important Shellfish Species (Advisor: Marie DeLorenzo)

Whitney Hook — Antagonistic Interactions among Bacterial Populations of Marine Intertidal Sediments (Advisor: Craig Plante)

Jacob Kendrick — Physiological Changes in Response to Elevated Temperature Induced Viral

Resistance in The Coccolithophorid, *Emiliana huxleyi* (Prymnesiophyceae) (Advisor: Jack DiTullio)

Weatherly Meadors — An Assessment of Red Drum, *Sciaenops ocellatus*, Exhibiting External Lesions within South Carolina Estuaries (Advisor: Steve Arnott)

Jennifer Newby — An Assessment of Population Genetic and Social Structure in the Spotted Eagle Ray, *Aetobatus narinari*, off Sarasota, FL and the Southeast United States (Advisor: Andy Shedlock)

Tim O'Donnell — Characterizing the Genetic Population Structure of and Genetic Effects of Cold Winters on Spotted Seatrout (*Cynoscion nebulosus*) in the Southeast United States (Advisor: Tanya Darden)

Ashley Shaw — Dietary Niche Overlap of an Estuarine Predatory Fish Community in South Carolina Assessed by Stable Isotope Analysis (Advisor: Gorka Sancho)

Sammi Smoot — Anti-Bacterial Activity of Molluscan Egg Masses in the San Juan Islands, WA (Advisor: Bob Podolsky)

Anna Tommerdahl — Respiratory Properties of Hemocyanin from Wild and Aquacultured Penaeid Shrimp (Advisor: Lou Burnett)

STUDENT AWARDS

Vanessa Bezy — NSF Fellowship, Research Grant from the PADI Foundation

David Coles — Best Oral Presentation at the 2013 Marine Biology Student Research Colloquium

Sarah Doty — Joanna Deepwater Fellowship

Alyssa Demko — National Science Foundation Graduate Research Fellowship. Her proposed project was, "The effect of latitude on the evolution of algal defense and herbivore offense." Alyssa plans to use these funds to pursue her Ph.D.

Drew Duckett — GPMB Genomics Fellowship

Liz Duermit — GSA, GPMB, and MBGSA travel grants; Lerner-Grey Grant; Best Poster at the 2013 Marine Biology Student Research Colloquium

Kelly Fridey — Marine Genomics Fellowship; CofC Graduate Student Presentation Grant; GSA Travel Grant; MBGSA Travel Grant; GPMB Travel Grant

Nicole Kollars — Grant in Aid of Research from the Phycological Society of America; CofC Graduate Student Research Grant; GSA Research Grant

Jackie Leidig — CofC Graduate Student Association Research Grant; Slocum-Lunz Foundation Research Grant; Charleston Scientific and Cultural Education Fund Research Grant; McLeod-Frampton Graduate Scholarship

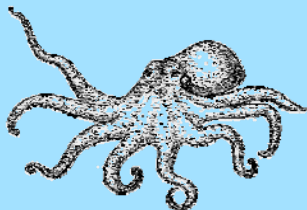
Megan Meek — CofC Graduate Student Association Travel Grant; GPMB Travel Award; CofC Graduate School Research Presentation Grant

Meredith Smylie — Joanna Deep Water Fund Fellowship, Honorable Mention for Oral Presentation at SCFWA-SCFS Meeting

The following students received the Presidential Summer Research Award: David Coles (2013), Courtney Gerstenmaier (2013 & 2014), Whitney Heuring (2014), Nicole Kollars (2013), Mark Lehtonen (2014) and Nicole Schanke (2013 & 2014).



Biology faculty member Rob Dillon presents the Best Oral Presentation award to David Coles at the Student Research Colloquium



FACULTY NOTES

Burnett Lab: In Fall 2013, Anna Tommerdahl successfully defended her thesis, “Respiratory Properties of Hemocyanin from Wild and Aquacultured Penaeid Shrimp”. In work closely related to Anna’s experiments, summer REU intern Christian Millán-Hernández compared the respiratory properties of hemocyanin in mud crabs *Panopeus herbstii* exposed to low oxygen and/or high CO₂. His results support the idea that high CO₂ can enhance the delivery of oxygen to tissues in crabs that are simultaneously exposed to low oxygen. Graduate students Sarah Song, Becca Derex, and Jason Wang are continuing their Master’s research. Congratulations to Jason who was recently awarded an East Asia Pacific Summer Institute (EAPSI) Fellowship from NSF. With this support he will spend two months at the National Dong Hwa University in Taiwan investigating biochemical and molecular responses of shrimp to nitrite. Congratulations also go to Burnett Lab GPMB graduates Kris Stover, Casey Darling, Kolo Rathburn, and to postdoctoral fellow Kristin Hardy Lema, whose studies were published in peer-reviewed journals during the past year. Postdoctoral fellow Dr. Jillian Johnson joined the Burnett Lab in 2013. Jill is using high throughput RNA sequencing to identify and quantify changes in the synthesis of hemocyanin in shrimp and blue crabs challenged with oxygen and high CO₂. In January 2014, the entire Burnett Lab travelled to Austin, TX for the Annual Meeting of the Society of Integrative and Comparative Biology. The Lab welcomed first year GPMB students Ann Wassick and Mark Lehtonen and anticipate a new lab addition from the Johnson family very soon!

deBuron Lab: The parasite group remains active — Lots of parasites to work on! Jen Hein (former MES student now working at SCDNR) is the lead author on a paper updating the status of an invasive swimbladder nematode in American eels in our estuaries (Hein et al., 2014, Disease of Aquatic Organisms) and REU DNR MIMES student Sharamie Ware (Savannah State University) was a co-author on a paper about a muscle dwelling myxozoan that infects the spotted seatrout (Ware et al., 2014, Comparative Parasitology). Thanks to the Mariculture Section at SCDNR, the Lab has determined the seasonality of the infection of the spotted seatrout by the myxozoan and, in an ongoing collaboration with Dr. Eric McElroy (Dept. of Biology, CofC), has brought a new perspective to this fish host-parasite interaction. Great

leaps forward were also accomplished in the past year in the knowledge of seatrout blood fluke in collaboration with Dr. Dennis Kyle, University of South Florida.

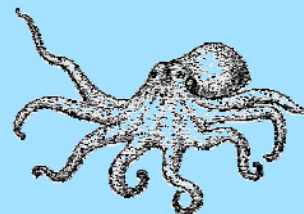
DiTullio Lab: During the past year, the DiTullio phytoplankton ecology lab was primarily focused on analyzing oceanographic field samples collected on the two recent voyages to the Northeast Atlantic Ocean off Iceland, and to the Ross Sea, Antarctica in 2012 and 2013, respectively. The shipboard research van “Cougar Town” and its equipment returned intact to its home base last fall. The Antarctic expedition (TRACERS) investigated the fate of algal carbon export. The Iceland research cruise focused on coccolithovirus infection dynamics on the marine coccolithophorid, *Emiliana huxleyi*. GPMB graduate Jacob Kendrick successfully defended his thesis, “Physiological Changes in Response to Elevated Temperature Induced Viral Resistance in the Coccolithophorid, *Emiliana huxleyi* (Prymnesiophyceae)”. He recently presented his results at the 2014 ASLO Ocean Sciences Meeting in Honolulu, HI. GPMB students Nicole Schanke and Jessica Snyder continued their thesis research projects investigating the effects of ultraviolet radiation on cell growth, physiology, biogenic sulfur compounds, and mycosporine amino acid production in the sea ice diatom *Fragilariopsis cylindrus*, respectively. Happy trails to CofC undergraduate student Rachel Stevens and GPMB student Jason Smith (Mike Janech, major advisor) who defended his thesis on the effects of irradiance on ice-binding proteins in *F. cylindrus*.

Plante Lab: The research focus of the Plante lab is the microbial ecology of marine sediments. Recent collaborations with former REU summer intern Virginia Fler and Martin Jones (CofC, Mathematics) apply neutral models to the community assembly of benthic microalgae (BMA). In a related project, 2013 REU summer intern Luis Rivera-Garcia, with assistance from visiting post-doctoral fellow Dr. Sean Berthrong, used complementary molecular techniques (DGGE, NGS) to describe spatio-temporal patterns in BMA in Charleston Harbor. New undergraduate student Aubrey Butcher initiated a project at Folly Beach to determine re-nourishment effects on BMA. GPMB student Vanessa Bezy was awarded a prestigious NSF-Graduate Research Fellowship to perform research on olive ridley sea turtles. Vanessa spent autumn in Costa Rica testing whether high microbial loads caused by



It's a tough day at the office for GPMB student Jason Wang from the Burnett Lab

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FACULTY NOTES (CONT.)

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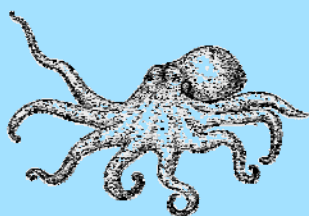
the abundant broken eggs during mass nesting events (arribadas) contribute to low hatching success at these beaches. In December, GPMB student Whitney Hook defended her thesis on the role of inference competition (via antibiotic production) in structuring bacterial communities in intertidal sediments. Long-time lab tech Tricia Roth moved to Virginia. Her replacement, Kristina Hill, arrived in November and is fitting in nicely!

Podolsky Lab: The Podolsky lab continued to study the reproduction and early life-history biology of marine invertebrates. GPMB student Sammi Smoot defended her Master's thesis, "Anti-Bacterial Activity of Molluscan Egg Masses in the San Juan Islands, WA". Connor Benfield, an REU student from Cornell, studied the effect of ocean acidification and temperature on fertilization success in northern and southern populations of sea urchins. CofC undergraduate student Tess Dooley also contributed to this work, measuring a series of gamete characteristics to be used in mechanistic models for understanding which factors drive population differences in fertilization success. Tess is planning to continue these studies, looking at genetic variation in the susceptibility of gametes to acidification. Finally, CofC undergraduate student Annie Jean Rendleman began a new research direction for the lab, doing collections and measurements of pycnogonids (sea spiders) to assess sexual selection and sexual dimorphism in a species that exhibits male parental care.

Sancho Lab: Ashley Shaw successfully defended her thesis titled "Dietary Niche Overlap of an Estuarine Predatory Fish Community in South Carolina Assessed by Stable Isotope Analysis" and is now working for SCDNR. Sarah Doty (GPMB student) finished analyzing stomach samples from lionfish collected in Key Biscayne National Park in Florida and, with the help of Erik Sotka, did genetic bar-coding of unidentified prey to determine their identity (mostly gobies!). Sarah Doty, Kelsey Yetsko (CofC undergraduate student) and Alison Deary (CofC undergraduate alumni, now VIMS PhD Program) all gave talks on their research results (on lionfish, killifish, and tuna, respectively) at the Southeastern Chapter Meeting of the American Fisheries Society in Charleston. Gorka Sancho attended the Ocean Sciences Meeting in Honolulu where he presented his research results on hydrothermal vent fish surveys done in collaboration with Javier Es-

cartin (CNRS-France), Rafael Garcie (U de Girona — Spain) and Jessica Miller (CofC undergraduate). Rachel Basset (MES student) joined the Lab and will be working with SCDNR-MARMAP to provide fisheries research opportunities to four CofC undergraduate students, who will be working on the effects of marine protected areas on various fish species off the Charleston shelf waters, as part of a newly funded SC SeaGrant project.

Sotka Lab: The Sotka lab continued work on the ecological impacts of the invasive seaweed *Gracilaria vermiculophylla* on Southeastern US estuaries, led by GPMB students Nicole Kollars and Courtney Gerstenmaier and our collaborators at the University of Georgia. GPMB student Alyssa Demko continued work on latitudinal gradients in seaweed defenses against marine herbivores. Alyssa received the prestigious National Science Foundation Graduate Research Fellowship. She is only the second GPMB student to do so. Alyssa will use this fellowship to support her PhD degree in 2015. During the busy summer season, the Lab had help from undergraduates from across the country (SCDNR REU-recipient Edna Diaz-Negron from U. Hawaii, Clemson undergraduates Carrie Hemphill and Charlton Brownell, and CofC undergraduate Megan Judd) and a high school student (Jess Murden from AMHS). A new postdoctoral researcher, Stacy Krueger-Hadfield co-authored a successful proposal for an NSF grant that will explore genetic adaptation during the invasion of *G. vermiculophylla*. This three-year grant will keep the Lab busy collecting and rearing seaweeds from Asia, Europe, and North America.



Dr. Erik Sotka with GPMB students Courtney Gerstenmaier, Meredith Smylie, Alyssa Demko, and Nicole Kollars at the Benthic Ecology Meeting in Jacksonville, FL

GML POSTDOCS (CONT.)

interesting questions across the Chondrichthyan Tree of Life, while also learning to apply emerging techniques and analytical approaches.



Jillian Johnson, Burnett Lab

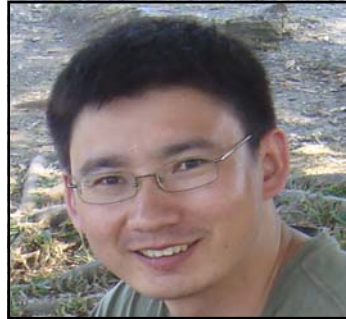
Dr. Johnson completed her Ph.D. in the Marine Biomedicine and Environmental Studies Department in Fran Van Dolah's lab at the Medical University of South Carolina in the fall of 2012. Her dissertation research investigated the molecular machinery that is involved in aging and the execution of programmed cell death in the toxic dinoflagellate, *Karenia brevis*. Jill was a NOAA Oceans and Human Health Predoctoral Fellow at MUSC, and through her traineeship developed the Oceans and Human Health Summer Undergraduate Program (SURP). Her current research in the Burnett Lab focuses on the molecular mechanisms regulating adaptation strategies to hypoxic conditions using a next generation sequencing approach. Jill is the very proud wife of GPMB Alum, Nat Johnson, mother of a two year old son, Anders, and newborn son, Hagen. Jill enjoys camping with her family and climbing at the county park.



**Stacy Krueger-Hadfield,
Sotka Lab**

Dr. Krueger-Hadfield is a molecular ecologist, specializing in marine population connectivity and mating systems. For her dissertation, she investigated the population structure and mating system of the red alga *Chondrus crispus*, earning two PhD's from the Universite de Pierre et Marie Curie and the Pontificia Universidad Catolica de Chile. Stacy completed her first post-doctoral appointment at the Marine Biological Association of the United Kingdom

working on the population structure of the coccolithophore *Emiliania huxleyi* as well as the invasive history of two Southern Hemisphere ascidians. She is currently working with Dr. Erik Sotka and his laboratory on the invasive history of the red alga *Gracilaria vermiculophylla*. With Drs. Sotka, Strand, and Murren at CofC, Stacy co-wrote a recently funded NSF grant which will enable them to investigate the evolutionary adaptations which facilitate biological invasions.



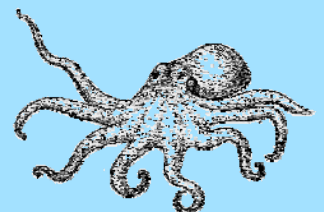
Lei Yang, Naylor Lab

Since 2005, Dr. Yang's work has focused on two CTOL projects: the Cypriniformes Tree of Life Project and the Chondrichthyes Tree of Life Project. His work with Dr. Mayden (Saint Louis University, Missouri) was on the subfamily Cyprininae (carps, goldfishes, barbs, snowtrouts, etc.). Lei's work in the Naylor Lab is to investigate the phylogenetic relationships, biogeography, and character evolution of skates and rays and to determine whole mitochondrial genome sequences for chondrichthyes. Various target enrichment methods, next generation sequencing, and bioinformatics are used to help him achieve his goals.

LOU BURNETT, SAML PRESIDENT

Lou Burnett is the 2014-2015 President of the Southern Association of Marine Laboratories (SAML) (<http://saml.naml.org>). SAML is an important voice for marine laboratories from Texas to Maryland, including Bermuda, U.S. Virgin Islands, and Panama. SAML is one of three regional organizations of the National Association of Marine Laboratories (NAML) (<http://naml.org>). This large network of marine laboratories has been important in stimulating research and promoting education in the marine sciences for almost 30 years.

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Carole Baldwin (1986): After leaving the College of Charleston, I completed the Ph.D. program in Marine Science at the College of William and Mary's Virginia Institute of Marine Science, and I have been employed by the Smithsonian Institution's National Museum of Natural History since 1992. I am the Division of Fishes Curator in Charge and my research is focused on diversity and evolution of Caribbean reef fishes through a combination of genetic and traditional morphological studies. This work has recently involved submersible diving to 1,000 ft. off

Curacao in the southern Caribbean as part of DROP (Deep Reef Observation Project), a Smithsonian marine research endeavor that I initiated in 2011. I am on the Board of Directors of the National Aquarium, Board of Governors of the American Society of Ichthyologists and Herpetologists, Elected Council for the Biological Society of Washington, and editorial board for the scientific journal *Zookeys*. I was a scientific advisor for and featured in the Smithsonian 3-D IMAX film, *Galapagos*, I co-authored *One Fish, Two Fish, Crawfish, Bluefish — The Smithsonian Sustainable Seafood Cookbook* (Smithsonian Books, 2003), and I served as a curator of the Smithsonian's Sant Ocean Hall.

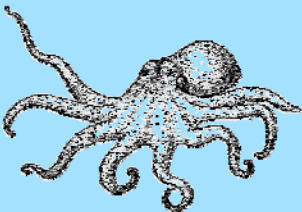
Majbritt Bolton-Warberg (2005): Since graduating and working with Dr. Loren Coen at SCDNR, I moved back to my native Ireland. I worked briefly with BIM (the Irish Sea Fisheries Board) as a researcher in Galway city. I was then offered a PhD fellowship with the National University of Ireland, Galway on the EIRCOD

project (a nationally funded breeding program for the Irish aquaculture industry) which examines various aspects of cod biology and culture. I worked closely with a small research team based in NUIG's marine research station in Carna, an Irish-speaking village on the west coast of Ireland. To date, I have authored three peer-reviewed publications and am co-author on three more, with a couple more in the pipeline. I have been an invited speaker to conferences in Ireland, Iceland, and Norway. Currently, I am employed with the University as a post-doctoral researcher on the EIRCOD project until its completion (January 2015) where I am the overall coordinator of the research program in Carna and report directly to the project coordinator (Dr. Richard FitzGerald). Working in this wild and scenic area gives me the opportunity to indulge in some of my favorite activities: snorkeling, diving, hill walking, eating/cooking fresh local seafood, and practicing my Irish, which has gone a bit rusty!

Laura Borecki (2006): I recently celebrated my 5th anniversary at the Stroud Water Research Center in Avondale, PA. I am the lab manager of the Fish Molecular Ecology lab and the Microbiology lab. I have worked on a number of projects including fish temperature stress response, freshwater mussel environmental DNA, fish movement and habitat preference through mark-recapture studies, snail population distribution, pesticide levels in fish, microbial fuel cells, long-term trends in local microbial communities, and many more.



Alumni David McLean (1988) and Geno Olmi (1986) catch up at the reunion.



ALUMNI NOTES

GPMB 40TH REUNION

The weekend of November 15th-16th, 2013 marked the 40th Anniversary of the Graduate Program in Marine Biology at the College of Charleston. Alumni, faculty, current students, and friends were invited to participate in a Happy Hour Social at the DNR Outdoor Classroom on Friday evening, and an Oyster Roast in the new School of Science and Mathematics Building (SSMB) Courtyard and Atrium on Saturday evening. Attendees of the Oyster Roast received special after-hours access to the Mace Brown Natural History Museum on the second floor of the SSMB. GPMB alum Jaykob Kendrick provided the live music for the Oyster Roast, followed by a special presentation entitled, "GPMB: Past, Present, and Future" by Chip Biernbaum. Over 100 people came together to celebrate this program milestone. Looking forward to the 50th!



Alumni Michelle D'Aguillo (far left) and Katie Anweiler (far right) chatted with current students Nicole Kollars, Meredith Smylie, Nicole Schanke, and Liz Duermit at the 40th Reunion.