



GRICE LOGBOOK

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

Volume 1, No. 1
August 17, 2001

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Feel free to forward announcements, photos & suggestions to marine@cofc.edu.

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GRICE LOGBOOK

The George D. Grice Marine Laboratory, named in honor of the 14th president of the College, is located at Fort Johnson, on James Island, across Charleston Harbor from downtown Charleston. The facility houses classrooms, student laboratories, research laboratories, faculty offices, an aquarium room, and a research collection of marine invertebrates and fishes. (Click here for more on the [background and history of the Grice Marine Laboratory & Fort Johnson](#); see also the [GML Mission Statement](#) in this newsletter.) This newsletter is designed to communicate activities in the marine sciences that are occurring at the Grice Marine Laboratory (GML) and in the Graduate Program in Marine Biology (GPMB). It is intended to be a publication for students, alumni, faculty, staff, administrators, and friends who wish to keep up with the College of Charleston's marine laboratory and the programs it supports. We intend to publish this newsletter electronically approximately once per month. We hope you find it informative and useful.

*Lou Burnett, GML Director
Dave Owens, GPMB Director*



The R/V Chamberlain, one of the Grice fleet, is named after Dr. Norman A. Chamberlain, a longtime faculty member at the College of Charleston, former Director of the Grice Marine Laboratory, and the first Director of the Marine Biology Graduate Program. He retired from the College in 1990. The naming of this vessel acknowledges Dr. Chamberlain's numerous contributions to the undergraduate and graduate programs in marine biology.

UNDERGRADUATE SUMMER RESEARCH PROGRAM COMPLETES 10TH YEAR

The undergraduate students in the Fort Johnson Summer Research Program completed their summer projects and reported their results in a symposium dedicated to the event on Friday, August 3. Seven students from different home institutions participated in this summer's program. The program was funded by a grant from the National Science Foundation. The students and the titles of their projects are listed below.



Main entrance of the Hollings Marine Laboratory.

HOLLINGS MARINE LABORATORY UPDATE

The Hollings Marine Laboratory (HML) at Fort Johnson is nearing completion. Final inspections have occurred throughout the summer and the finishing touches on the high tech building are taking place. There is still no word yet on when scientists will be able to move in to the building.

The occupants of the building form a partnership and the building, funded by National Oceanic and Atmospheric Administration (NOAA), fosters collaborative research. The partners include the University of Charleston, SC (UCSC), South Carolina Department of Natural Resources (SC DNR), NOAA/National Ocean Service (NOS), National Institute of Standards and Technology (NIST), and the Medical University of South Carolina (MUSC). A structure has been put into place to work out the details of the operation. There is a five member Science Board that has worked for months to craft working agreements, define how space will be used, and oversee the operation of the building. The members of the Science Board are Paul Becker (NIST), Lou Burnett (UCSC), Fred Holland (SC DNR), Eric Lacy (MUSC), and Geoff Scott (NOAA/NOS). Fred Holland will serve as the first laboratory director of the HML. [Top of Page](#)



GML RECEIVES NSF GRANT

The college received a \$101,600 grant from the National Science Foundation to establish a "Core Facility in Molecular Biology" at the Grice Marine Laboratory. The College will match this grant with \$43,544 from its own resources. The principal investigator of the proposal, Dr. Craig Plante, will purchase equipment that will benefit faculty and student research and undergraduate and graduate teaching. This equipment will include an

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Jeremy Goldbogen, Univ. of Texas, Austin, "Isolation and Identification of Marine Microorganisms associated with the H.L. Hunley" (Advisor: Pam Morris, MUSC)

Meagan Leatherbury, Bard College, "Toxic Effects of the Herbicide Atrazine on Three Algal Species" (Advisor: Marie DeLorenzo, NOS)

Ryan Miller, Univ. of Dayton, "The Occurrence of Lipid Peroxidation through Induced Reperfusion in the Eastern oyster, *Crassostrea virginica*" (Advisors: Lou Burnett, CofC and Amy Ringwood, DNR)



Davis Reames, Andrew Opatkiewicz, Jeremy Goldbogen, Ryan Miller, Eileen Roy, Justin Williams, Meagan Leatherbury

Andrew Opatkiewicz, Univ. of New Hampshire, "The Effects of Two Neurotoxic Pesticides, Fipronil and Endosulfan, on the Survival and Development of the Grass Shrimp, *Palaemonetes pugio*" (Advisor: Mike Fulton, NOS)

Davis Reames, The Citadel, "The Purification and Structural Elucidation of the Bacteriolytic Agent in the Marine Deposit Feeder *Arenicola marina*" (Advisor: Craig Plante, CofC)

Eileen Roy, Georgia State Univ., "Ferredoxin Index as an Indicator of Iron Stress in the diatom *Phaeodactylum tricoratum*" (Advisor: Jack DiTullio, CofC)

Justin Williams, Univ. of Kansas, "Quantifying Bacterial Accumulation of *Vibrio parahaemolyticus* in Gill Tissue of the Pacific White Shrimp, *Litopenaeus vannamei*" (Advisors: Karen Burnett & Lou Burnett, CofC)

See the [GML Web Site](#) for details about the program for the summer of 2002.

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HURRICANE READINESS

As we approach the height of the hurricane season we will be especially vigilant of tropical storms. Take a few minutes to review some of the procedures that we will use in the event that a storm approaches. We count on the help of all the faculty and the students to help us secure the lab. Of course, there are different levels of precaution that we take depending upon the threat of the storm. The Lab Director must make the decision of how far to go in securing the lab based on consultations with the Grice faculty and the other lab directors at Fort Johnson. To view hurricane

automated DNA sequencer, an image analysis system, a gel documentation system, thermal cyclers and a PCR workstation. Immediate uses of this equipment will include study of microbial diversity in marine sediments, molecular mechanisms of immune responses in fish and shrimp, patterns of paternity in sea turtles, antibiotic-resistant pathogenic bacteria in aquaculture, and phylogenetic studies of marine invertebrates and fish. [Top of Page](#)

RECENT GPMB DEGREES

Summer 2001

Julian Burgos, Life History of the Red Grouper (*Epinephelus morio*) off the North Carolina and South Carolina Coast (Advisor: George Sedberry)

Chris Milardo, The Effects of Environmental Variables on the Metabolism of the Protozoan Parasite, *Perkinsus marinus* (Advisor: Lou Burnett)

Spring 2001

Lara Bero, Investigation of Atlantic Spotted Dolphin (*Stenella frontalis*) Stock Structure in the Gulf of Mexico and Northwest Atlantic Ocean (Advisor: Patricia Rosel)

Ann Chen, Ecological Aspects of Cetaceans in Ilan Waters of Taiwan -- Fauna, Abundance, Distribution, Habitat Partitioning and Acoustics (Advisor: Arch McCallum)

Holly Downing, Effects of Atrazine, Chlorothalonil, and Endosulfan on South Florida Microbial Assemblages (Advisor: John Kucklick)

Fall 2000

Suzi Finkenbine, Evidence for the existence of B-adrenergic receptors on lymphoid cells of the channel catfish, *Ictalurus punctatus* (Advisor: Karen Burnett)

Kathleen Kolhberg, Purification and Partial cDNA Sequencing of the Heavy Chain of Immunoglobulin G (IgG) from the Atlantic Bottlenose Dolphin, *Tursiops truncatus* (Advisor: Karen Burnett)

Erin Levesque, Distribution and Ecology of the Diamondback Terrapin (*Malaclemys terrapin*) in South Carolina Salt Marshes (Advisor: John Fauth)

Josh Loefer, Life History of the Atlantic Sharpnose Shark, *Rhizoprionodon terraenovae* (Richardson), in the South Atlantic Bight (Advisor: George Sedberry)

Kathy Moore, Use of Microsatellite Markers to Determine Paternity in Loggerhead Turtle (*Carema caretia*) Nests on Melbourne Beach, Florida (Advisor: Marty Ball)

Robyn Wingrove, Stock structure of dolphin, *Coryphaena hippurus*, in the western central Atlantic, eastern Caribbean Sea, and Gulf of Mexico using RFLP analysis of the ND-1 region of the mtDNA (Advisor: Robert Chapman)

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GML MISSION STATEMENT

The Grice Marine Laboratory is a core facility in support of the undergraduate and the graduate teaching programs in the marine sciences at the College of Charleston, and in support of research in marine sciences conducted by faculty members and students. The mission of the laboratory is to provide an environment that:

procedures, click [here](#).

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RECENT SCHOLARLY

CONTRIBUTIONS (see [GML Web Site](#) for a complete list) Please contact Dr. William D. Anderson, Jr. (andersonwd@cofc.edu) for a GML contribution number for manuscripts that have been accepted for publication. Some recent contributions follow:

- Keppler, C. J. and A. H. Ringwood. 2001. Expression of P-glycoprotein in southeastern oysters, *Crassostrea virginica*. Marine Environmental Research, Vol. 52, pp. 81-96.
- Boleza, K. A., L. E. Burnett, and K. G. Burnett. In press. Hypercapnic hypoxia compromises bactericidal activity of fish anterior kidney cells against opportunistic environmental pathogens. Fish & Shellfish Immunology.
- Anderson, W. D., Jr., and L. D. Stephens. In press. John Edwards Holbrook (1794-1871) and his *Southern ichthyology* (1847-1848). Archives of Natural History.
- Keppler, C. and A. H. Ringwood. In press. Expression of P-glycoprotein in the gills of oysters, *Crassostrea virginica*: Seasonal and pollutant related effects. Aquatic Toxicology.
- Anderson, W. D., Jr. In press. Review of NATIONAL AUDUBON SOCIETY FIELD GUIDE TO TROPICAL MARINE FISHES OF THE CARIBBEAN, THE GULF OF MEXICO, FLORIDA, THE BAHAMAS, AND BERMUDA, by C. Lavett Smith. Copeia.
- Burnett, K. G. In press. Review of RECENT ADVANCES IN MARINE BIOTECHNOLOGY. VOLUME 5: IMMUNOBIOLOGY AND PATHOLOGY, by Milton Fingerman and Rachakonda Nagabhushanam (editors). Copeia.
- Anderson, W. D., Jr. and C. C. Baldwin. In press. *Plectranthias lamillai* Rojas and Pequeño, 1998: A junior synonym of *P. exsul* Heemstra and Anderson, 1983. Copeia.
- DiTullio, G. R., P. N. Sedwick, D. R. Jones, P. Boyd, A. C. Crossley, and D. A. Hutchins. In press. Effects of iron, silicate and light on dimethylsulfoniopropionate production in the Australian Subantarctic zone. Journal of Geophysical Research.
- Pennington, P. L. and G. I. Scott. In press. Toxicity of atrazine to the estuarine phytoplankter *Pavlova sp.* (Prymnesiophyceae): Increased sensitivity after long-term, low-level population exposure. Environmental Toxicology and Chemistry, Vol. 20, No. 10.

Promotes the acquisition and the dissemination of knowledge about marine and coastal organisms, process, and environments, and marine and coastal environmental concerns and issues.

- Supports the Bachelor of Science and Master of Science degrees in Marine Biology.
- Encourages collaborative interdisciplinary marine research among academic departments as well as with other institutions and marine research facilities, particularly those in the Fort Johnson community.
- Nurtures undergraduate, graduate, and post-graduate learning through formal and informal courses, lecture series, symposia, independent and collaborative research, and post-doctoral appointments and internships.
- Fosters the intellectual development of marine scholars by providing diverse programs that strive for excellence in research and training.
- Fulfills an important role in marine science education and research in the Lowcountry.
- Supports existing and new marine-oriented programs, including interdisciplinary programs, as appropriate to the Laboratory.
- Maintains a collection of marine biological specimens, curated with disciplinary-standard techniques, for use by faculty and students and other professional in the field in research and teaching.

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ANNOUNCEMENTS

- A new handbook for both the GPMB and the GML will be distributed at the beginning of the fall semester. Nearly all features of the handbook are available on-line through the [GML](#) and the [GPMB](#) web sites.
- GML Laboratory Manager Terry White is training this fall for Medic First Aid, Emergency Oxygen Provider (DAN), and Assistant Diving Instructor.

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NEW MARINE BIOLOGY GRADUATE STUDENTS

The following students are new to the program as of the fall 2001 semester. Welcome!

- Patricia Blair – West Virginia University, Morgantown, WV
- Majbritt Bolton-Warberg – University of Dublin, Dublin, Ireland
- Mercer Brugler – University of Miami, Coral Gables, FL
- Jamie Colman – Goucher College, Towson, MD
- David Couillard – Saginaw Valley State University, University Center, MI
- Marcus Drymon – Coastal Carolina University, Conway, SC
- Jennifer Emblidge – State University of New York, Geneseo, NY
- Amy Filipowicz – Fairfield University, Fairfield, CT
- Adam Herbert – Denison University, Granville, OH
- Paul Korchari – Fairfield University, Fairfield, CT
- Aimee Neeley – College of Charleston, Charleston, SC

Karnaky, K. J., Jr., L. R. Forte, J. Bridges, E. Brown, S. Decker, A. Pelletier, S. Forrest, and J. N. Forrest. In press. Evidence for a guanylin/guanylate cyclase signaling system in the intestine, but not in rectal glands of the dogfish shark (*Squalus acanthias*). Bulletin of the Mt. Desert Island Biological Laboratory.

- Karnaky, K. J., Jr., M. Sedmeroval, D. Petzel, J. Bridges, S. W. Boatwright, and D. S. Miller. In press. MRP2-like transport in the Malpighian tubule of the cricket, *Acheta domesticus*. Bulletin of the Mt. Desert Island Biological Laboratory.

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- Tye Pettay – Clemson University, Clemson, SC
- Noel Turner – San Francisco State University, San Francisco, CA
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