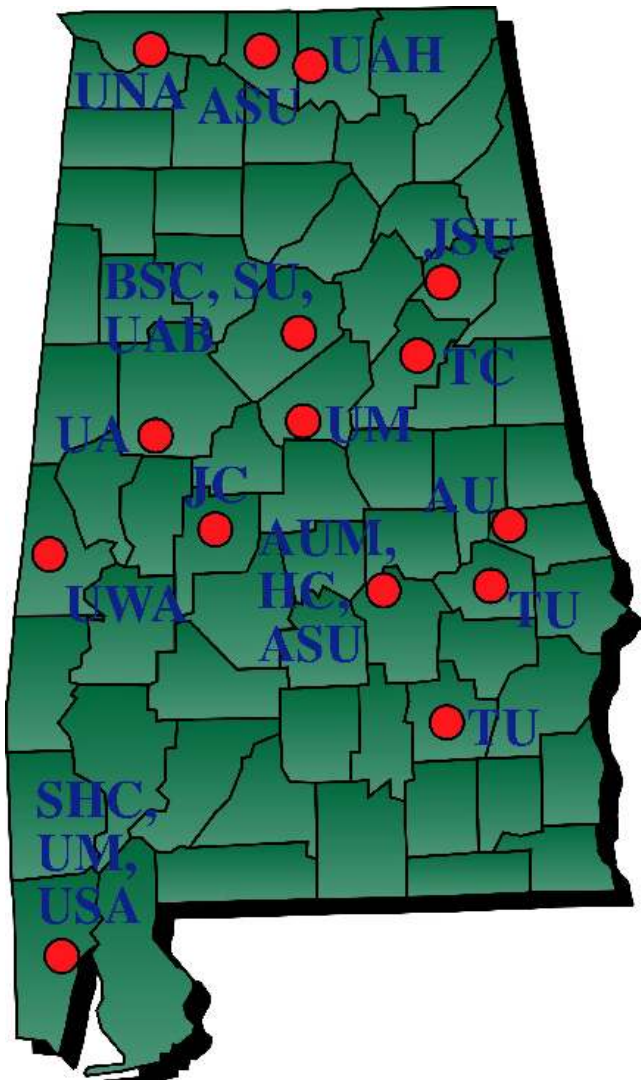


**Dauphin Island Sea Lab  
2008 Annual Report**

# The Twenty-one Member Schools of the Dauphin Island Sea Lab/ Marine Environmental Sciences Consortium



- Alabama State University, Montgomery, AL\*
- Athens State University, Athens, AL
- Auburn University, Auburn, AL\*
- Auburn University at Montgomery, Montgomery, AL
- Birmingham Southern College, Birmingham, AL
- Huntingdon College, Montgomery, AL
- Jacksonville State University, Jacksonville, AL\*
- Judson College, Marion, AL
- Samford University, Birmingham, AL\*
- Spring Hill College, Mobile, AL
- Talladega College, Talladega, AL
- Troy University, Troy, AL
- Tuskegee University, Tuskegee, AL\*
- University of Alabama, Tuscaloosa, AL\*
- University of Alabama at Birmingham, Birmingham, AL\*
- University of Alabama in Huntsville, Huntsville, AL\*
- University of Mobile, Mobile, AL
- University of Montevallo, Montevallo, AL
- University of North Alabama, Florence, AL
- University of South Alabama, Mobile, AL\*
- University of West Alabama, Livingston, AL

\* Schools with Graduate Degree Programs

# Statement of Purpose



The Dauphin Island Sea Lab (DISL) is Alabama’s marine research and educational institution. Founded in 1971 by the Alabama legislature to maximize the marine sciences capabilities of several Alabama institutions and minimize duplication, DISL serves twenty-one Alabama colleges and universities, both public and private. DISL and its faculty work toward the combined purposes of conducting pure and applied research, and sponsoring structured educational programs for individuals and organizations interested in and dependent upon the marine environment.

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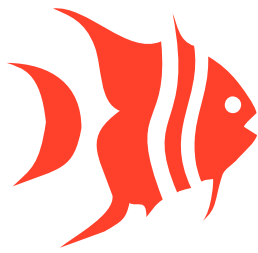
Dauphin Island Sea Lab/ MESC provides equal educational opportunity to, and is open and accessible to, all qualified students, without regard to race, color, creed, national origin, sex or qualified handicap/disability with respect to all of its programs and activities.

Disabled students will be provided “reasonable accommodations” when they have identified themselves and validated their special need(s). Complete confidentiality is maintained unless authorization for release or information has been given in regards to disability.

Dauphin Island Sea Lab  
101 Bienville Boulevard  
Dauphin Island, AL 36528  
Ph: (251) 861-2141  
Fax: (251) 861-4646  
www.disl.org

For questions about this Annual Report, please e-mail Lisa Young, Public Relations Consultant, at [lyoung@disl.org](mailto:lyoung@disl.org)

Cover: Aerial photo of Dauphin Island Sea Lab (photo by John Dindo);  
Bottom row, left to right, the three 2008 Directors of the DI Sea Lab - Dr. John J. Dindo; Dr. L. Scott Quackenbush; Dr. George F. Crozier



## 2008 Overview of the DI Sea Lab

Located on a barrier island, the Dauphin Island Sea Lab (DISL) is accustomed to the blustering winds of hurricanes and tropical storms. We are accustomed to the anxiety before landfall; the tense concentration of preparation; the heightened awareness of every wind shift; and finally, the cleansing breath after the storm, as we roll up our sleeves to make repairs and get back to work.

Hurricane season is June to November, but in 2008, it seemed like the full calendar year. Not in the literal sense, although we experienced days of tension with an onslaught of tropical occurrences in the fall, but in the metaphorical sense as the Sea Lab saw three directors in the span of twelve months.



*Dr. John J. Dindo*

Upon the December 2007 retirement of Executive Director Dr. George F. Crozier, Dr. John Dindo, long-time Chair of Discovery Hall Programs and a 30-year veteran of the DISL, assumed the role of Interim Director. Under his steady hand, the Sea Lab didn't miss a beat in transition, and continued its mission of marine science education and research, serving the citizens of Alabama with dedication and innovation.

Dr. Dindo began carefully collaborating on the plans for the DISL's newest structure and program, the Richard C. Shelby Center for Ecosystem-Based Management. Between running up to Montgomery for DISL lobbying, overseeing the beginning phases of the Shelby Center, and making the myriad daily decisions that the Director faces at the Sea Lab, he was a veritable whirlwind of activity, and the staff is grateful for his service and commitment.

In July 2008, Dr. L. Scott Quackenbush, previously Associate Dean for Marine Science Programs and Marine Lab Director at Humboldt State University in Arcata, California, arrived to become the new Executive Director of the DISL. Dr. Quackenbush was born in Wheaton, Illinois. He attended Boston University and graduated from the University of Minnesota with a B.A. in Biological Sciences. He moved to Pensacola where he earned a Masters in Biological Science from the University of West Florida, then to Tallahassee where he completed his studies with a Ph.D. at Florida State University.

A marine biologist by training and a lover of the sea by inclination, Scott's academic career took him to the Atlantic, Pacific and Gulf Coasts as he took positions in New Orleans, Louisiana; College Station, Texas; Miami, Florida; Willington, North Carolina; Arcata, California; and eventually Dauphin Island, Alabama.

A genial man with a sharp eye, Dr. Quackenbush arrived with fresh energy and a desire to maintain the excellent programs of the DISL, while propelling it to even greater heights on the national scene. His open door policy and desire to listen to staff and faculty eased the transition period, and his gentle smile and sharp wit made his company a pleasure. He began formulating plans to update the DISL, both in its physical plant and its organizational structure.

He soon became a familiar sight around the campus, as he would stroll the grounds, familiarizing himself with the labs, classrooms, cafeteria and Estuarium. No detail was too insignificant for him to notice and hope to improve. From academic programs to safety in parking, he had plans to make the



*Dr. L. Scott Quackenbush*

infrastructure as efficient as possible in order to serve the greater mission of marine science education and research.

His leadership was tested soon enough as an active hurricane season threatened the Gulf Coast at an exhausting rate with Fay, Gustav, Hanna and Ike. His passion for preparation and communication brought order and action during these tense times, and the Sea Lab weathered the storms admirably.

His death on October 12, 2008, only three months after his arrival at the Sea Lab, left the DISL community in shock with its suddenness, in grief for his beautiful wife and children, and in sadness that his ambitious plans for the Sea Lab were left undone.

Dr. L. Scott Quackenbush was survived by his wife of over 22 years, Dr. Teri Butler, and their three children, Benjamin, Seth, and Hannah Quackenbush, as well as brother Bruce Quackenbush and wife Toni and brother Mark Quackenbush, of Baltimore, Maryland, and seven nieces and nephews.

Who, then, could possibly fill the institutional void? The DISL Executive Committee, led by President V. Gordon Moulton of the University of South Alabama, immediately turned to an old friend and an established leader, former Executive Director Dr. George F. Crozier. Committed to the well-being of

the marine lab he loved so much, Dr. Crozier agreed to return as Executive Director, leaving behind a retirement he was just starting to enjoy. In early November 2008, Dr. Crozier trod the well-worn path back to the Director's office.

The landscape of the DISL was no doubt changed by the turbulent winds of leadership; permanent organizational changes made their needs apparent, and Dr. Crozier would take this return as an opportunity to implement plans he thought the institution needed. But one aspect remained constant – the mission to provide the best marine educational and research programs possible for the state of Alabama. This never faltered, and with the upheaval in leadership, burned a brighter beacon for the staff to follow. For after the hurricane winds of change blew through the Dauphin Island Sea Lab, the staff did what they usually do – surveyed their surroundings, rolled up their sleeves, and got to work.



*Dr. George F. Crozier*



# Administration and Facilities

DISL is located on 36 acres on the eastern end of Dauphin Island, a barrier island approximately three miles from the mainland and 40 miles south of Mobile, Alabama. The Sea Lab spans the island and thus has direct access to the Gulf of Mexico, Mississippi Sound and Mobile Bay. A causeway and bridge connects the island to the mainland.

Five buildings on the South Campus offer over 15,000 square feet of instructional space. Wiese Marine Science Hall on the North Campus houses a state of the art lecture hall and distance-learning center, as well as the offices and laboratories of the research faculty and graduate students. The Sea Lab can accommodate 160 persons in residence. Two dormitories, a two-story efficiency apartment building with twelve-units, eight three-bedroom houses, and a cafeteria provide quarters and meals for visiting faculty and students.

The DISL library is highly specialized in the marine sciences, particularly those areas relating to the

ecology and geology of the Gulf Coast region. Its holdings include more than 7,400 bound volumes and approximately 500 periodical titles, with current subscriptions to many of those periodicals. The library also has numerous CD-ROM databases, as well as access to a variety of on-line library catalogs.

Wet Lab facilities house modular sea-water systems, kreisels, and other instruments for experimental work on living marine organisms. Research laboratories are equipped with state-of-the-art instrumentation for biogeochemical research. Field collection equipment for marine ecological and oceanographic research is available.

DISL maintains two large research vessels, including the 65-ft. R/V *A.E. Verrill* and the 40-ft. *E.O. Wilson*, in addition to several small boats and skiffs.

## Administrative Personnel (Reporting Period)

Dr. John J. Dindo - Interim Director (Jan.-June 2008) and Chair, Discovery Hall Programs

Dr. L. Scott Quackenbush - Executive Director (July-October 2008)

Dr. George F. Crozier (October 2008 to present)

Dr. Kenneth L. Heck, Jr. - Chair, University Programs (October 2007-December 2007)

Dr. John F. Valentine - Chair, University Programs (January 2008 - Present)

Georgia Mallon - Business Manager

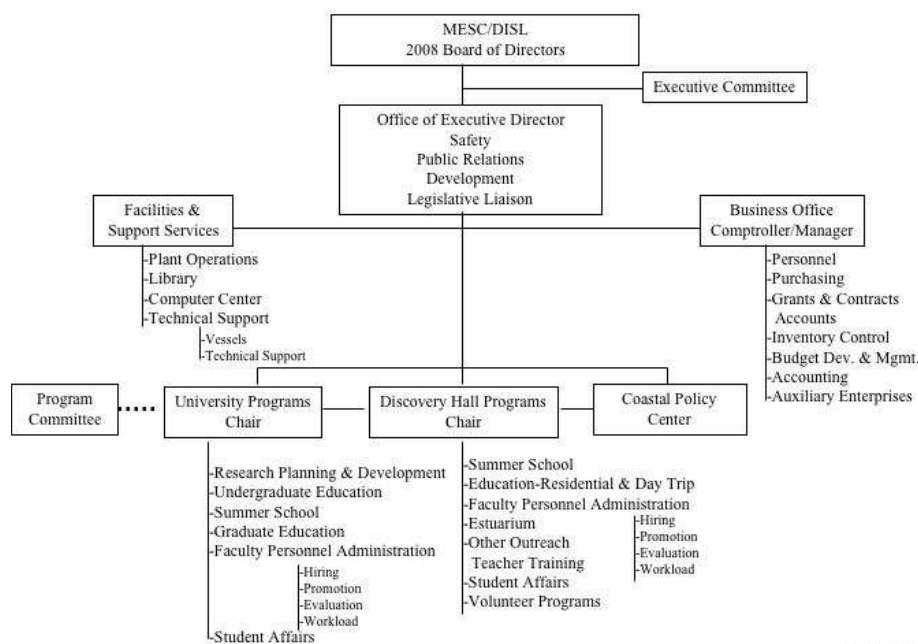
Aleada Nicholson - Administrative Assistant to the Executive Director (partial year 2008)

Lori Angelo - Administrative Assistant to the Executive Director (partial year 2008)

## Business/Finance

The Business Office of the DISL operates under the principles of Fund Accounting

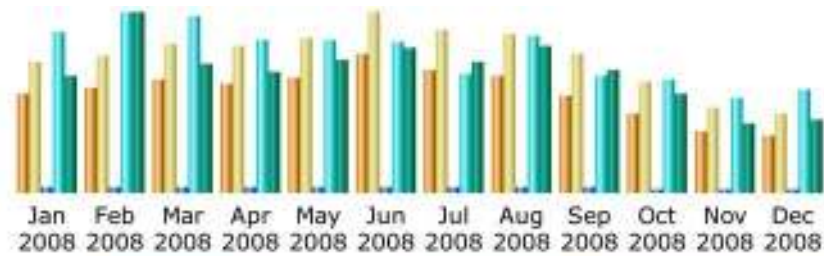
**Table of Organization**



January 2008

set forth by the National Association of College and University Business Officers. The State Examiners of Public Accountants audit annually the procedures, accounting records and policies of the DISL.

## Statistics for www.disl.org



Month	Unique visitors	Number of visits	Pages	Hits	Bandwidth
Jan 2008	5204	6886	11881	462226	2.11 GB
Feb 2008	5494	7279	12734	516827	3.24 GB
Mar 2008	5987	7861	13551	505983	2.32 GB
Apr 2008	5734	7798	13576	441606	2.19 GB
May 2008	6080	8154	13608	441680	2.39 GB
Jun 2008	7294	9500	15693	435870	2.61 GB
Jul 2008	6477	8633	14228	344542	2.34 GB
Aug 2008	6213	8396	15566	451489	2.65 GB
Sep 2008	5162	7350	15066	338568	2.22 GB
Oct 2008	4206	5829	10490	323421	1.79 GB
Nov 2008	3245	4462	7663	274630	1.24 GB
Dec 2008	3000	4174	9085	293037	1.30 GB
<b>Total</b>	<b>64096</b>	<b>86322</b>	<b>153141</b>	<b>4829879</b>	<b>26.42 GB</b>

### Business/Finance Personnel

Georgia Mallon - Business & Auxiliaries Manager  
 Lynn Bryant - Payroll  
 Mary Darby - Accounts Payable  
 David England - Comptroller  
 Ashley Foster - Receptionist - Purchasing Agent  
 Christine Hilburn - Human Resources  
 Sherry Horton - Contract & Grants Manager  
 Dennis Patronas - Librarian & Clerical Assistant

Holley Ladnier  
 Marty Newman  
 Sue Ramsey  
 Diane Summerlin

### Auxiliaries

Auxiliaries of the DISL include the Cafeteria, Estuarium Gift Shop, Laundromat and vending machines.

### Cafeteria Personnel

Classie Berittech - Manager  
 Judy Barber  
 Renee Cain  
 Rose Cortichiato  
 Cindy Grimes  
 Randy Zirlott  
 Faye Bentley (Part-time)  
 Karen Saunders (Part-time)  
 Celenia Spettel (Part-time)

### Estuarium Gift Shop Personnel

Jeana Layne - Manager  
 Jamele Ellington - Assistant Manager  
 Amy Hannah

### Household Maintenance Personnel

Tammy McClantoc - Supervisor  
 Shirley Emerson  
 Cindy Johnson

### Information Technology

The Sea Lab's Information Technology (IT) Department provides user services and support for more than 120 users and 227 computers and servers, in both academic and administrative departments. In 2008, IT upgraded the main web/email server to accommodate the ever growing needs of DISL. This upgrade allowed DISL to keep up with the ever changing technology needs of the lab.

### Information Technology Personnel:

Melissa Mills - Manager of Information Technologies  
 Shane Johnson - Systems Administrator  
 Sam Hardwick - PC / Network Specialist  
 Lei Hu - Data Manager  
 Rachel Nowlin - Data Specialist

### Library

The DISL library is highly specialized in the marine sciences, particularly those areas relating to the ecology and geology of the Gulf Coast region. Its holdings include more than 7400 bound volumes and approximately 500 periodical titles, with

current subscriptions to many of those periodicals. Online full text access to over 80 subscribed titles and hundreds of open access titles is available. Besides free Alabama Virtual Library, subscriptions to online databases Aquatic Sciences and Fisheries Abstracts, Oceanic Abstracts and Current Contents on Diskette continue to give students and faculty current bibliographic resources.

### Library Personnel

Dennis Patronas - Librarian

### Public Relations

The Public Relations (PR) Department found its calendar of planned projects heavily garnished with breaking news during 2008. The triumvirate of Directors this year called for a constant flow of press releases, as did the announcements of openings and closings of the Estuarium due to an onslaught of hurricanes and tropical storms. Thanks to 21st century technology, the stream of information flowed with nary a delay.

Special events in 2008 included a highly successful Discovery Day, capped by the official naming of the George F. Crozier Estuarium, which came as a complete surprise to the Sea Lab's long-time Executive Director. Despite his insistent wishes that the naming of the facility should be reserved for a generous donor, all agreed that there is no one more deserving of this unique honor, large check notwithstanding.

Cocktails with the Critters, the DISL Foundation's highlight event, featured world-renowned sports fishing photographer Bill Boyce. He was a delightful honored guest, and entertained a crowd of admiring supporters with his tales of travel and adventure.

The Public Relations Department continued its marketing support of the George F. Crozier Estuarium by speaking at several tourism related events, including the 2008 Alabama Governor's Conference on Tourism; the 2008 Alabama Welcome Center Retreat; and

National Tourism Week events at the Grand Bay Welcome Center and Baldwin County Welcome Center. Despite the economic downturn, the Estuarium was one of the few area attractions in 2008 that gained attendance from the previous year.

One of the most important roles of the Public Relations Department is publicizing the research efforts of the DISL's scientists, and 2008's press hits ranged from the local Mobile Press Register to the Agence France Presse. On the local front, the PR Department continued to promote Dr. Ruth Carmichael's Mobile Manatees Sighting Network. Dr. Hugh MacIntyre's work on nitrates in Little Lagoon received spotlight attention, as did Dr. Monty Graham's research on jelly sh, nicknamed "Cockroaches of the Sea," by the local press, a title that caught the imagination of the regional media. Dr. Just Cebrian's work on Living Shorelines made the Associated Press wire, as did Dr. Rich Aronson's work on crab invasions in Antarctica, both stories drawing the attention of national and international media outlets. The PR Department must emphasize, however, that as proud as we are of this excellent media attention, it could never happen without the ground-breaking research conducted by the DISL's stable of top-notch scientists.

The PR Department was grateful once again to the ExxonMobil Community Jobs Fellowship, which provided funds for a PR summer intern. Valerie Kleinschmidt of Spring Hill College was the 2008 recipient, and performed tremendous work for the DISL, ensuring steady press coverage in dozens of Alabama hometown papers for the many participants of the Sea Lab's summer programs.

### Public Relations Personnel

Lisa Young - Public Relations Director

### Plant Operations

From building gleaming bookcases to wrestling three-ton condensers, Plant Ops are the masters of all trades, and as far as the Sea Lab is concerned, the true Masters of the Universe. In 2008, Supervisor Troy McBride and this team of skilled workmen conducted regular maintenance,



*The Public Relations Department promoted research efforts such as Dr. Ruth Carmichael's Mobile Manatee Sighting Network in 2008. To report a sighting of a manatee, call 1-866-493-5803.*



handled new construction and secured the entire facility from the threat of a parade of storms from the Gulf of Mexico.

In Lower Alabama where air-conditioning is essential, Plant Ops replaced and installed enormous new units on the South Campus in Discovery Hall and Galathea, and on the North Campus in Marine Science Hall.

The South Campus' classrooms were given new life by a team of volunteers from AmeriCorps, who painted the exterior of the buildings under the careful supervision of the Plant Ops Team.

The housing units of Albatross, Beagle, Challenger and the faculty housing received face-lifts of new paint, new bathrooms, new tile and more.

One small touch, suggested by Director Quackenbush and executed by the Plant Ops Team, was to build shoe rack trees outside the dorms, so visiting groups could dry their wet and muddied shoes instead of leaving them in hazardous piles on the walkways. This was a small job, but one greatly lauded by the DISL staff and visiting students for its convenience and cleverness.

The Plant Ops team also contributed to the beauty and features of the Estuarium by constructing a new small-scale boat inside the Billy Goat Hole room, and building new display boards for its walls.

The electricians of Plant Ops assisted Information Technology in pulling network cable for the housing units in Alabatross so the students there could get faster Internet access. Two new streetlights were added across from Wiese Hall's parking lot, adding much needed light for nightowl grad students.

A listing of every accomplishment of the Plant Ops team would fill its own publication; their dedication and skill are matched only by their patience and good humor when asked to accomplish the seemingly impossible. We are grateful for their constant presence and excellent work; they support the educational and research mission of the Sea Lab in innumerable ways.

#### **Plant Operations Personnel**

Troy McBride - Supervisor  
Tommie Blocker  
Jim Daves (retired April 2008)  
Karl Feemster  
Ricky Gibbs  
Chris Gilliam  
Wilfred Gazzier

Joey Johnson  
Kenneth O'Neal  
Tom Pritchett

#### **Technical Support and Vessels**

Technical Support strives to provide faculty and students with information, technology, resources and services related to coastal research. Although technicians are subject to almost any conceivable demand, services can generally be grouped into one of four areas: field instrumentation, laboratory instrumentation, wet lab, and scientific diving.

A new 23' skiff, the *Mullet*, was placed in service in May. Construction began in August on the 65' twin engine fiberglass replacement for the venerable *A.E. Verrill*. Delivery is expected in 2009.

Two Motorboat Operators Certification Courses offered by Vessel Ops taught 21 students and staff the fundamentals of small boat operation. The increased number of users and vessels led to over 800 trips in 2008 by the combined fleet of 9 vessels.

2007's DAN summer intern, Roxanne Roberson, returned as a summer intern for Ryan Poythress, who left to pursue a career in nursing. At the end of the summer, Narineh Nazarian was hired as wet lab technician until the return in 2009 of Yantzee Hintz from active duty in the National Guard.

Vessels and the Analytical Laboratory help support a Northern Gulf Initiative grant to Mississippi State University to study the sediment plume in Mobile Bay, collecting and analyzing water samples taken in conjunction with satellite overpasses.

#### **Technical Support Personnel**

Michael Dardeau - Technical Support Supervisor  
Al Gunter - Field Technician  
Narineh Nazarian - Wet Lab Technician  
Laura Linn - Analytical Technician  
Kyle Weis - Field Technician

#### **Vessel Operations Personnel**

Tom Guoba - Vessel Ops Supervisor  
Rodney Collier - Captain  
Clark Lollar - Captain  
Russell Wilson - Captain

#### **2008 Vessel Days at Sea (including 1/2 day ops)**

<i>A. E. Verrill</i>	119
<i>E. O. Wilson</i>	136
Small Boats	591



# Discovery Hall Programs

Nationally recognized for its excellence in hands-on learning in a unique environment with highly trained educators, Discovery Hall Programs (DHP) continued its innovative programming in 2008.

Discovery Hall's academic year programs saw a decline in attendance starting in 2007 and continuing in 2008. The total number of students participating in the academic year programs for 2006 was 11,779 but 2007 had a 36% reduction and 2008 showed a 44% reduction. The downturn in the economy was the driving reason for this decline; fuel costs rose from two dollars a gallon to over four dollars a gallon during this period. Budgets were cut in almost all Alabama schools systems, limiting field trip opportunities, and many teachers informed us that the cost for transportation to the DISL was greater than the cost of room, board and tuition once they arrived. Despite this trend, one bright spot was the increase in teacher participation in our summer programs, which increased by 38% from 2007 to 2008.

By continuing its strong partnership with the National Oceanographic and Atmospheric Agency (NOAA), DHP was able to reach the farthest corners of the Southeast region. NOAA's Gulf of Mexico Alliance (GOMA) continued its third year of funding; its education and outreach office is hosted by the DHP. Ms. Lee Yokel is the GOMA environmental education coordinator at DISL.

Additionally, NOAA's Northern Gulf Institute (NGI) continued its fourth year of funding at DHP, and took the lead, along with NGI in Stennis, MS, on Gulf-wide education and outreach for the five NGI

Dauphin Island Sea Lab's Discovery Hall Program Totals

Year	K-5	Middle School	High School	College	Teachers	Other	Total
1990	7,382	1,364	905	473	185	397	10,706
1991	2,296	745	329	127	254	620	4,371
1992	6,103	2,005	1,187	671	254	351	10,571
1993	7,128	1,784	2,123	765	238	529	12,567
1994	7,634	2,083	1,533	603	356	478	12,687
1995	5,981	1,763	1,137	634	213	336	10,064
1996	6,915	2,318	1,411	456	300	126	11,526
1997	6,312	1,630	1,170	648	269	284	10,313
1998	6,233	2,079	1,484	364	230	352	10,742
1999	4,232	2,055	1,397	479	225	301	8,689
2000	6,567	2,141	1,746	476	199	368	11,497
2001	6,239	1,918	2,485	540	177	277	11,636
2002	4,196	2,924	1,865	460	175	430	10,050
2003	4,605	2,845	2,215	278	230	293	10,466
2004	4,737	1,385	1,435	262	150	188	8,157
2005	3,897	1,102	1,592	316	167	98	7,172
2006	6,576	2,326	2,877	566	117	374	12,836
2007	3,064	1,440	1,591	432	86	111	6,724
2008	3,268	2,621	1,551	46	138	173	7,797
<b>Total</b>	<b>103,365</b>	<b>36,528</b>	<b>30,033</b>	<b>8,596</b>	<b>3,963</b>	<b>6,086</b>	<b>188,571</b>

university affiliates: Mississippi State University; University of Southern Mississippi; Florida State University; Louisiana State University; and the Dauphin Island Sea Lab. Dr. Tina Miller-Way and Ms. Mendel Graeber conduct the excellent educational programs of the NGI at DISL.

Mississippi-Alabama Sea Grant Consortium (MASGC) continued its long history of promoting and funding marine science education in both Mississippi and Alabama through a partnership grant with the Dauphin Island Sea Lab, University of Southern Mississippi Marine Education Center and the Mobile County Environmental Studies Center. In addition to supporting marine science education, Mississippi Alabama Sea Grant has partially funded a new Underwater Exploration exhibit featuring a workable underwater submersible and a new oyster reef tank exhibit both located in the public aquarium, the Estuarium.

BayMobile, the DISL's traveling marine science classroom, continued in popularity, and demand exceeded opportunity as usual in 2008. BayMobile gives inland students the opportunity to learn about the vast watershed system that covers most of the

state and how their actions can impact our coasts. Below is a list of schools BayMobile visited in 2008:

- ❑ Susan Moore High School, Blount County
- ❑ Sparta Academy, Conecuh County
- ❑ Cullman High School, Cullman County
- ❑ West Point High School, Cullman County
- ❑ Cullman Middle School, Cullman County
- ❑ Knox Elementary School, Dallas County
- ❑ Cedar Park Elementary, Dallas County
- ❑ Plainview School, DeKalb County
- ❑ Ft Payne High School, DeKalb County
- ❑ Valley Head High School, DeKalb County
- ❑ Montevallo Middle School, Shelby County
- ❑ Oak Mountain High School, Shelby County
- ❑ Montevallo High School, Shelby County
- ❑ Livingston Jr. High School, Sumter County
- ❑ Livingston Elementary, Sumter County
- ❑ York West End Jr. High School, Sumter County
- ❑ G. W. Watts Elementary School, Wilcox County
- ❑ Wilcox Central High School, Wilcox County

Additionally, BayMobile, funded by ExxonMobil, participated in a number of public events, teaching thousands of people about the treasures of the coastal environment. The events included: ExxonMobil Conference, Pensacola Beach, FL;



*The Northern Gulf Institute sponsored a series of Summer Excursions for families during the summer of 2008. Marine Educator Mendel Graeber (upper right) explains the contents of a seine net that swept through Dauphin Island's salt marsh.*

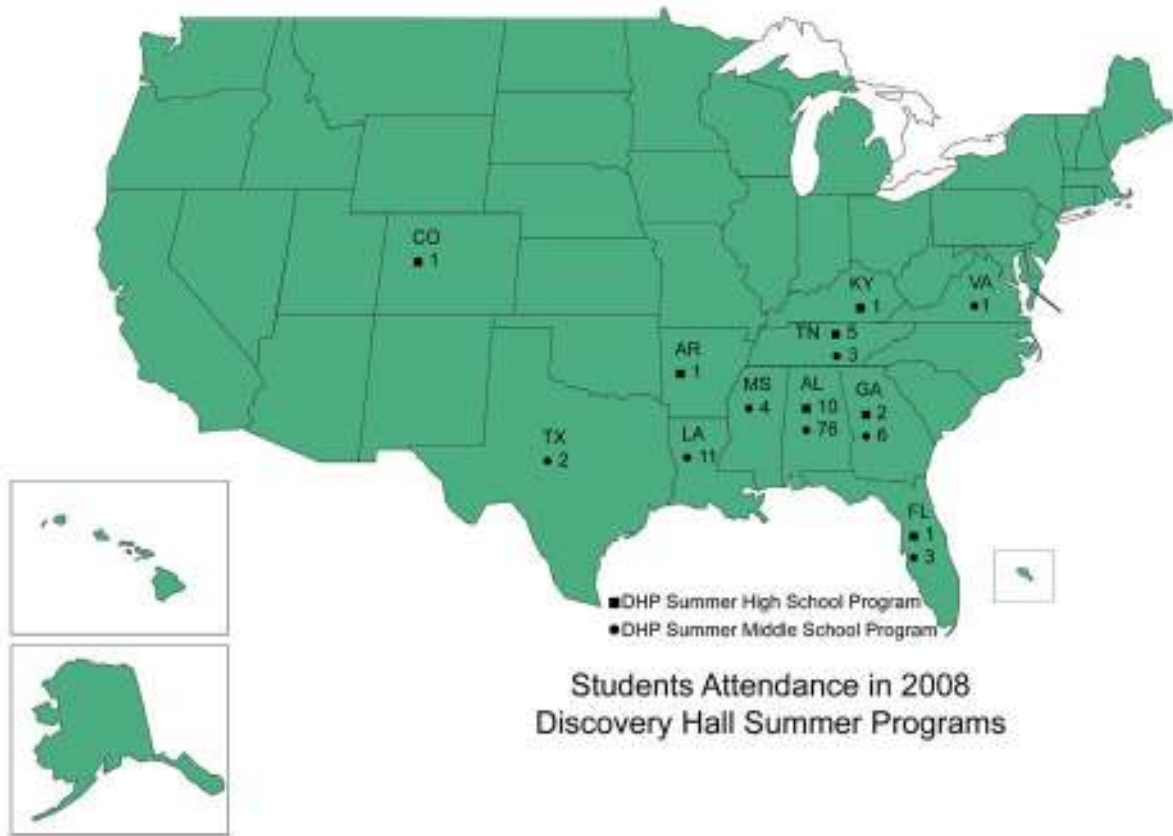


*On the road again - BayMobile had a busy schedule in 2008.*

Boys and Girls Club of South Alabama; BayFest in Bienville Square, Mobile, AL; GEMS Conference; Environmental Studies Center Open House; BirdFest, Faulkner Community College in Fairhope, AL; YMCA Wing Bowl; AMVAC Community Day, Creola Park; Mobile BayKeeper Family Fun Day; Mobile Boat Show; Pensacola Boat Show; Biloxi Boat Show.

The Sea Lab and DHP is grateful to several generous corporations for their support of marine science education at the DISL. Shell Oil Foundation's Minority Internship Program provided funding for Ms. Johnitia Williams and Ms. Valeri Cruz during the summer of 2008. Ms. Williams, a science education student at the University of Mobile and Ms. Cruz, a graduate student in education from the University of South Alabama, worked with the Discovery Hall faculty in all aspects of the summer programs.

Additionally, ExxonMobil Foundation continued its support of three summer internships at the DISL. Ms. Valerie Klenschmidt (Spring Hill College) worked with Ms. Lisa Young in Public Relations; Ms. Lauren Cook (University of Mississippi) worked with the Estuarium staff in graphic design; and Ms. Andrea Kroetz (University of Illinois) worked with Dr. Sean Powers and Dr. John Dindo on the Coastal Shark research project. These internships provided these students invaluable opportunities to experience the coast and to broaden their backgrounds for future work in the environment.



**Discovery Hall Programs Personnel and Faculty**

Dr. John J. Dindo, Ph.D. 1991 (University of Alabama at Birmingham) - Department Chair  
Denise Keaton - Administrative Assistant  
Pamela Pierce - Scheduler  
Sara Orescan Johnson - Scheduler

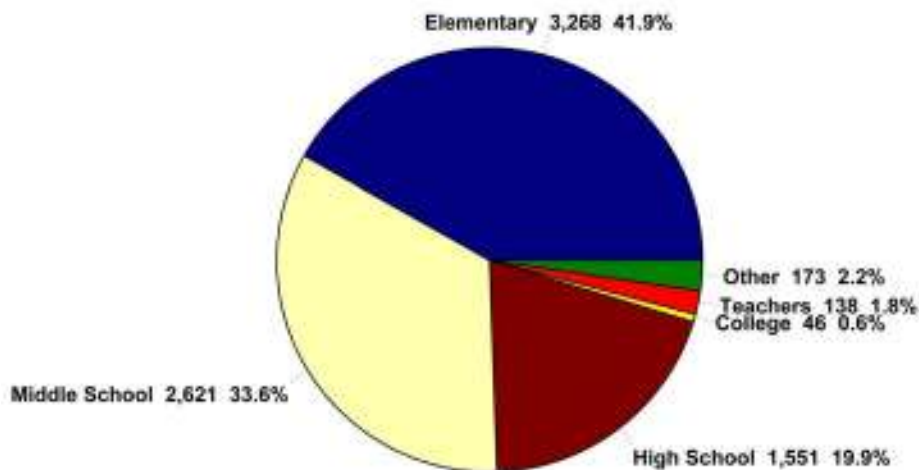
**Faculty**

Jenny Cook, M.S. Marine Science, 1991 (University of South Alabama) - Marine Educator  
Carrie Dixon, M.S., Environmental Studies (College of Charleston, SC) - Marine Educator  
Greg Graeber, B.S. Science, 2000 (Auburn University) - Marine Educator

Mendel Graeber, B.S. Science, 2001 (University of Alabama) - Marine Educator  
Joan Turner, B.S. Elementary Science Education, 1999 (University of Alabama, Huntsville) - Marine Educator  
Hazel Wilson, B.S. Science Education, 1981 (Memphis State University) - Marine Educator  
Stephanie Wright, B.S., Biology, 2004 (University of South Alabama) - Marine Educator

**Discovery Hall Student Participation in 2008**

Including Summer Programs and Teacher Workshops





# The George F. Crozier Estuarium

251.861.7500

Toll Free: 866.403.4409

www.sealabestuarium.org

The George F. Crozier Estuarium continues to be a much-visited local attraction, with an increase in visitation of six percent over the 2007 attendance. Despite the economic downturn, a visit for a family of four to the Estuarium is still less costly than a visit to the movie theater, and, we like to think, provides just as much entertainment with an added bonus of education.

One of the biggest changes in the reporting year was the re-naming of the facility to the George F. Crozier Estuarium, after the long-time Director of the DISL. This honor pales in comparison to the many contributions of Dr. Crozier to the DISL, and indeed to the state of Alabama, but we are pleased to recognize this leader in coastal education in this distinctive and lasting manner.

The new oyster reef tank exhibit provides a better understanding of how these valuable reefs function. In collaboration with Dr. James Grimes from the University of Southern Mississippi and the Mississippi-Alabama Sea Grant Consortium, the Estuarium staff provided a new graphic panel that explains the science behind Vibrio, a bacteria that can be found in oysters and cause human health issues.

Like all museums and aquariums around the nation, the Estuarium could not function at the level that it does today without the dedicated involvement of our docent volunteer force. Currently we have over 60 docents who volunteer their time in the Estuarium or around the campus in other capacities helping to explain the Mobil Bay ecosystem to visitors to greening up our campus. In 2008, we welcomed



(L-r) Bill Crozier; Dr. George Crozier, and Dr. Deanna Crozier in front of the newly-named George F. Crozier Estuarium.

nineteen new docents through our docent class. All our volunteers provide thousands of hours of unpaid time and they are a tremendous resource for us.

If you admire our lushly landscaped butterfly gardens, please thank our volunteer gardeners: Stella Anderson; Kay Breitenfeld; Blanche Emerson; Anne Ferguson; Linda Miller; Rina Schuett; Carol Standish; and Debbie Tallant.

Thanks to our DHP administrative docents Joe Horton, Lu Oswell, Mary Binion-Jones and Lynn Irving. We don't know what we'd do without those smiling faces and nimble fingers!

If you are interested in volunteering at the Estuarium, please contact Ms. Denise Keaton at [dkeaton@disl.org](mailto:dkeaton@disl.org).

## Estuarium Personnel

Robert Dixon, Estuarium Manager  
 Brian Jones, Senior Aquarist  
 Joe Ingraham, Aquarist  
 Adele Fowler, Aquarist (partial year)  
 Kristin Hanan, Aquarist (partial year)  
 Denise Keaton, Estuarium Docent Coordinator

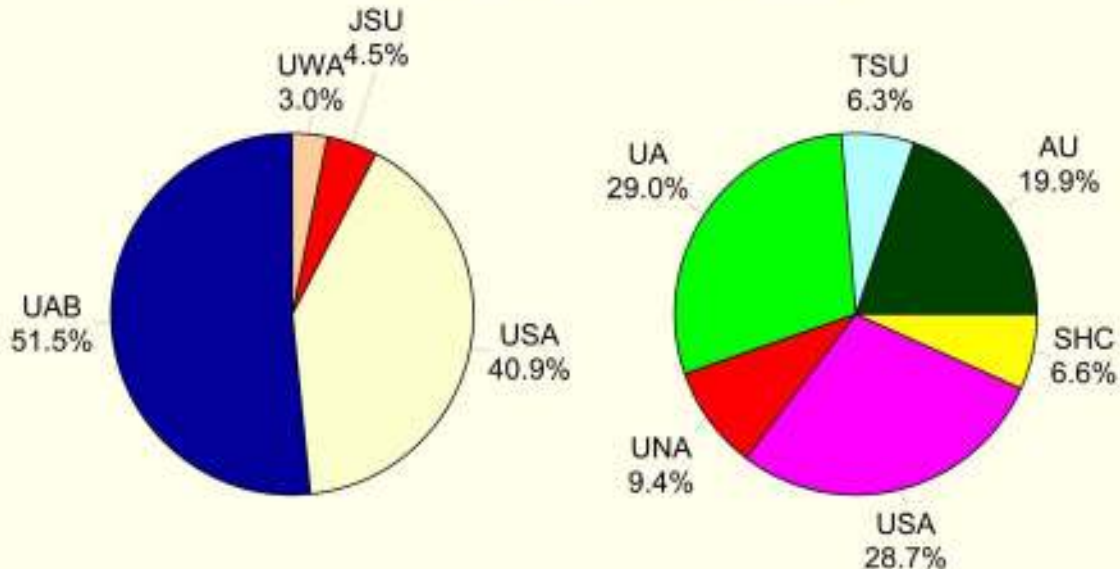
## The Estuarium at the Dauphin Island Sea Lab Visitor Totals

Year	Students	Adults	Seniors	Members Passes Employees, Comps	Total
1998	26,661	16,468	7,774	2,343	53,246
1999	34,557	18,842	10,427	2,455	66,281
2000	38,223	20,283	11,887	2,662	73,055
2001	36,213	21,305	12,112	2,718	72,348
2002	35,327	21,966	12,638	3,056	72,987
2003	38,622	23,200	12,435	3,218	77,475
2004	34,458	21,700	12,742	3,356	71,856
2005	26,501	13,050	6,728	2,533	48,812
2006	31,059	15,745	8,030	2,940	57,774
2007	34,152	18,689	10,586	3,220	66,647
2008	37,027	19,075	10,138	4,116	70,356
<b>Total</b>	<b>372,800</b>	<b>209,923</b>	<b>115,497</b>	<b>32,617</b>	<b>660,481</b>



## University Programs

### Summer - 2008 Graduate and Undergraduate Credit Hour Breakdown by Institution



University Programs (UP) oversees summer undergraduate and year round graduate (M.S. and Ph.D.) education, as well as faculty research.

In faculty news, Dr. John Valentine was elected Chair of University Programs effective January 1, 2008.

Dr. Behzad Mortazavi was appointed as a new faculty member from the University of Alabama and began work May, 2008.

Dr. Alice Ortmann was appointed as new University of South Alabama faculty member and began work July, 2008.

Dr. Rich Aronson accepted the job of Head of Department of Biological Sciences at the Florida Institute of Technology in Melbourne, FL, and left DISL at the end of 2008.

Seventeen (17) of the 21 member institutions sent students to the DISL for the 2008 Summer Program. UP delivered 706 undergraduate hours and 175 graduate hours during the summer and 676

graduate hours during the academic year for a total of 1557 hours.

Twelve graduate students who conducted their research at the DISL received their degrees from their home institutions during the reporting period of October 1, 2007 to September 30, 2008 (Table 1).

The UP Faculty contributed \$3,009,515 in extramural funding. \$482,454 was faculty extramural funding through the University of South Alabama.

During the reporting period, the faculty produced 48 refereed publications; 5 non-refereed publications; 93 scientific presentations and 24 other public presentations. A complete listing of research faculty activity can be found on pages 23-31.

#### University Programs Personnel

**Dr. Kenneth L. Heck, Jr.** - Chair, October 2007 to December 2007, in the reporting period

**Dr. John F. Valentine** - Chair, January 2008 - present

**Sally Brennan** - University Programs Registrar

**Carolyn Wood** - Administrative Assistant

## DISL College Credit Hours Delivered

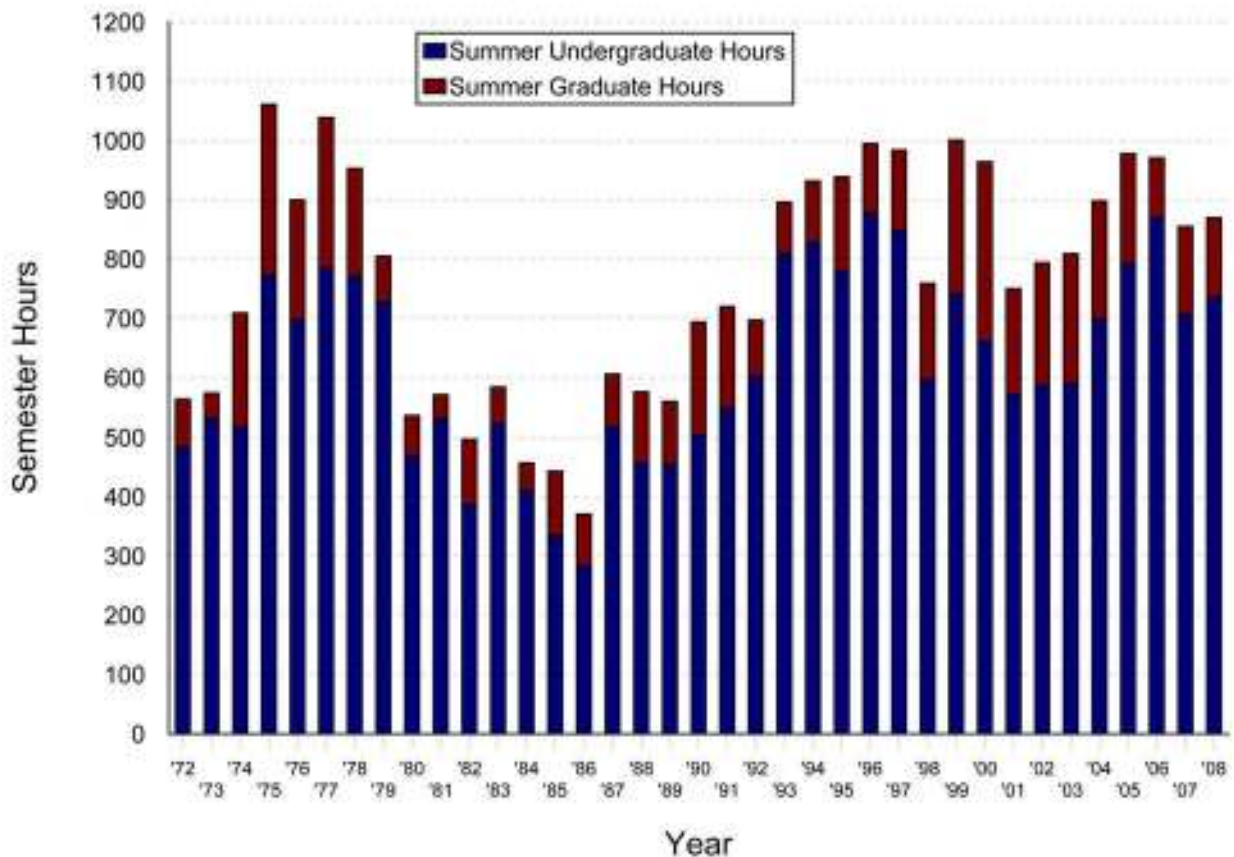


Table 1. 2008 Graduates:

**Andy Canion.** Variability in Phytoplankton Productivity on Hourly to Monthly Time-Scales and Its Coupling with Nitrogen Inputs to Weeks Bay, Alabama. M.S. (USA).

**Daniela Del Valle.** Biogeochemical cycling of DMS and DMSO in the surface ocean, with emphasis on the Ross Sea, Antarctica. Ph.D. (USA)

**J. Daniel Husband.** Role of DMSP in oxidative stress protection in *Spartina alterniflora*. Ph.D. (USA).

**Kelly McKay.** The effects of prior grazing by the variegated sea urchin and the bucktooth parrotfish on the palatability of turtlegrass. M.S. (USA).

**Mary-Elizabeth C. Miller.** Settlement and Survival of the Moon Jellyfish, *Aurelia* sp. (Cnidaria, Scyphozoa) in Response to Hypoxia. M.S. (USA).

**Thad Murdoch.** A Functional Group approach for predicting the composition of hard coral assemblages in Florida and Bermuda. Ph.D. (USA).

**D. Craig Newton.** Juvenile Red Snapper Density, Diet, and Growth Among Four Nursery Habitats in the Northcentral Gulf of Mexico. M.S. (USA).

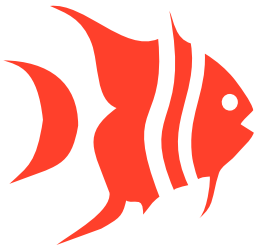
**Rochelle Plutchak.** An Assessment of Services Provided by Artificial Oyster Reefs: Primary Production and Nutrients in Tidal Creeks. M.S. (USA).

**Alison Rellinger.** Distribution and cycling of DMSP and DMS in the deep waters of the Ross Sea, Antarctica. M.S. (USA).

**Deborah Shafer.** Physiological factors affecting the distribution of the nonindigenous seagrass *Zostera japonica* along the Pacific Coast of North America. M.S. (USA).

**Carly Steeves.** The Effects of Increased Habitat Structure on Predation Rates in Seagrass Beds. M.S. (USA).

**Jason Stutes.** Seagrass (*Halodule wrightii*) communities of the Northwest Gulf of Mexico: Differences in production dynamics and primary consumption across a gradient of human impact. Ph.D. (USA).



# Mobile Bay National Estuary Program

Prepared by Mobile Bay National Estuary Program-  
Roberta Swann, Interim Director

## Management Conference

MBNEP's Management Conference consists of the following committees- Community Action Committee, Community Resources Committee, Government Networks Committee, Project Implementation Committee, Science Advisory Committee, Finance Committee, and an Executive Committee. During 2008, the following activities took place:

The Community Action Committee organized, identified volunteer water quality monitoring as their main focus, developed a grassroots organization based mini grant program, and conducted the first round of this peer reviewed funding program. The first projects to be undertaken in 2008 were Little Lagoon Preservation Society (LLPS) - Signage, educational speaker, lab equipment; Wolf Bay Watershed Watch (WBWW) - Automated Water Monitoring Instrument; Dog River Clear Water Revival (DRCR) -Dog River Park Restoration. Four organizations, DRCR, LLPS, WBWW, and the Weeks Bay Foundation, each applied for and received YSI 556 Multiparameter Instruments to enhance water monitoring efforts in their home waters as a second round of their peer reviewed funding program.

The Community Resources Committee charged MBNEP staff with the preparation of an informative four color, tri-fold pamphlet, Clean Water Is Everybody's Business – Protecting our Water Quality from Stormwater Begins at Home, and an educational Powerpoint presentation, Stormwater Runoff and Mobile Bay – What Does It Have to Do With Me?, essentially "Stormwater 101." The pamphlet debuted at the Festival of Flowers and is being distributed at various locations throughout the two county area and at local events. The Powerpoint presentation has been presented at various service club meetings, schools, and continuing education venues in part to support efforts by the Baldwin County Stormwater Working Group in preparation for a November, 2010



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referendum. They also charged the Program Office with developing a locally focused presentation on the impact of plastic bags on our environment for 2008 BirdFest.

The Government Networks Committee did not meet during 2008. It is anticipated that this committee will re-convene with the arrival of a new director for the program.

The Project Implementation Committee has initiated activities in the Fish River, currently on the State's 303(d) list of Impaired Water Bodies, to identify sources of pathogens, to conduct a shoreline characterization, and to develop an interdisciplinary assessment of population growth and development impacts on the Fish River Basin coastal community.

The Science Advisory Committee oversaw the process of using fifteen estuary indicator areas



to generate a State of the Bay Report, which was initially distributed on December 7 with the Sunday Press-Register followed by a special distribution through the mail to elected officials, federal, state, and local agency representatives, and others.

The Finance Committee has begun implementation of a community investment plan aimed at soliciting investment from each of the municipalities in the two county area plus both counties based on the number of community residents. MBNEP have begun to reach out to the cities of Prichard, Saraland, Bayou La Batre, Chickasaw and Satsuma.

The Executive Committee focused its activities on guiding the program through the transition to a new director. As Captain David Yeager retired in June, the committee worked to revise the job description and recruit a qualified successor. Dr. Toby Bolton was hired in December, 2008 and will assume the position on April 1, 2009.

## **Water Quality**

### Sub-Estuary Monitoring

MBNEP continued its commitment of support to monitoring activities throughout the estuary. Through a contract with the Alabama Department of Environmental Management (ADEM), water quality assessments of three sub-estuaries along the perimeter of Mobile Bay were completed. ADEM monitored parameters including, but not limited to, in situ water chemistry, turbidity, ammonia, DRP (orthophosphates), chlorophyll-a, and pathogens. In addition, sediment sampling was conducted for approximately 15 metals of concern, polyaromatic hydrocarbons, and pesticides. During the year 2008 the third of three sub-estuaries (along with Weeks Bay and Bayou le Batre), the Dog River watershed, was completed.

### Mobile Bay Real-time Water Monitoring

With on-going funding (2<sup>nd</sup> year) received from the Gulf of Mexico Program in 2008, all sites, Meaher Park, Dauphin Island, Weeks Bay, and Mobile (Middle) Bay, are up and running and information generated can be viewed at [www.mymobilebay.com](http://www.mymobilebay.com). The website also contains links to the Mobile River, Fort Morgan, and the Farewell Buoy as part of the Physical Oceanographic Real-Time System of the National Ocean Service with data particularly pertinent to shipping interests. Data is also available from Weeks Bay and Grand Bay through the NOAA National Weather Service Hydrometeorological Automated Data System. In the future, the website will be connected to a larger network of stations as part of the Gulf Coast Ocean Observing System, and

research reports, maps, and other information will be made available to the public.

### Eight Mile Creek

Maintaining a focus on the Eight Mile Creek Watershed, MBNEP is working with Charlene LeBleu, Assistant Professor in the Community Planning Program at Auburn University to undertake a Graphical Characterization Report of the lower Eight Mile Creek watershed. The objectives of this project seek to: 1) characterize the ecosystems and shoreline stream conditions occurring along Eight Mile Creek in Prichard, Alabama from St. Stephens Rd (Hwy. 45) to I-65; 2) assess stream health; 3) design walking trail extensions to Reading Park; 4) identify greenspace opportunities; and 5) propose educational opportunities for surrounding and abutting communities. The characterization will be graphic in nature and include information on aquatic, plant, animal and human communities. Existing stream conditions will be inventoried including current land use.

### Coastal Alabama Clean Water Partnership

MBNEP holds the contract with the Alabama Clean Water Partnership to host the Coastal Alabama Basin Facilitator. During this past year, the Clean Water Partnership received a 319 grant to implement a watershed action plan targeting water quality improvements in Juniper Creek, a tributary of Big Creek Lake. Actions included fencing along the creek to keep cows out, the purchase and installation of an agitator pump in the waste lagoon of a dairy to remove the waste for proper disposal. A field day demonstrating the septic tank pump-outs was conducted on July 10, 2008. A septic tank seminar is scheduled for local landowners for fall 2009. With the assistance of the Southeast Watershed Forum, the CWP also developed Fact Sheets on Urban Forestry, Wetland Ordinances, Wetland Buffer Zones, Riparian Forests, and Floodplain Management. The Fact Sheets are 95% complete and will be ready for distribution soon. Finally, the CWP participated in the Wolf Bay Watershed 10 Year Celebration and the annual CWP Statewide Conference.

### Clean Marina Program

The Alabama- Mississippi Clean Marina Program was developed as a voluntary program and implemented by the Mississippi-Alabama Sea Grant Consortium and its partners ( Alabama Department of Natural Conservation and Resources, State Lands Division, Coastal Section, Alabama Department of Environmental Management, Auburn University Marine Extension and Research Center, Mississippi Department of Marine Resources,

Mississippi Department of Environmental Quality, and the Mobile Bay National Estuary Program) to promote environmentally responsible marina and boating practices. In 2008, River Delta Marina was awarded "designated" status, joining two other Alabama Clean Marinas. Designation pledge cards have been received from Dauphin Island Marina, Bear Point Marina, and San Roc Cay Marina. All are working toward making facility improvements in anticipation of undergoing Clean Marina evaluations soon. Dauphin Island and Bear Point Marinas, both, installed pump-outs in 2008. Sportsman Marina and Orange Beach Marina were also preliminarily evaluated by the Clean Marina Coordinator in 2008 for designation purposes, but both have significant siting and design issues that must be overcome in order to qualify.

## **Living Resources**

### Oyster Gardening

During the 2008 Oyster Gardening season, 34 volunteers grew over 59,000 oysters which were collected and then planted on Fish River, Boykin, and Shellbanks Reefs around Mobile Bay. Volunteers from Mobile County raised approximately 15,000 oysters, and Baldwin County volunteers raised approximately 44,000.

## **Habitat Management**

### The Mississippi-Alabama Habitats Database

During the summer of 2005, MASCG and MBNEP worked with the DISL to develop an online habitat conservation, restoration, and enhancement database to track habitat conservation activities in the eleven coastal counties of Mississippi and Alabama. A mechanism was thereby established for tracking data such as 1) habitat projects planned, in progress, or completed along the northern Gulf of Mexico; 2) types of habitat conserved; 3) conservation techniques employed; 4) the variety of funding sources used; and 5) the locations of such projects. The database's development was funded by MASGC, and it resides on a Microsoft SQL server managed by the DISL at <http://restoration.disl.org/database>. During 2008, MBNEP partnered with NOAA and The Nature Conservancy in an effort to enhance the interactivity of the database and add GIS mapping capabilities and habitat prioritization tools. In December, a meeting of the Coastal Habitats Restoration Team was convened to plan, discuss, and implement these features.

### Habitat Mapping

The U.S. Geological Survey's National Wetlands Research Center has collaborated with the

Mobile Bay National Estuary Program through cooperative agreements for the past five years. These agreements have been for the National Wetlands Research Center to acquire aerial photography of Mobile County and to produce Digital Orthophoto Quarterquads of Mobile County, and Digital Quadrangles for Baldwin County from aerial photography for use by the USGS, the State of Alabama, Mobile and Baldwin counties, and the National Estuary Program. The agreements have also included the mapping of wetlands and uplands of Mobile and Baldwin counties from the aerial photography acquired to add to the USGS Gulf of Mexico database, and the National Wetlands Inventory geodatabase. In January 2008, the MBNEP received three large format maps/posters (Mobile County, Baldwin County, and comparative) from this ongoing effort. In February of 2008, MBNEP entered into another contract with USGS, to complete an accuracy assessment report and to prepare a comparison report of USGS data with USGS 2001 Landsat-derived MRLC data and the 2001 NOAA C-CAP Landsat-derived data set to address concerns that the MBNEP expressed about what was presented in the previous three-map set. The contract was entered into with an understanding that a third contract would be issued in the future to complete and publish a Wetland Status and Trends technical report. The accuracy assessment/comparison report was received by the MBNEP in December, 2008.

Complementary to the USGS effort, MBNEP collaborated with NASA and Science Systems and Applications, Inc. at the Stennis Space Center to complete a report – Land Use and Land Cover Change from 1974 to 2009 Around Mobile Bay, AL – which quantifies and assesses geospatial land use/land cover changes in the coastal counties of Mobile and Baldwin, AL. The Mobile Bay estuary was selected by MBNEP's partners because of the observed anthropogenic changes there and its environmental diversity and ecological importance.

### Submerged Aquatic Vegetation (SAV)

SAV mapping has proved challenging due to the many weather related variables that cannot be controlled. Efforts to acquire imagery of Submerged Aquatic Vegetation (SAV) throughout Mobile and Baldwin Counties in the summer 2008 were unsuccessful due to factors that included wind, rain, turbidity, and night crew unavailability. Representatives of the contractor, Vittor and Associates, met with DISL, MBNEP and ADCNR, State Lands Division staff in September 2008 to discuss strategies for acquiring imagery that included as many SAV species as possible. The

group determined that a two part SAV mapping effort would be undertaken to capture southern points with fall 2008 survey and a second survey in spring 2009 to capture Delta species. Imagery was acquired successfully in the first of the two surveys.

#### Coastal Bird Assessment

In 2008 MBNEP and ADCNR in partnership with the National Audubon Society through its Coastal Bird Conservation Program completed the second year of a comprehensive standardized survey of the Alabama coast (including islands) for breeding beach-nesting birds with the cooperation of state and federal agencies. The surveyed species included: Snowy Plovers, Wilson's Plovers, American Oystercatchers, Least Terns, Gull-billed Terns, Common Terns and Black Skimmers. The CBCP surveyed all beach-nesting bird habitat or potential habitat on the Alabama coastline at sites on Bon Secour National Wildlife Refuge, Dauphin Island, West Dauphin Island, Isle Aux Herbes, Pelican Island, Cat Island, Gulf State Park, and Barton Island Peninsula. Some protective signage was installed to notify visitors of the presence of nesting birds.

#### Little Dauphin Island Vegetation Restoration

Little Dauphin Island, part of the Bon Secour Wild Life Refuge System, is a fragile barrier feature along the rapidly developing Alabama Gulf Coast. It is host to a diverse assemblage of beach, coastal dunes and associated uplands, salt marsh, and wetlands at the mouth of Mobile Bay. These habitats support a variety of threatened and endangered species, including the piping plover, sea turtles, and more than 370 species of migratory birds.

During the latter part of 2007 through April 2008, MBNEP partnered with the Bon Secour Refuge to conduct a dune planting along the eastern end of the island to stabilize sand and promote increased shore accretion to support piping plover habitat and tree plantings farther west to provide habitat and stabilize this dynamic island landscape which protects the northern shore of Dauphin Island from the impact of storms and flooding. More than 40 volunteers planted 650 native trees to restore migratory bird habitat.

Unfortunately, flooding from Hurricanes Gustav and Ike wiped out all of the trees that were planted. Areas restored with dune plants were unaffected and continue to thrive.

#### Mobile County Wildlife and Conservation Association Marsh Planting

In June, 2008 the MBNEP partnered with the U. S. Fish & Wildlife Service and the Mobile County Wildlife and Conservation Association to establish a salt marsh on a mud flat directly across the Tensaw Channel from Battleship Park. Approximately 4,000 plants, bull tongue (*Sagittaria lancifolia*) and giant bulrush (*Scirpa californica*), and black needlerush (*Juncus romereanus*) were planted to supplement 700 black needlerush planted by the same partnership in November 2007. Future plantings by this partnership are planned for 2009.

#### **Human Use Issues**

##### D'Olive Creek

In November, 2008, a Request for Qualifications was issued to prepare a Comprehensive Watershed Management Plan for the watersheds of D'Olive Creek, Tiawasse Creek, and Joe's Branch in Baldwin County, AL. This action was taken in response to a study undertaken in 2007 by GSA in partnership with ADCNR, State Lands Division, to assess the impacts of land-use change in this quickly developing area that determined more than two- to over 200-fold greater annual sediment loads in most of these streams when compared to estimated natural geologic erosion rates (without human impact or alteration).

#### **Regional Stormwater Management**

The Baldwin County Watershed Coalition (formerly the Baldwin County Stormwater Working Group) led by MBNEP, all 13 municipalities in Baldwin County, and the County Commission overcame an initial hurdle to the establishment of a regional stormwater utility when HB58 was passed in a special session of the Alabama State Legislature. This bill enacted an amendment to the Constitution of Alabama of 1901, pertaining only to Baldwin County, to authorize the Legislature to provide by local law the formation by county and municipal governing bodies of a public corporation to manage storm water and levy a storm water service charge on property containing impervious surface areas, exempting agricultural and forestry property. Steering, Education, and Technical Committees have been formed and are working towards a county-wide referendum, scheduled for November, 2010, to approve the establishment of this entity.

Sediment Loading in the Magnolia River Watershed  
In September, 2008 the MBNEP contracted Town of Magnolia Springs to hire Marlon Cook of the GSA

to assess sediment loading (both suspended and bed loads) in the Magnolia River watershed, which is currently applying for status as an Alabama's Outstanding Water.

### **Coastal Community Planning**

During the 2008 period, MBNEP initiated a relationship with the City of Prichard to provide organization capacity building so that the city could develop a watershed management plan that would identify future actions the community could take to improve water quality throughout the City.

An effort to develop a Community Plan for the city of Bayou La Batre was funded by the MBNEP and initiated by Mac Martin, a graduate student in Auburn University's Community Planning Program. The Community Plan, developed through a series of visioning workshops with the city's Planning Commission, utilizes "SmartCode" (form-based zoning) and promotes 20-year development that is sustainable, attractive, pedestrian friendly, mixed-use in nature, and considerate of the sensitive wetland habitat that surrounds the city. The final draft of the Community Plan has the support of the Planning Commission and is currently pending review by the City Council.

### **Outreach and Education**

#### State of the Bay Report

The State of Mobile Bay – A Status Report on Alabama's Coastline from the Delta to Our Coastal Waters was completed and distributed to 114,000 people with the Sunday, December 7, 2008 Mobile Press-Register. This report, which assesses the health of the Mobile Bay estuary and surrounding waters in Baldwin and Mobile Counties, is the culmination of four years of work by the MBNEP, its Science Advisory Committee, and many partner organizations. The analysis of 14 indicators sheds light on how community growth has impacted coastal Alabama - how we have altered the coastal environment where we live, work and play. This report will provide the Science Advisory Committee with a baseline for developing a coordinated monitoring system to track changes throughout the coastal environment. The initial distribution garnered considerable attention and was followed with specific distribution to federal, state, and local lawmakers, administrators, business entities, and agency personnel.

#### Events

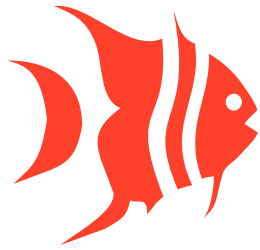
MBNEP facilitated, organized, and/or participated in a number of events during the 2008 period, including: Earth Day, Coastal Clean-up, Coastal Kids Quiz, Discovery Day, Coastal Alabama Birdfest, Derelict Crab Trap Recovery, The Dog River Paddle, Baldwin County Groundwater Festival, Environmental Studies Center Open House among others. Attendance varied widely from 300 to nearly 5,000 participants.

#### Fairhope Gullies brochure

The MBNEP was contacted by the Fairhope Environmental Advisory Board for help developing an educational, pictorial brochure about the numerous gullies found in their community. The brochure written and produced by Program staff, explains the geologic origins, historic perspective and functional significance to the community, threats, and recommendations for their preservation. It will be printed with funding from the Single Tax Colony and distributed by the City of Fairhope in early 2009.

#### **MBNEP Staff:**

Roberta Arena Swann, Interim Director  
Tom Herder, Science Communicator  
Rebecca McElhenney, Program Administrator  
Sara Shields, Americorps Volunteer/Project Coordinator



## Resident Research Faculty

**Richard B. Aronson**, Ph.D. (Harvard University, 1985) Senior Marine Scientist, Dauphin Island Sea Lab (DISL) and Professor of Marine Sciences, University of South Alabama (USA). Ecology and paleoecology of disease outbreaks on coral reefs. Climate change and community paleoecology in Antarctica.

**Ruth H. Carmichael**, Ph.D. (Boston University, 2004) Senior Marine Scientist, DISL and Assistant Professor of Marine Sciences, USA. Employing natural abundance stable isotopes to understand biological and physiological responses to environmental perturbations, assessing nutritional importance of food sources, discerning physiological state of organisms, and determining time scales of ecosystem-level change.

**Just Cebrian**, Ph.D. (Polytechnic University of Catalonia, Spain, 1996) Senior Marine Scientist, DISL and Associate Professor of Marine Sciences, USA. Trophic interactions and carbon budgets in marine ecosystems, nature and controls of trophic routes of primary production in marine and terrestrial ecosystems.

**Michael R. Dardeau**, M.S. (University of South Alabama, 1982) Marine Scientist, DISL and Supervisor, Marine Technical Support & Operations. Coordinating marine operations including wet lab, dive locker, marine chemical and field instrumentation, and vessel operations. Research interests include coastal policy relating to living resources.

**John J. Dindo**, Ph.D. (University of Alabama at Birmingham, 1991) Senior Marine Scientist, DISL, and Chair, Discovery Hall Programs. Marine vertebrate ecology; avian breeding biology; predator-prey relationships in avian and herpetological fauna, habitat assessments; and age, size class and recruitment rates of fish on hard bottoms.

**Joel Fodrie**, Ph.D. (University of California, San Diego, 2006) Research Senior Marine Scientist, DISL and Research Assistant Professor, USA. Fish and bivalve population ecology with emphasis on

connectivity of marine populations, ecosystems; complex trophic interactions in marine communities; and ecosystem function in relation to habitat quality, availability and utilization.

**Monty Graham**, Ph.D. (University of California, Santa Cruz, 1994) Senior Marine Scientist, DISL, and Associate Professor of Marine Sciences, USA. Physical and behavioral mechanisms that cause plankton to be distributed in patches; processes that influence the formation and fate of detrital particles known as "marine snow."

**Kenneth L. Heck**, Ph.D. (Florida State University, 1976) Senior Marine Scientist, DISL, Professor of Marine Sciences, USA. Ecological studies of interactions between seagrasses and associated macrofauna, especially shrimps, crabs, and fishes; Global assessment of seagrass nursery value, and experimental investigations of herbivory, nutrient enrichment and overfishing as they impact seagrass ecosystems.

**Frank J. Hernandez**, Ph.D. (Louisiana State University, 2001). Research Senior Marine Scientist, DISL. Ecology of marine organisms, primarily coastal and reef-associated fishes, particularly the early life history stages of fishes and the physical and environmental processes that affect dispersal, survival to settlement, habitat selection and the eventual recruitment to the adult population.

**Ronald P. Kiene**, Ph.D. (SUNY Stony Brook, 1986) Senior Marine Scientist, DISL and Professor of Marine Sciences, USA. Biogeochemical cycling of organic matter in coastal and ocean systems with emphasis on compounds containing sulfur and nitrogen; cycling of climatically important trace gases in relation to phytoplankton and food web dynamics; and microbial ecology and biogeochemistry in sediments.



*Dr. Behzad Mortazavi joined DISL in 2008.*

**Hugh MacIntyre**, Ph.D. (University of Delaware, 1996) Senior Marine Scientist, DISL and Assistant Professor of Marine Sciences, USA . Photosynthetic physiology and the dynamics of phytoplankton blooms (including harmful algal blooms) and in-water optical monitoring of water quality and productivity dynamics.

**Christine (Tina) Miller-Way**, Ph.D. (Louisiana State University, 1994) Marine Scientist-Educator, Northern Gulf Institute Liaison, DISL. Science education - curriculum development, inquiry-based marine science; Research - functional ecology of marine benthos, benthic community structure, macrofaunal effects on benthic processes and coastal hypoxia.

**Behzad Mortazavi**, Ph.D. (Florida State University, 1998) Senior Marine Scientist, DISL, and Assistant Professor and Director of the University of Alabama M.S. Degree Program in Marine Science. Focus on the transfer and cycling of bioreactive material in terrestrial and marine ecosystems, with a particular emphasis on how naturally occurring perturbation and anthropogenic activities are impacting biogeochemical cycles.

**Alice C. Ortmann**, Ph.D. (University of British Columbia, 2005) Senior Marine Scientist, DISL, and Assistant Professor of Marine Sciences, USA. Diversity and ecological roles of marine microbes including Bacteria, Archaea and their viruses using both culture-based and molecular biology techniques.

**Kyeong Park**, Ph.D. (College of William and Mary, 1993) Senior Marine Scientist and Associated Professor of Marine Sciences, USA. Physical transport

processes and their effects of water quality and living resources in tidal rivers, estuaries and coastal systems, using field data, theoretical analysis and numerical models; estuarine residual circulation, dispersion of pollutants, sediment transport, eutrophication and hypoxia/anoxia.

**Sean P. Powers**, Ph.D. (Texas A&M University, 1997) Senior Marine Scientist, DISL and Associate Professor of Marine Sciences, USA. Fisheries, experimental ecology, conservation and restoration of coastal shellfish and finfish populations.

**D. LaDon Swann**, Ph.D. (Purdue University, 1999) Director, Mississippi-Alabama Sea Grant Consortium, and Associate Research Professor, Auburn University. Biological research focuses on marine aquaculture with an emphasis on oyster reproduction. Educational research interest focuses on distance education for adult learners.

**John F. Valentine**, Ph.D. (University of Alabama, 1989) Chair of University Programs, Senior Marine Scientist, DISL and Professor of Marine Sciences, University of South Alabama. The role of biotic processes in controlling the flow of energy in seagrass communities, conservation biology, and the potential for marine protected areas to restore food web function in seagrass-coral reef systems.



*Dr. Alice Ortmann also joined DISL in 2008.*



## Faculty Activity

### Peer Reviewed Publications

**Aronson, R. B.**, S. Thatje, A. Clarke, L. S. Peck, D. B. Blake, C. D. Wilga and B. A. Seibel. 2007. Climate change and invisibility of the Antarctic benthos. *Annual Review of Ecology, Evolution and Systematics* 38:129-154. (DISL Contribution No. 385)

Bailey K. E., D. A. Toole, B. Blomquist, R. G. Najjar, B. Heubert, D. J. Kieber, **R. P. Kiene**, P. Matrai, G. Westby and D. A. del Valle. 2008. Dimethylsulfide production in Sargasso Sea Eddies. *Deep-Sea Research II* 55:1491-1504.

Barord, G. J., **W. M. Graham** and K. M. Bayha. 2008. First report of the invasive medusa, *Phyllorhiza punctata* von Lendenfeld (1884) in Galveston Bay, Texas. *Gulf of Mexico Science* 25: 166-167.

Bayha, K.M. and **W. M. Graham**. 2008. A new Taqman® PCR-based method for the detection and identification of scyphozoan jellyfish polyps. *Hydrobiologia* (Online First).

**Carmichael, R.**, W. Walton, H. Clark. 2008. Abstract. Remediation of eutrophication by oysters, *Crassostrea virginica*. *Journal of Shellfish Research* 27:968

Carpenter, K. E., M. Abrar, G. Aebly, **R. B. Aronson**, S. Banks, A. Bruckner, A. Chiriboga, J. Cortés, J. C. Delbeek, L. DeVantier, G. J. Edgar, A. J. Edwards, D. Fenner, H. M. Guzmán, B. W. Hoeksema, G. Hodgson, O. Johan, W. Y. Licuanan, S. R. Livingstone, E. R. Lovell, J. A. Moore, D. O. Obura, D. Ochavillo, B. A. Polidoro, W. F. Precht, M. C. Quibilan, C. Reboton, Z. T. Richards, A. D. Rogers, J. Sanciangco, A. Sheppard, C. Sheppard, J. Smith, S. Stuart, E. Turak, J. E. N. Veron, C. Wallace, E. Weil and E. Wood. 2008. One-third of reef-building corals face elevated extinction risk from climate change and local impacts. *Science* 321:560-563.

**Cebrian, J.**, G. A. Miller, J. P. Stutes, A. L. Stutes, M. Miller and K. Sheehan. 2008. A comparison of fish populations in shallow coastal lagoons with contrasting shoalgrass (*Halodule wrightii*) cover in the North Central Gulf of Mexico. *Gulf and Caribbean Research* 21:80-83.

**Cebrian, J.**, C. D. Foster, R. Plutchak, K. L. Sheehan, M. E. C. Miller, A. Anton, K. Major, **K. L. Heck, Jr.** and **S. P. Powers**. 2008. The impact of Hurricane Ivan on the primary productivity and metabolism of marsh tidal creeks. *Aquatic Ecology* 42: 391-404.

Coen, L. D., R. D. Brumbaugh, D. Bushek, R. Grizzle, M. W. Luckenbach, M. H. Posey, **S. P. Powers** and S. G. Tolley. 2007. Ecosystem services related to oyster restoration. *Marine Ecology Progress Series* 341:304-307.

Damm, E., **R. P. Kiene**, J. N. Schwarz, E. Falck and G. S. Dieckmann. 2008. Methane cycling in Arctic shelf water and its relationship with phytoplankton bloom and DMSP. *Marine Chemistry* 109:45-59.

Daskin, J. H., K. Calci, W. Burkhardt, III, and **R. Carmichael**. 2008. Use of N stable isotope and alternative microbial analysis to define wastewater influence in Mobile Bay, AL. *Marine Pollution Bulletin* 56:860-868.

Furman, B. T. and **K. L. Heck, Jr.** 2008. Effects of nutrient enrichment and grazers on coral reefs: an experimental assessment. *Marine Ecology Progress Series* 363:89-101.

Gabric, A. J., P. Matrai, **R. P. Kiene**, R. Cropp, J. Dacey, G. DiTullio, R. Najjar, R. Simo, D. A. Toole, D.A., del Valle and D. Slezak. 2008. Factors determining the vertical profile of dimethylsulfide in the Sargasso Sea during summer. *Deep-Sea Research II* 55:1505-1518.

Hunter, A., N. M. B. Morris, C. Lafabrie and **J. Cebrian**. (corresponding author). 2008. Effects of nutrient enrichment on *Distichlis spicata* and *Salicornia bigelovii* in a marsh salt pan. *Wetlands* 28: 760-775.

Ivany, L. C., K. C. Lohmann, F. Hasiuk, D. B. Blake, A. Glass, **R. B. Aronson** and R. M. Moody. 2008. Eocene climate record of a high southern latitude continental shelf: Seymour Island, Antarctica. *Geological Society of America Bulletin* 120:659-678.

Mattila, J., **K. L. Heck, Jr.**, E. Millstein, E. Miller, C. Gustafsson, S. Williams and D. Byron. 2008. Increased habitat structure may not always provide increased refuge from predation. *Marine Ecology Progress Series* 349:15-20.

Johnson, M. W. and **K. L. Heck, Jr.** 2007. Habitat fragmentation influences survival and growth of transplanted northern quahog (*Mercenaria mercenaria* Linné) in Big Lagoon, FL. *Journal of Shellfish Research* 26:1011-1020.

Kramer, K. L. and **K. L. Heck, Jr.** 2007. Has marine reserve establishment made a difference? Fish community structure, grazing intensity and benthic cover on protected and fished patch reefs in the Florida Keys. *Marine Ecology Progress Series* 349:111-123.

McKay, K. M. and **K. L. Heck, Jr.** 2008. Presence of the Jonah crab, *Cancer borealis*, significantly reduces kelp consumption by the green sea urchin, *Strongylocentrotus droebachiensis*. *Marine Ecology Progress Series* 356:295-298.

Merzouk, A., M. Lévassieur, M. Scarratt, S. Michaud, M. Lizotte, R. B. Rivkin and **R. P. Kiene**. 2008. Bacterial DMSP metabolism during the senescence of the spring diatom bloom in the Northwest Atlantic. *Marine Ecology Progress Series* 369:1-11. Selected as Featured Article.

**Park, K.**, H. V. Wang, S.-C. Kim, and J.-H. Oh. 2008. A model study of the estuarine turbidity maximum along the main channel of the upper Chesapeake Bay. *Estuaries and Coasts* 31:15-133.

Powers, M. J., H. C. Summerson, C. H. Peterson, and **S. P. Powers**. 2007. Macroalgal growth on bivalve aquaculture netting enhances nursery habitat for mobile invertebrates and juvenile fishes. *Marine Ecology Progress Series* 339:100-122.

Ross, O. N., C. M. Moore, D. J. Suggett, **H. L. MacIntyre** and R. J. Geider. 2008. A model of photosynthesis and photo-protection based on reaction center damage and repair. *Limnology and Oceanography* 53:1835-1852.

**Valentine, J. F., K. L. Heck, Jr., D. Blackmon, M. E. Goecker, J. Christian, R. M. Kroutil, B. J. Peterson, M. A. Vanderklift, K. D. Kirsch and M. Beck.** 2008. Impacts of exploited fishes on food web interactions along the coral reef-seagrass interface: a test using marine protected areas (MPA's). *Ecological Applications* 18:1501-1515.

**Valentine J. F., K. L. Heck, Jr., D. Blackmon, B. J. Peterson, M. E. Goecker, J. Christian, R. M. Kroutil, M. A. Vanderklift, Kevin D. Kirsch and M. Beck.** 2008. Exploited species impacts on trophic linkages along reef-seagrass interfaces in the Florida Keys. *Ecological Applications* 18: 1501-1515.

Vila-Costa, M, **R. P. Kiene** and R. Simó. 2008. Seasonal variability of the dynamics of dimethylated sulfur compounds in a coastal northwest Mediterranean site. *Limnology and Oceanography* 53:198-211.

### Book Chapters and Projects

**Aronson, R. B.** Contributing author to Kaesler, R., editor-in-chief. In press. *Treatise of Invertebrate Paleontology, Second Edition. Part U: Asterozoa*; D. B. Blake, editor.

**Carmichael, R. H., E. Gaines, Z. Sheller, A. Tong, A. Clapp, and I. Valiela.** Diet composition of juvenile horseshoe crabs: Implications for growth and survival of natural & cultured stocks. In *Biology and conservation of horseshoe crabs*. Springer, New York.

Kieber, D. J., D. A. Toole and **R. P. Kiene**. Chromophoric dissolved organic matter cycling during a Ross Sea *Phaeocystis antarctica* bloom. In: Neale, P. J. (Ed.), *Smithsonian at the Poles*. Smithsonian Institution Scholarly Press.

Smith, D., M. Millard, **R. Carmichael**. Status and Assessment of *Limulus polyphemus* along the western Atlantic. In *Biology and conservation of horseshoe crabs*. Springer, New York.

Thomas, S. and **J. Cebrian**. 2008. Ecological Stoichiometry: Ecosystem Patterns and Processes. In: S. J. Erikson (ed.), *Encyclopedia of Ecology*. Elsevier, Oxford, UK. Pp: 1139-1148.

**Valentine, J. F., K. L. Heck, M. Dardeau** and Hank Burch. In press. Ecosystem-based Management of Mobile Bay, Alabama. In: *The Gulf of Mexico: Its Origins, Waters, Biota & Human Impacts*.

Volume V: *The Gulf of Mexico: Ecosystem-Based Management*. J. Day and A. Yanez-Arancibia. Texas A & M University Press.

### Technical Reports

Precht, W. F., **R. B. Aronson**, K. J. P. Deslarzes, L. S. Kaufman, M. L. Robbart, E. L. Hickerson, G. P. Schmahl and J. Sinclair. 2008. Long-term reef monitoring at the Flower Garden Banks: status, stasis and change. Pp. 41-44. In: K. B. Ritchie and B. D. Keller (Eds.), *A scientific forum on the Gulf of Mexico: the Islands in the Stream* concept. U. S. Department of Commerce, National Oceanic and Atmospheric Administration, Silver Spring, MD. National Marine Sanctuary Program Report NMSP-08-04.

**Powers, S. P.** and M. A. Bishop. 2008. Intertidal Resources at Risk to Oil Spills: Ecology of the Copper River Delta. Final Report to the Prince William Sound Oil Spill Recovery Institute, 205 pgs.

### General Publications

**Graham, W. M.** 2008. Jellyfish bloom in troubled waters. *Marine Scientist* 23:24-27.

**Kiene, R. P.** 2008. Genes in the Glass House. *News and Views*. Re: Bowler et al. *The Phaeodactylum genome*. *Nature*. (Invited Article).

**MacIntyre, H. L.** In press. Review of J. C. Kromkamp, J. F. C. de Brouwer, G. F. Blanchard, R. M. Forster and V. Créach (Eds.). 2006. *Functioning of microphytobenthos in estuaries*. University of Chicago Press, Chicago, Illinois. X + 262 p. ISBN: 90-6984-453-2). *Ecology*.

### Abstracts & Presentations

#### Invited

Ajemian, M. J. and **S. P. Powers**. 2008. Assessing residency and movements of spotted eagle rays (*Aetobatus narinari*) in a shallow marine benthic landscape via an array of autonomous hydrophones. In: *Advances in Fish Tagging and Marking Techniques*. American Fisheries Society Symposium.

**Aronson, R. B.** and R. M. Moody. 2007. ADCNR/NOAA Office of Coastal Resources Management Team, Alabama 312 Evaluation. Development of trophic interactions in restored salt marshes.

**Aronson, R. B.** 2008. Eleventh International Coral Reef Symposium, Fort Lauderdale, FL. Science and Advocacy. International Society for Reef Studies Presidential Address.

**Aronson, R. B.** 2008. 25th Midcontinent Paleobotanical Colloquium, Mobile, AL. Climate change and biological invasion in Antarctica. Plenary speaker.

**Aronson, R. B.** 2007. Ocean Carbon and Biogeochemistry Scoping Workshop on Ocean Acidification Research, Scripps Institution of Oceanography, San Diego. Invited presenter in Coral-Reef and High-Latitude Working Groups.

**Graham, W. M.** 2007. Revealing patterns and processes of an invasive jellyfish in the northern Gulf of Mexico. University of West Florida, Pensacola.

**Graham, W. M.** 2008. Jellyfish in Fisheries-Based Ecosystems. Scripps Institution of Oceanography, Marine Life Group.

**Heck, K. L., Jr.** 2008. Consumers rule: The primacy of top-down effects in shallow benthic ecosystems, Edith Cowan University, Western Australia, January.

**Heck, K. L., Jr.** 2008. Consumers Rule: The primacy of top-down effects in shallow benthic ecosystems. Pacific Estuarine Research Society Meeting, Portland, OR, March. Keynote speaker.

**Heck, K. L., Jr.** 2008. The primacy of predator-prey interactions in shallow benthic ecosystems. Bodega Marine Lab, University of California, Davis, March.

**Mortazavi, B.** 2008. Controls on Carbon Processing in Marine and Upland Ecosystems. Belle W Baruch Institute for Marine Sciences, Georgetown, SC, July 29.

**Mortazavi, B.** 2008. Controls on Carbon Processing in Marine and Upland Ecosystems. Belle W Baruch Institute for Marine Sciences, Georgetown, SC, July 29.

**Park, K.** 2008. A modeling study of the estuarine turbidity maximum along the main channel of the upper Chesapeake Bay, USA. NOAA NCCOS Workshop on Ecological Effects of Sea Level Rise: Research and Modeling Needs, Gulf Ecology Division, USEPA, Gulf Breeze, FL, Jan 23-24.

**Park, K.** 2008. The effects of Hurricane Ivan in the inner part of Mobile Bay, Alabama. NOAA NCCOS Workshop on Ecological Effects of Sea Level Rise: Research and Modeling Needs, Gulf Ecology Division, USEPA, Gulf Breeze, FL, Jan 23-24.



- Park K.** 2008. Water quality modeling in estuarine and coastal waters: Concept and an example application. Louisiana State University, Baton Rouge, LA, Feb 7-8.
- Park K.** 2008. A hydrodynamic modeling of Mobile Bay, Alabama. Mississippi State University, Mississippi State, MS, Mar 27-28.
- Park K.** 2008. Water quality modeling in estuarine and coastal waters: Concept and an example application. Chonnam National University (Yeosoo Campus), Yeosoo, Korea, Apr 8-9.
- Powers, S. P.** 2008. Habitat loss and restoration in coastal Alabama. National Oceanic and Atmospheric Administration, Silver Spring, MD.
- Valentine, J. F.** 2007. Trophic exchanges among tropical marine habitats. Cape Eleuthera Institute, Bahamas.
- Other**
- Adams, C.G., **K. Park** and M. Misra. 2007. Revisiting sampling and classification of shellfish harvesting areas in Alabama. 9th Annual Undergraduate Research Week, University Committee for Undergraduate Research, University of South Alabama.
- Ajemian, M. J. and **S. P. Powers.** 2008. Movements of Bermudian spotted eagle rays (*Aetobatus narinari*) inferred from passive acoustic monitoring. Tag 2008: International Symposium on Advances of Fish Marking and Tagging Technology, University of Auckland, February 24-28.
- Anton, A., **J. Cebrian**, K. Sheehan, C. Drew Foster, M. Miller and J. Goff. 2007. The Impact of Hurricane Katrina on the Structure and Functioning of Seagrass Meadows. 19th Biennial Conference of the Estuarine Research Federation, RI, 4-8 November.
- Aronson, R. B.**, I. G. Macintyre and W. F. Precht. 2007. Smithsonian Marine Science Network Symposium, Washington, DC. Biotic turnover on reefs of the eastern Caribbean and eastern Pacific: Holocene surprises and future projections.
- Aronson, R. B.** 2008. Florida Institute of Technology, Melbourne, FL. Predation, Climate Change, and the Antarctic Benthos.
- Aronson, R. B.** 2007. Florida Institute of Technology, Melbourne, FL. Millennial-Scale Dynamics of Caribbean Reefs.
- Aronson, R. B.**, I. G. Macintyre, S. Vollmer, J. Hobbs and A. Moesinger. Climate change and reef development in the tropical eastern Pacific. Eleventh International Coral Reef Symposium, Fort Lauderdale, FL (2008).
- Aronson, R. B.** and D. B. Blake. 2008. American Association for the Advancement of Science Annual Meeting, Boston, MA. Symposium, "Under Thin Ice: Global Warming and Predatory Invasion of the Antarctic Seas"; Into the icehouse: Eocene cooling and Antarctic seascapes.
- Bood, N., M. McField and **R. Aronson.** 2008. Influence of management on resilience of hard-coral assemblages on Belize reefs (poster). Eleventh International Coral Reef Symposium, Fort Lauderdale, FL.
- Canion, A. K., **H. L. MacIntyre** and S.W. Phipps. 2007. Variability in primary productivity model inputs on multiple timescales: Implications for productivity monitoring in Weeks Bay, USA. Southeastern Phycological Colloquy, Dauphin Island, AL, October 26-27.
- Canion, A. K., **H. L. MacIntyre** and S. W. Phipps. 2008. Variability in primary productivity model inputs on multiple timescales: Implications for productivity monitoring in Weeks Bay, USA. Ocean Sciences Meeting, Orlando, FL, March 2-7.
- Carmichael, R. H.** Remediation of eutrophication by oysters, *Crassostrea virginica*. NSA Annual Meeting, Providence, RI, 2008.
- Carmichael, R. H.** Manatees in Mobile Bay—Who knew?, Jacksonville State University, 2008.
- Carmichael, R. H.** Use of N stable isotopes in bivalve shell to trace wastewater inputs to estuaries. ERF Biennial Conference, Providence, RI, 2007.
- Carpenter, K., S. Livingstone, M. Abrar, G. Aeby, **R. Aronson**, A. Bruckner, C. Delbeek, L. Devantier, G. Edgar, A. Edwards, D. Fenner, H. Guzman, B. Hoeksema, G. Hodgson, D. Huang, O. Johan, A. Licuanan, E. Lovell, J. Moore, D. Obura, D. Ochavillo, W. Precht, M. Quibilan, C. Reboton, Z. Richards, A. Rogers, J. Sanciangco, A. Sheppard, C. Sheppard, J. Smith, M. Syahrir, E. Turak, E. Weil, E. Wood and D. Zebrowski. A global assessment of the threat of extinction for reef-building corals. Eleventh International Coral Reef Symposium, Fort Lauderdale, FL (2008)
- Cebrian, J.**, K. Pickard and T. Clardy. 2008. The effects of short-term shading and sediment nutrient enrichment on shoalgrass (*Halodule wrightii*) growth dynamics. 8th International Seagrass Biology Workshop, Bamfield Marine Lab, Victoria Canada. August 31-September 5.
- Cebrian, J.**, D. Foster, R. Plutchak, K. Sheehan, A. Anton, M. Miller, K. Major, **K. Heck** and **S. Powers.** 2007. The impact of Hurricane Ivan on the Primary Productivity and Metabolism of Marsh Tidal Creeks in the North Central Gulf of Mexico. 19th Biennial Conference of the Estuarine Research Federation, Providence, RI, November 4-8.
- Colomb, M., **K. Park**, J. Veazey and M. Misra. 2007. Revisiting water quality monitoring strategies in Alabama by use of systematic sampling and Bayesian dynamic linear model approach. In: Abstracts for the 2007 Annual Meeting for AIChE, Salt Palace Convention, Salt Lake City, UT, Nov 4-9.
- Drymon, M. and **S. P. Powers.** 2008. Quantifying Regional Differences in Shark Abundance and Distribution: A Step Towards Ecosystem Management. American Elasmobranch Society Annual Meeting. Montreal, Canada. July 23-28.
- Fodrie, F. J.**, **K. L. Heck, Jr.** and **S. P. Powers.** 2008. Community structure, recruitment potential and climate-related faunal shifts of fishes in northern Gulf of Mexico seagrass meadows. Benthic Ecology Meeting, Providence, RI. April 10-12.
- Goldman, E. A., J. D. Liefer, W. L. Smith, **K. Park** and **H. L. MacIntyre.** 2008. Seasonal variation in nutrients and microalgal community composition in Mobile Bay, Alabama, and the northern Gulf of Mexico. Ocean Sciences Meeting, Orlando, FL, March 2-7.
- Goldman, E. A., J. D. Liefer, W. L. Smith, **K. Park** and **H. L. MacIntyre.** 2008. Seasonal variation in nutrients and microalgal community composition in Mobile Bay, Alabama, and the northern Gulf of Mexico. Phycological Society of America Meeting, New Orleans, LA, July 27-30.
- Gutierrez, R. L. and **K. L. Heck, Jr.** 2008. The effect of increased nutrients via bird guano on seagrass macro-infauna communities. Benthic Ecology Meeting, Providence, RI. April.
- Hartzell, K., E. A. Goldman, J. D. Liefer and **H. L. MacIntyre.** 2008. GIS-based analysis of nutrients and microalgal biomass in Little Lagoon, Alabama, a poorly-flushed coastal lagoon. Ocean Sciences Meeting, Orlando, FL, March 2-7.
- Heck, K. L., Jr.**, **J. Cebrian**, **S. P. Powers**, K. Major, D.A. Byron, R. Plutchak and N. Gerald. 2007. Ecosystem Services Provided by Oyster Reefs: an Experimental Assessment. 19th Biennial Conference

of the Estuarine Research Federation, Providence, RI, November 4-8.

Herrmann, M., R. Najjar, K. McElroy, A. Neeley, M. Vila-Costa, G. Westby, J. Dacey, G. DiTullio, D. Kieber, **R. Kiene**, P. Matrai, R. Simó, M. Vernet. 2008. DMS production at two coastal sites west of the Antarctic Peninsula. Ocean Sciences Meeting, Orlando, FL, March.

Holiday, D., G. Carter, R. Gould and **H. L. MacIntyre**. 2008. Harmful algal blooms in the northern Gulf of Mexico: using MODIS AQUA and in situ data towards HABs prediction in turbid coastal waters. Ocean Sciences Meeting, Orlando, FL, March 2-7.

Johnson, M. W. and **S. P. Powers**. 2008. Evaluating potential impacts of red snapper (*Lutjanus campechanus*) on recruitment of vermilion snapper (*Rhomboplites aurorubens*): project overview and summary. Alabama Fisheries Association Meeting, Perdido Beach, AL, February 15-16.

Johnson, M. W. and **S. P. Powers**. 2008. Utilization of restored reefs by juvenile fishes: How do community profile, species richness, and abundances compare to seagrass and unstructured habitats. Benthic Ecology Meeting, Providence, RI, April 9-13.

Kieber, D. J., C. E. Spiess, D. A. del Valle and **R. P. Kiene**. 2008. Importance of Dimethylsulfoxide in the Marine Sulfur Cycle. IGBP Congress, South Africa, May.

Kim, C.K., **K. Park** and **S. P. Powers**. 2008. Transport of oyster larvae in response to tide, river and wind in Mobile Bay and the adjacent eastern Mississippi Sound, AL. Pp. 26. In: Abstracts for the 2008 Gulf of Mexico Graduate Student Symposium, LUMCON, Chauvin, LA, Feb 22-24.

Kim, C.K., **K. Park** and **S. P. Powers**. 2008. Transport of oyster larvae in response to tide, river and wind conditions in Mobile Bay and the adjacent eastern Mississippi Sound, AL. Pp. 119. In: Abstracts for the 100th Annual National Shellfisheries (NAS) Association Meeting, Providence, RI, Apr 6-10.

Liefer, J. D., W. L. Smith, C. P. Dorsey and **H. L. MacIntyre**. 2008. Spatial and temporal variability in abundance of the diatom *Pseudo-nitzschia* sp. in coastal Alabama waters. Ocean Sciences Meeting, Orlando, FL, March 2-7.

Liefer, J. D., W. L. Smith, C. P. Dorsey and **H. L. MacIntyre**. 2008. Spatial and temporal variability in abundance of the diatom *Pseudo-nitzschia* sp. in coastal Alabama waters. Phycological Society of America Meeting, New Orleans, LA, July 27-30.

**MacIntyre, H. L.** 2008. HABs in Little Lagoon: what we know so far", Little Lagoon Preservation Society Quarterly Meeting, Jan 22.

**MacIntyre, H. L.**, A. Stutes and R. Cox. 2008. Fluorescence excitation and emission signatures as a means for rapid taxonomic classification of microalgae. Ocean Sciences Meeting, Orlando, FL, March 2-7.

**MacIntyre, H. L.** 2008. Harmful algal blooms and fish kills. Weeks Bay National Estuarine Research Reserve, March 13.

**MacIntyre, H. L.**, M. Babin, A. Gelay, E. Goldman, Y. Huot, A. Sciandra and T. Sherman. 2008. "Photosynthetic response of the toxic raphidophyte *Heterosigma akashiwo* during the imposition of, and recovery from, light- and nutrient stress". Phycological Society of America Meeting, New Orleans, LA, July 27-30.

**MacIntyre, H. L.** 2008. Groundwater and HABs in Little Lagoon: a proposed collaboration between DISL, FSU and LLPS. Little Lagoon Preservation Society Quarterly Meeting, Jul 1.

**MacIntyre, H.L.** Groundwater, nutrients and harmful algal blooms. Baldwin County Environmental Advisory Board, Aug 20.

Madsen, S. L., **S. P. Powers** and F. J. Fodrie. 2008. Behaviorally mediated indirect interactions increase predation in a multiple prey assemblage. Benthic Ecology Meeting, Providence, RI. April 10-12.

Magalhães C., **R. P. Kiene**, A. Machado, C. Teixeira, and A.A. Bordalo. 2008. Inhibitory effects of DMSP degradation products on denitrification in coastal marine sediments and a bacterial culture. International Symposium on Microbial Ecology-12.

Martin, C. W., **J. F. Valentine**, K. Blankenhorn and S. Sklenar. 2008. The Invasion of Eurasian Milfoil in Mobile Bay: does a reduction in disturbance frequency facilitate invasion success? Benthic Ecology Meetings, Providence RI.

Miller, G. A. and **S. P. Powers**. 2008. A mid trophic level look at the species-area relationship and species-abundance distributions using barrier island salt ponds. Benthic Ecology Meeting, Providence, RI. April 10-12.

Murdoch, T. and **R. Aronson**. Testing a novel functional group approach for Caribbean hard corals. Eleventh International Coral Reef Symposium, Fort Lauderdale, FL (2008)

Myers, R. A., J. K. Baum, T. D. Shepherd, **S. P. Powers** and C. H. Peterson. 2008. Are there cascading ecosystem effects of depleting the oceans' great sharks? American Elasmobranch Society Annual Meeting. Montreal, Canada. July 23-28.

Novoveská, L., W. L. Smith, C. P. Dorsey and **H. L. MacIntyre**. 2007. Seasonal and inter-annual changes in dinoagellate community composition in nearshore Alabama waters. 4th US HAB Symposium, Woods Hole, MA, October 29-November 1.

Novoveská, L., W. L. Smith, C. P. Dorsey and **H. L. MacIntyre**. 2007. Seasonal and inter-annual changes in dinoagellates community composition in nearshore Alabama waters. Southeastern Phycological Colloquy, Dauphin Island, AL, October 26-27.

Novoveská, L., W. L. Smith, A. R. Place and **H. L. MacIntyre**. 2008. Abundance and toxicity of a *Karlodinium venetum* bloom in the Weeks Bay National Estuarine Research Reserve. Ocean Sciences Meeting, Orlando, FL, March 2-7.

Novoveská, L., W.L. Smith, A.R. Place and **H. L. MacIntyre**. 2008. Abundance and toxicity of a *Karlodinium venetum* bloom in the Weeks Bay National Estuarine Research Reserve. Phycological Society of America Meeting, New Orleans, LA, July 27-30.

**Park K.** 2008. Mass transport mechanism in Kyunggi Bay around Han River mouth, Korea. The 2008 Ocean Sciences Meeting, Orange County Convention Center, FL, Mar 2-7.

**Park, K.**, J.H. Oh, H.S. Kim and H.H. Im. 2008. Mass transport mechanism in Kyunggi Bay around Han River mouth, Korea. Pp. 347. In: Meeting Abstracts for 2008 Ocean Sciences Meeting, Orange County Convention Center, FL, Mar 2-7.

**Park, K.**, H.V. Wang, S.C. Kim and J.H. Oh. 2008. A modeling study of the estuarine turbidity maximum along the main channel of the upper Chesapeake Bay, USA. Pp. 575-576. In: Abstracts for the 8th International Conference on Hydro-Science and Engineering, Nagoya, Japan, Sep 9-12.

**Park K.** 2008. A modeling study of the estuarine turbidity maximum along the main channel of the upper Chesapeake Bay, USA. The 8th International Conference on Hydro-Science and Engineering, Nagoya, Japan, Sep 9-12.

**Powers, S. P.** and **M. Benfield**. 2007. Response of Fishes and Mobile Invertebrates to Benthic Habitat Degradation Resulting from Hurricane Landfall. 19th Biennial Conference of the Estuarine Research Federation, Providence, RI, November 4-8.

**Powers, S. P.**, B. F. Reynolds and M. A. Bishop. 2008. Artificial reefs as restoration tools for Alaska's coastal waters. Alaska Marine Science Symposium, Anchorage, Alaska, January 20-23.

Precht, W. F., **R. B. Aronson**, K. J. P. Deslarzes, L. S. Kaufman, M. L. Robbart, E. L. Hickerson, G. P. Schmahl and J. Sinclair. 2008. Science Forum on the Gulf of Mexico Initiative: Islands in the Stream; Long-term monitoring at the Flower Garden Banks: Status, stasis and change.

Precht, W., K. Deslarzes, E. Hickerson, G. P. Schmahl, J. Sinclair and **R. Aronson**. Holocene reef development at the Flower Garden Banks: recent surprises. Eleventh International Coral Reef Symposium, Fort Lauderdale, FL (2008)

Robbart, M., **R. Aronson**, W. Precht and K. Deslarzes. Impact of Hurricane Rita on four shallow banks in the northern Gulf of Mexico (poster). Eleventh International Coral Reef Symposium, Fort Lauderdale, FL (2008)

Scyphers S., **S. P. Powers**, **K.L. Heck Jr.** and C. Steeves. 2007. Restoring Estuarine Landscapes in Coastal Alabama Through Creation of Oyster Reefs. NGL Mobile Bay Collaborative Meeting. Dauphin Island, AL, November 4.

Scyphers, S., **S. P. Powers**, **K. L. Heck Jr.** and C. Steeves. 2008. Shoreline Stabilization and Fisheries Benefits of Oyster Reef Restoration in Coastal Alabama. 100th Annual National Shellfisheries Association Meeting, Providence, RI. April 6-10.

Sheehan, K. L., **J. Cebrian** and J. O'Brien. 2008. Distribution of parasite assemblages of grass shrimp in Mobile Bay. Southeastern Ecology and Evolution Conference. Tallahassee, FL.

Sheehan, K. L., J. O'Brien and **J. Cebrian**. Spatial and seasonal patterns of parasite assemblages of grass shrimp in Mobile Bay, AL. 2008. Graduate Student Symposium, LUMCON, Chauvin, LA.

Sheehan, K. L., J. O'Brien and **J. Cebrian**. Spatial and seasonal patterns of parasite assemblages of grass shrimp in Mobile Bay, AL. 2008 University of South Alabama Research Forum, Mobile, AL.

Sheehan, K. L., J. O'Brien and **J. Cebrian**. 2008. Parasite Assemblages of the Common Grass Shrimp Along the Alabama Gulf Coast: Seasonal Distribution and Use as an Environmental Indicator. Symposium of the American Society of Parasitologists. Arlington, TX.

Sheehan, K. L., **J. Cebrian**, **J. Valentine** and J. O'Brien. 2008. Spatial and seasonal variability of parasite assemblages of the common grass shrimp in Mobile Bay. 2008 Association of Southeastern Biologists/Association of Southeastern Parasitologists. Spartanburg, SC.

Smith, S. R., **R. Aronson** and J. Ogden. Continuing decline of *Montastraea* populations on protected and unprotected reefs in the Florida Keys National Marine Sanctuary. Eleventh International Coral Reef Symposium, Fort Lauderdale, FL (2008)

Spiese, C. E., D. J. Kieber, D. A. del Valle and **R. P. Kiene**. 2008. Importance of Dimethylsulfoxide in the Marine Sulfur Cycle. ACS Regional Meeting (NERM) (June 29 - July 2).

Spiese, C.E., D. J. Kieber, C. T. Nomura and **R. P. Kiene**. 2008. Reduction of dimethyl sulfoxide by marine phytoplankton. Ocean Sciences Meeting, Orlando, FL, March.

Steeves, C., **K. L. Heck Jr.**, **S. P. Powers** and S. Scyphers. 2008. The effects of breakwater oyster reefs on coastal ecosystems in the Northern Gulf of Mexico. Benthic Ecology Meeting, Providence, RI. April 9-13.

Stutes, J. P. and **J. Cebrian**. 2008. Reassessment of the Effects of Grazing and Nutrient Enrichment on Epiphyte Biomass and Productivity: Implications for Grazing Rate Calculations. 31st Annual Pacific Estuarine Research Society meeting, Newport, OR, February 28 -March 1.

Thorn, K., R. Cox, **K. Park** and M. Misra. 2007. Real-time predictions of water height in Dauphin Island by use of wavelet-partial least squares model. In: Abstracts for the 2007 Annual Meeting for AIChE (American Institute of Chemical Engineers), Salt Palace Convention, Salt Lake City, UT, Nov 4-9.

Toth, L. T., **R. B. Aronson**, S. R. Smith, T. J. T. Murdoch and S. A. Lewis. No-take reserves and the benthic assemblages of Florida's coral reefs. Eleventh International Coral Reef Symposium, Fort Lauderdale, FL (2008)

Williams, S. Y., **F. J. Fodrie**, **K. L. Heck, Jr.**, and **S. P. Powers**. 2008. Nursery origins of adult snapper from the northern Gulf of Mexico: Onshore-offshore connectivity of reef fishes and contribution of seagrass meadows to fishery production. ASLO, Orlando, Florida. March 2-7.

## Offices, Boards & Panels

### Rich Aronson

- International Society for Reef Studies, President (2006-10)
- Ecology and Ecological Monographs; Member of Editorial Board (2007-present).
- World Bank Working Group on Diseases of Coral Reef Organisms; Member of Advisory Board (2002-present).
- Journal of Experimental Marine Biology and Ecology; Member of Editorial Advisory Board (1997-present).

### Ruth Carmichael

- Advisor, Ecological Research Development Group, Lewes, DE, 2007-present

### Just Cebrian

- Contributing Editor for Marine Ecology Progress Series (2007-present)
- Member of the Editorial Board of the new journal "The Open Oceanography Journal", an online peer reviewed journal published by Bentham Publishers (2007-present)
- Member of the Editorial Board of the new journal "The Open Marine Biology Journal", an online peer reviewed journal published by Bentham Publishers (2007-present)
- Staff Referee for Aquatic Botany (2004-present)
- Member of the Expert Panel for the periodical evaluation of the performance of the Gulf Breeze EPA laboratory (2007-present)
- Member of evaluation committee for promotion of Dr. Jim Hagy from the EPA Gulf Breeze Laboratory (Florida) 2008
- Presentation for an in-situ visit of an evaluation panel for the construction of a new building at the Grand Bay NERR; I also participated in meetings with a NOAA panel for the evaluation of the performance of the Grand Bay NERRS. November/December 2007.

### Monty Graham

- Editor, Gulf of Mexico Science (2006 – present)
- Review and Recommendations to Governor Riley on “Recommended baseline and operational monitoring plan for the TORP Bienville Offshore Energy Terminal (BOET) project” with ADCNR/MRD, USA Marine Sciences and DISL/FOCAL, 2008

### Ken Heck

- Director, Alabama Center for Estuarine Studies
- Director, Shelby Center for Ecosystem-based Fisheries Management
- Gulf of Mexico Fishery Management Council: Coral Advisory Panel
- Mobile Bay National Estuary Program: Scientific Advisory Panel
- Contributing Editor: Marine Ecology Progress Series
- Tenure and Promotion reviews for: University of Virginia, Edith Cowan University (Australia)
- PhD Examiner for: Flinders University (Australia), Murdoch University (Australia)

### Frank Hernandez

- LNG-BMP Advisory Panel, 2008-present
- FOCAL (coordinator and supervisor of field and lab research), 2006-present
- U.S. - Poland Joint Studies Advisory Committee, 2005 - present

### Ron Kiene

- Marine Chemistry, Associate Editor (January, 1996 – present)
- Marine Ecology-Progress Series, Contributing Editor (January, 2008-present)
- External Examiner, Ph.D. Thesis, Tess Vance, Southern Cross University, Australia, June, 2007. Re-examined in 2008.

### Hugh MacIntyre

- Editor, Aquatic Microbial Ecology
- NGI/NASA Mobile Bay Collaboration, Member of the Advisory Panel on Ecosystem Response Tools.
- Scientific Advisory Member, Gulf of Mexico Coastal Ocean Observing System (GCOOS) Task Team on Public Health.

### Kyeong Park

- Advisor, GeoSystem Research Co., Korea
- Member, Advisory Committee, Korea Maritime Institute, Korea

### Sean Powers

- Associate Director, Alabama Oyster Reef Restoration Program, 2003-present.
- Associate Editor, Gulf of Mexico Science, 2004 – present

- Minerals Management Service via Continental Shelf Associates, External review committee member, Deepwater Program: “Synthetic-based fluid spill of opportunity – Environmental impact and Recovery, 2008
- Continental Shelf Associates, Habitat Suitability Analysis for Artificial Reef to mitigate natural reef damages in West Palm Beach. FL. 2007-2008.

### John Valentine

- Education and Research Traineeship Program Panelist (IGERT), 2007
- Marine Ecology Progress Series Review Editor, 2006-present
- Member Mobile Bay NEP Executive Committee Board Member, 2007
- Co-Chair Mobile Bay NEP Scientific Advisory Committee, 2007

### Meetings/Sessions Organized, Chaired, Convened

#### Rich Aronson

- American Association for the Advancement of Science Annual Meeting, Boston, MA (2008); organizer of symposium, Under Thin Ice: Global Warming and Predatory Invasion of the Antarctic Seas.

#### Ruth Carmichael

- Conference Workshops Chair. ERF/CERF Biennial Conference, 2006-present
- Alabama Fisheries Association Annual meeting, Session Moderator, 2008-2009

#### Just Cebrian

- Organizer and chair of special session: “Large Scale Natural Events” 19th Biennial Conference of the Estuarine Research Federation, Providence (Rhode Island), 4-8 November, 2007
- The 8th International Seagrass Biology Workshop, moderator of Oral Session #7 “The role of nutrients in seagrass beds; when is enough enough?” Bamfield, Canada, August 31-September 5, 2008

#### Ken Heck

- International Seagrass Biology (ISBW8) Workshop Coordinator

#### Ron Kiene

- Co-organizer (with Gillian Malin and Maurice Levasseur), special session, The biology, chemistry and ecology dimethyl sulphide and related compounds, for ASLO meeting in Nice, France, January 2009.

#### Hugh MacIntyre

- Member of the Advisory Panel leading the Data Coordination and Sharing Workshop, NGI annual meeting (Biloxi, MS, 4/13-14/2008).

### Kyeong Park

- The 8th International Conference on Hydro-Science and Engineering (ICHE08), Sep 9-12, 2008, Nagoya Univ., Nagoya, Japan, Organized by IAHR (International Association of Hydraulic Engineering and Research); Convened a session, entitled “Coastal Engineering

### Awards

#### Ken Heck

- Visiting Research Fellowship, Edith Cowan University, Western Australia, January - February, 2008.
- Adjunct Professor, School of Plant Science, University of Western Australia, Perth, WA- 2008-2011.

### Grants Active During Review Period

#### Rich Aronson

- NOAA Coral Reef Conservation Program (2007-09); Coral reef benthic community responses to 10 years of management in the Fully Protected Zones of the Florida Keys. Principal Investigator of collaborative research project with Florida Institute of Oceanography. Total grants: \$100,000 (2007-08); \$148,000 (2008-09); Aronson subcontracts: \$34,300 (2007-08); \$59,822 (2008-09); Aronson total \$95,122.
- Alabama Department of Conservation and Natural Resources (ADCNR), State Lands Division, Coastal Section (2008-11); Dauphin Island Sea Lab Fish and Shellfish Nursery Habitat Restoration and Monitoring Project. Co-Principal Investigator with Just Cebrian, Ken Heck and Sean Powers. \$1,500,000.
- Mobile Bay National Estuary Program (2008-09); Developing salt-marsh restoration strategies to optimize habitat use by the blue crab, *Callinectes sapidus*. Principal Investigator. \$49,813.
- Smithsonian Institution Marine Sciences Network (2007-09); Climate changes, species turnover, and the geological development of coral reefs. Co-Principal Investigator with Ian G. MacIntyre. \$25,000.
- EPA Alabama Center for Estuarine Studies (2007-08); Budget Supplement: Impacts of salt-marsh restoration on ecosystem function and export to estuarine environments. Principal Investigator. \$35,421.
- Alabama Department of Conservation and Natural Resources (ADCNR), State Lands Division, Coastal Section (2006-08); Trophic dynamics of a created salt marsh in coastal Alabama, Phases II and III. Principal Investigator. \$49,000.
- EPA Alabama Center for Estuarine Studies (2006-08); Impacts of salt-

marsh restoration on ecosystem function and export to estuarine environments. Principal Investigator. \$152,019.

#### Ruth Carmichael

- NOAA/NCDDC, Development and integration of metadata and research data retention at Dauphin Island Sea Lab, 2008
- MS-AL Sea Grant Consortium, Collaborator: Assessment of depredation by bottlenose dolphins in the Northwest Florida and Alabama sport fishery, 2008
- Alabama Division of Wildlife and Freshwater Fisheries, Use of telemetry and GPS to monitor West Indian manatee movements in Alabama waters, 2008
- Mobile Bay National Estuary Program, Study of the West Indian manatee population in Mobile Bay, AL: A model for conservation management by integration of research and public outreach, 2008
- MS-AL Sea Grant Consortium, Use of stable isotope ratios to link wastewater sources to effects on shellfish and human health: Defining relevant and effective spatial and temporal scales for management, 2007
- Alabama Oyster Reef Restoration Program, Univ. of South Alabama, Effects of N enrichment on oyster growth and survival via changes in food supply and habitat in Mobile Bay, AL, 2007
- NOAA/NCDDC, Development and integration of metadata and research data retention at Dauphin Island Sea Lab, 2007
- Alabama Division of Wildlife and Freshwater Fisheries, A pilot study of the extralimital West Indian Manatee population in Mobile Bay, AL, 2007

#### Just Cebrian

- FBBVA (Fundacion del Banco Bilbao Vizcaya Argentaria, "Bank of Bilbao-Vizcaya-Argentaria Foundation"): "Conservación de Praderas Submarinas: Causas de la regresión y efectos sobre las Funciones en el Ecosistema (Seagrass conservation: causes for seagrass decline and effects on ecosystem functioning)" \$125,000; period 03/05-02/08; co-PI with C. M. Duarte, N. Marba, E. Gacia, Luis Navarro, Adan Zunyiga and Esther Serrao.
- Mobile Bay National Estuarine Program/ Alabama Department of Coastal and Natural Resources: "Submerged Aquatic Vegetation Gardening in Little Lagoon, Alabama" \$40,000 06/07-12/08 (single PI)
- MASGC (NOAA): "Evaluating the role of restored black needlerush

marsh (*Juncus roemerianus*) as a buffer of anthropogenic eutrophication of coastal systems: an isotope enrichment approach" \$300,307 03/06-02/08 (PI with co-PI Craig Tobias).

- Northern Gulf Institute and National Coastal Data Development Center" Long-term ecological studies in coastal lagoons of Perdido Bay" \$78,000, 05/08-04/09 (single PI)
- The Alabama Department of Conservation and Natural Resources "Finfish and Shellfish Nursery Habitat Restoration Project" \$1,500,000.00, 07/08-06/11 (PI with K. Heck, S. Powers and R. Aronson as co-PI's)
- Environmental Protection Agency GOMA "Development of a Decision-Support Tool to Assess the Risk of Habitat Degradation Following Watershed Land Use Changes" \$350,000, 01/09-12/10 (co-PI with David Ruppel and Mark Woodrey)
- Northern Gulf Institute "Development of Integrated Ecosystem Assessment Strategies" \$150,000, 12/08-11/09 (co-PI with Mike Carron and Robert Twilley)

#### Monty Graham

- National Science Foundation (INT) International: Developing an Adriatic Summer Institute for Marine Environmental Complexity. \$43,428, 2004-2006.
- Development of a molecular genetic method to quantify *Crassostrea virginica* veliger larvae in Mobile Bay and eastern Mississippi Sound. \$154,421, 2005-2007.
- Alabama Department of Conservation and Natural Resources, Marine Resources Division. Fisheries Oceanography in Coastal Alabama (FOCAL). \$3,026,000 (\$742,062 to PI Graham), 2006-2009.
- NOAA/National Marine Fisheries Service, MARFIN. Sources and fate of snapper (*Lutjanidae*) early life history stages in Alabama shelf waters: temporal and spatial occurrence of red snapper (*Lutjanus campechanus*) and vermilion snapper (*Rhomoplites aurorubens*) eggs and larvae. \$361,465 (\$180,732 to PI Graham), 2007-2009.
- NOAA/National Marine Fisheries Service, Shelby Center for Ecosystem-Based Fisheries Management. Fisheries Oceanography Core Studies. \$148,600 to co-PI Graham, 2008-2010.

#### Ken Heck

- US Department of Commerce, NOAA (USA Habitat Restoration Program) - Restoring estuarine Landscapes in

Alabama through creation of oyster reefs, 2007-2008, \$165K, Heck and Powers, PIs

- US Department of Commerce, NOAA (Northern Gulf Institute) - Restoring estuarine Landscapes in Alabama through creation of oyster reefs, 2007-2009, \$366K, Heck PI
- US Department of Commerce, NOAA (MARFIN) - Nursery origins of adult gag grouper, gray snapper, and lane snapper from the northern Gulf of Mexico: onshore-offshore connectivity of reef fishes and contribution of seagrass meadows to fishery production 2006-2008, \$188K, Heck, Powers and Fodrie, PIs
- US EPA, Alabama Center for Estuarine Studies - Understanding Human Modifications of Coastal Waters, 2008-2009, Administration, \$155K, Heck PI
- USFWS - Restoring turtlegrass (*Thalassia testudinum*) meadows after propeller damage using bird roosts as a passive fertilizer delivery system along the Northern Gulf Coast, 2008-2009, \$25K, Heck, Kenworthy and Byron, PIs
- Nature Conservancy- Living Shorelines Demonstration Project at Helen Wood Park, 2008-2009, \$75K, PIs Heck and Powers.
- ADCNR (State Lands Division)-DISL Finfish and shellfish nursery habitat restoration project, \$1.5M, 2008-2011, Cebrian, Aronson, Heck and Powers, PIs

#### Frank Hernandez

- NOAA MARFIN (2007-2009): Sources and fate of snapper (*Lutjanidae*) early life stages in Alabama shelf waters: temporal and spatial occurrence of red snapper (*Lutjanus campechanus*) and vermilion snapper (*Rhomoplites aurorubens*). S. Powers, F. Hernandez, W.M. Graham and K.M. Bayha. \$287,650.
- ADCNR (2007-2009): Fisheries Oceanography of Coastal Alabama (FOCAL). Among multiple DISL co-PIs. \$3,000,000.

#### Ron Kiene

- National Science Foundation - Environmental Genomics. A functional genomics approach to organic sulfur cycling in the ocean. \$356,427, sub-contract from Univ. Georgia, under grant to Mary Ann Moran. 3 years. January 1, 2008-December 31, 2010.
- National Science Foundation - Microbial genetics. Bacterial Regulation of Organic Sulfur Cycling in the Ocean: A Genomic Approach. \$48,588, sub-contract from Univ. Georgia, under grant to Mary Ann

Moran. 4 years. May 1, 2004 April 30, 2008.

- National Science Foundation – Polar Programs-Antarctic Biology and Medicine. Impact of solar radiation and nutrients on biogeochemical cycling of DMS and DMS in the Ross Sea, Antarctica. \$316,556, 3 years. April 1, 2003 March 31, 2006. No Cost Extension through March 2008. Supplemental funding for \$47,366 (June 2005) for a total of \$363,922. Data disposition: [http://gcmd.gsfc.nasa.gov/getdif.htm?NBPalmer\\_Transect\\_and\\_Ross\\_Sea\\_Sulfur\\_Data](http://gcmd.gsfc.nasa.gov/getdif.htm?NBPalmer_Transect_and_Ross_Sea_Sulfur_Data) National Science Foundation – Biocomplexity in the Environment. Complex molecular to global interactions and feedbacks in the marine DMS cycle. Sub-contract through Bigelow Laboratory. USA portion \$349,780, 4 years. January 1, 2003 December 31, 2006. In No-cost extension through Dec. 31, 2007.

#### Hugh MacIntyre

- Improved Characterization of Microalgal Abundance and Taxonomic Status through Laser-Induced Fluorescence (LIF), NOAA Cooperative Institute for Coastal and Estuarine Environmental Technology (CICEET) \$270,274. 9/1/06 – 8/31/08
- Impact of Human Activity on Microalgal Populations in Mobile Bay: Insights from Recent Palaeosediments, ACES \$83,926. 9/1/06 – 8/31/08
- A Volunteer Phytoplankton Monitoring Network, NCDDC/NGI \$14,000. 7/1/07 – 6/30/08
- Fisheries Oceanography of Coastal Alabama, ADCNR \$161,000. 9/1/06 – 8/31/09
- Benthic-Pelagic Coupling: Microalgal Transfer of Mercury from Contaminated Sediments, NOAA NERR Graduate Fellowship \$19,163. 6/1/07 – 5/31/09
- Water Quality Analysis in Support of State and Volunteer Monitoring of Harmful Algal Blooms, ADCNR \$20,000. 11/1/07 – 10/31/08
- Potential anthropogenic triggers for toxicity in the Harmful Algal Bloom diatom *Pseudo-nitzschia* sp. in Little Lagoon, Alabama, ACES \$28,941. 10/1/07 – 9/30/08

#### Behzad Mortazavi

- NSF-Polar Programs: Collaborative Research. Gas exchange of Arctic plants-resolving winter carbon and water balance of Arctic tundra ecosystems. Co-PI with Greg Starr (PI at UA) and Steve Oberbauer (Florida International Univ.). UA share \$714,419. 8/1/08 – 7/30/11
- DOE SBIR-Los Gatos: Isotope analyzer for real-time measurements in the field. PI. \$50,555. 9/1/08 – 8/30/10.

- UA-Research grants committee: Nitrogen cycling in Weeks Bay; an estuary impacted by harmful algal blooms. \$5000. 05/01/08 – 04/30/10.
- USC-Marine Field Laboratory. Visiting Scientist-Nitrogen cycling in North Inlet marsh ecosystem. \$2500. 07/28/08 – 08/15/08.

#### Kyeong Park

- K. Park (PI), “FOCAL (Fisheries Oceanography in Coastal Alabama) - Physical” (10/01/2006-09/30/2009), Marine Resources Division, ADCNR, \$285,000.
- S.P. Powers (PI), K. Park (Co-PI), and M. Johnson (Co-PI), “Addressing challenges to oyster reef restoration in Mobile Bay” (05/01/2007-04/30/2010), Alabama Oyster Reef Restoration Program, NMFS, NOAA, \$415,587.
- A.M. Shiller (PI at USM), J.M. Krest (PI at USF), and K. Park (PI), “Collaborative research: Tracer distributions, chemical fluxes, and tributary comparisons in the mixing zone of the Mississippi River (OCE-0728775)” (08/01/2007-07/31/2010), Division of Ocean Sciences, NSF, \$86,593 (individual budget).
- K. Park (PI) and C.-K. Kim, “Oyster larval transport in Mobile Bay and adjacent Eastern Mississippi Sound: Modeling study and field observation” (09/01/2005-08/31/2008), Alabama Oyster Reef Restoration Program, NMFS, NOAA, \$226,304

#### Sean Powers

- Tracking Movements of Lingcod *Ophiodon elongatus* in Prince William Sound Using Acoustic Tags and Arrays: Expanding PWSSC Partnerships, Infrastructure and Capacity. (M. A. Bishop and S.P. Powers, PI's). Prince William Sound Oil Spill Recovery Institute and the Pacific Ocean Shelf Tracking Network (POST). \$155,000 (\$40,000 U. South Al. component). 2008-2010.
- Dauphin Island Sea Lab in-sh and shellfish nursery habitat restoration and monitoring project. (J. Cebrian, R. Aronson, K. Heck, and S. Powers, PI's). Alabama Department of Conservation and Natural Resources, \$1,500,000. Submitted through DISL. 2008-2011.
- Age distribution and abundance estimates of adult red drum (*Sciaenops ocellatus*) in offshore waters of the north-central Gulf of Mexico. NOAA/NMFS Marine Fisheries Initiative (MARFIN), (S.P. Powers and M.W. Johnson, PI's). \$198,026. 2008-2010.
- Nursery origins of adult gag grouper, gray snapper, and lane snapper from the northern Gulf of Mexico: onshore-offshore connectivity of reef fishes and contribution of seagrass meadows

to fishery production. NOAA/NMFS Marine Fisheries Initiative (MARFIN), (K. Heck, S.P. Powers and F. J. Fodrie, PI's). \$180,000. Submitted through DISL. 2008-2011.

- Using stable isotopes to explore trophic connectivity in sharks in the northern Gulf of Mexico. Alabama/ Mississippi Sea Grant Program. (S. Powers and M. Drymon, PI's). \$9,920 (USA). 2008-2009.
- Addressing challenges to oyster reef restoration in Mobile Bay (S. Powers, K. Park, and M. Johnson, PI's). National Marine Fisheries Service via USA Oyster Reef and Fisheries Habitat Enhancement Program. \$365,700. (USA) 2007-2010.
- Ecology of barrier island salt ponds in coastal Alabama (S. Powers and G. Miller, PI's). U.S. Environmental Protection Agency via the Alabama Center for Estuarine Studies (ACES). \$48,200. (USA) 2007-2009.
- Sources and fate of snapper (*Lutjanidae*) early life history stages in Alabama shelf waters: Temporal and spatial occurrence of red snapper (*Lutjanus campechanus*) and vermilion snapper (*Rhomboplites aurorubens*) eggs and larvae (S. Powers, W. Graham, F. Hernandez and K. Bayha, PI's). National Marine Fisheries Service, MARFIN. \$281,465. (Awarded to DISL). 2007-2009.
- Fisheries Oceanography of Coastal Alabama-FOCAL (M. Graham, S. Powers, F. Hernandez, K. Heck and K. Park, PI's). Alabama Department of Conservation and Natural Resources, \$3,000,000. (\$1,200,000 US component, DISL). 2006-2010.
- Estimating the relative importance of northern Gulf nursery habitats to adult fish populations: studies of gray snapper (*Lutjanus griseus*) and gag grouper (*Mycteroperca microlepis*) (K. Heck, S. Powers and F. Fodrie, PI's). National Marine Fisheries Service via USA Oyster Reef and Fisheries Habitat Program. \$380,000. (DISL) 2006-2009.
- Alabama oyster reef and fisheries habitat enhancement program (R. Shipp and S.P. Powers). National Marine Fisheries Service, \$2,403,000. (USA) 2006-2009.
- Nearshore survey of coastal elasmobranchs (S. Powers and J. Dindo, PI's). Vessel and Personnel support. National Marine Fisheries Service, Mississippi Lab. (DISL) 2006-2009.
- Residency and Movements of Copper Rockfish *Sebastes caurinus* and Lingcod *Ophiodon elongatus* in Nearshore Areas of Prince William Sound (S. Powers and M. A. Bishop, PI's) North Pacific Research Board, \$125,000 (\$45,000 USA Component). 2007-2008.

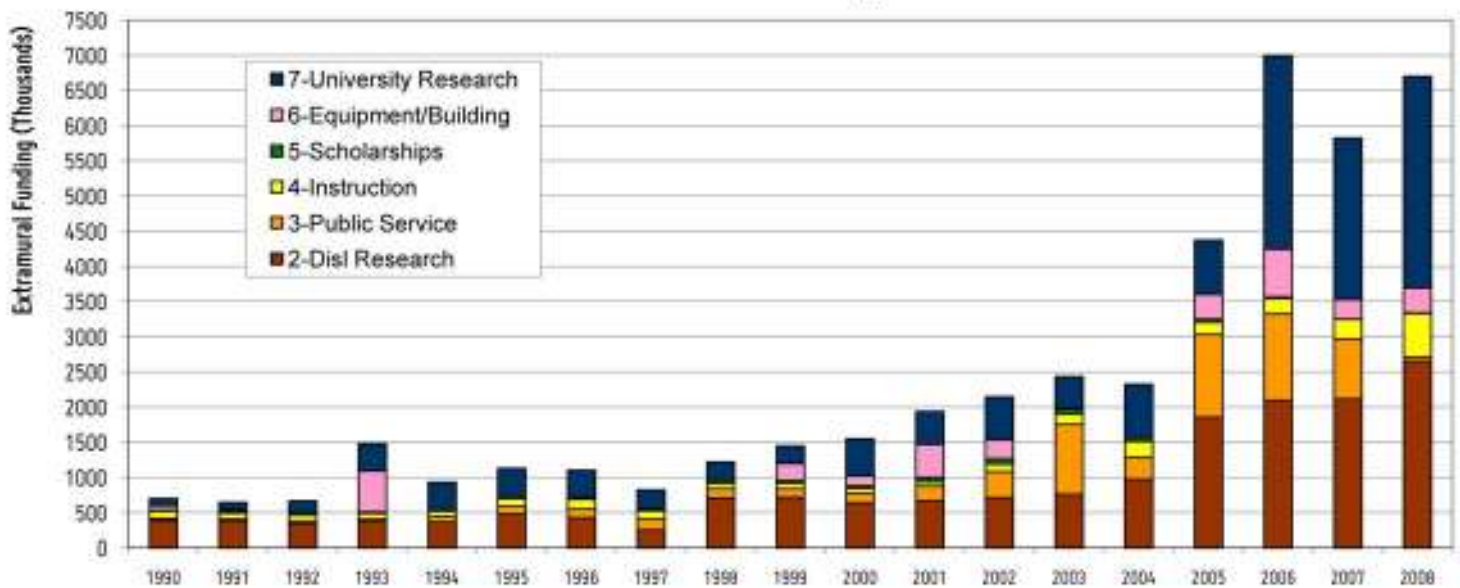
- Evaluating species interactions in reef fish communities: the potential impact of red snapper, *Lutjanus campechanus*, on recruitment of vermillion snapper, *Rhomboplites aurorubens* (K. Heck and M. Johnson, PI's). National Marine Fisheries Service MARFIN, \$192,338. 2005-2008.
- Assessing trophic linkages between platforms and pelagic fishes using ultrasonic telemetry and active acoustics. Minerals Management Service, LSU Coastal Marine Institute. (M. Benfield and S.P. Powers, PI's). \$260,000 (\$50,000 USA). 2004-2008.

**John Valentine**

- Northern Gulf Institute. Supplemental funding to re-establish the Marine Scholars Program at DISL.
- NOAA-NURC. Marine Reserve Effectiveness in Restoring Coastal Food Webs: A Multitrophic Assessment Using Special Protection Areas in the Florida Keys National Marine Sanctuary. \$64,199. CO-PI, with D. Blackmon, K. Heck, and B. Peterson.
- Alabama Center for Estuarine Research. Invasion Ecology: Effects of Habitat Alteration on the Survival of an Exotic Species. Funded 2006-2007, estimated \$155,000 (Co-PI with D. Blackmon).

- NOAA-CIAP. Assessments of Hurricane Katrina Impacts on the lower Mobile-Tensaw Delta. \$150,000 for one year. 2007-2008
- Northern Gulf Institute. Supplemental funding to support undergraduate intern and graduate student fellowships at Dauphin Island Sea Lab. \$100,000.

**Extramural Funding**





- **Board of Directors**
- **Executive Committee**
- **Program Committee**

The Board of Directors is comprised of the Presidents of each of the 21 member institutions.

The Executive Committee has full power and authority in the interval between meetings of the Board of Directors to do all acts and perform all functions which the Board of Directors itself might do or perform, except that it shall have no power to amend the bylaws. Among its duties are to review and approve the annual budget; approve curricular options and other major policies and procedures; and facilitate and stimulate the development of education and research programs.

The Program Committee Members consists of one faculty member, appointed by the President, from each of the member institutions. These members serve as the primary liaison between the member institution and the Sea Lab, and are responsible for advising the Sea Lab's Executive Director in planning and implementing the education, research and service programs of the DISL. The Program Committee Members listed here are for the time at print; those who served at the reporting time of 2007 are so noted.

\*\*Schools with Graduate Programs

\*\***Alabama State University**  
President: Dr. Joe A. Lee  
Program Committee: Dr. B.K. Robertson

brobertson@asunet.alasu.edu  
Department of Biological Sciences  
915 S. Jackson Street  
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**Athens State University**  
President: Dr. Jerry F. Bartlett  
Program Committee: Dr. Christopher J. Otto  
ottocj@athens.edu  
300 N. Beaty Street  
Department of Biology  
Athens, AL 35611  
Ph: (256) 233-8255  
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\*\***Auburn University**  
President: Dr. Jay Gogue  
*Executive Committee Member*  
Program Committee: Dr. Ken Halanych  
ken@auburn.edu  
Dept. of Biological Sciences  
101 Rouse Building  
Auburn, AL 36849  
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**Auburn University at Montgomery**  
Chancellor: Dr. John G. Veres  
Program Committee: Dr. John Aho  
jaho@mail.aum.edu  
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**Birmingham Southern College**  
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Program Committee: Dr. Andrew Gannon  
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**Huntingdon College**  
President: Dr. J. Cameron West  
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\*\***Jacksonville State University**  
President: Dr. William A. Meehan  
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**Judson College**  
President: David E. Potts  
Program Committee: Dr. Thomas Wilson  
twilson@future.judson.edu  
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\*\***Samford University**  
President: Dr. Andrew Westmoreland  
Program Committee: Dr. Lawrence Davenport  
(2007: Dr. Robert Stiles)  
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### **Spring Hill College**

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### **Troy University**

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### **\*\*University of South Alabama**

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## Federal Awards/Grants

### Schedule of Expenditures of Federal Awards for the period ending September 30, 2008

Federal Grantor/ Pass-Through Grantor/ Program Title	Budget		Revenue Recognized	Expenditures
	Total	Federal Share		
<b>Research and Development</b>				
<b>U.S. Department of Commerce</b>				
<b>Direct Programs</b>				
Coastal Zone Management Estuarine				
Research Reserves	91,772.00	40,000.00	6,683.28	6,683.28
Marine Fisheries Initiative	192,338.00	192,338.00	8,393.82	8,393.82
Marine Fisheries Initiative	287,650.00	287,650.00	101,345.44	101,345.44
Marine Fisheries Initiative	111,021.00	11,021.00	1,015.66	1,015.66
Marine Fisheries Initiative	2,129,368.00	2,129,368.00	28,763.16	28,763.16
<b>Passed Through University of Southern Mississippi</b>				
Gulf of Mexico Program	7,500.00	7,500.00	221.55	221.55
Sea Grant Support	161,798.00	106,309.00	85,271.88	85,271.88
Special Oceanic and Atmospheric Projects	23,000.00	23,000.00	7,023.90	7,023.90
Sea Grant Support Oceanic and Atmospheric Projects	49,999.00	49,999.00	13,794.76	13,794.76
<b>Passed Through Gulf of Mexico Foundation</b>				
Habitat Conservation	119,778.00	56,651.00	12,124.20	12,124.20
<b>Passed Through University of South Alabama</b>				
Habitat Conservation	112,297.00	112,297.00	18,261.99	18,261.99
Habitat Conservation	165,108.00	165,108.00	38,222.51	38,222.51
Habitat Conservation	117,060.00	117,060.00	148,691.72	148,691.72
Habitat Conservation	49,420.00	49,420.00	35,518.23	35,518.23
Habitat Conservation	143,152.00	143,152.00	69,671.18	69,671.18
Habitat Conservation	163,368.00	163,368.00	145,279.34	145,279.34
<b>Passed Through Mississippi State University</b>				
Office of Oceanic and Atmospheric Research	240,174.00	240,174.00	227,292.30	227,292.30
Office of Oceanic and Atmospheric Research	38,000.00	38,000.00	27,873.01	27,873.01
Office of Oceanic and Atmospheric Research	14,000.00	14,000.00	12,976.50	12,976.50
Office of Oceanic and Atmospheric Research	85,141.00	70,448.00	55,571.58	55,571.58

**Passed Through University of South****Florida**

Office of Oceanic and Atmospheric Research	95,122.00	95,122.00	33,203.19	33,203.19
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**Passed Through University of NC****Wilmington**

Office of Oceanic and Atmospheric Research	62,392.00	62,392.00	13,538.46	13,538.46
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**Conservation and Natural Resources**

EPA	75,500.00	75,500.00	42,281.72	42,281.72
Gulf States Marine Fisheries	150,000.00	150,000.00	93,715.34	93,715.34
NOAA Coastal Zone Management Act	40,000.00	20,000.00	20,000.00	20,000.00
MS Sound Monitoring	91,302.00	91,302.00	1,522.58	1,522.58
US Dept of Interior Fish & Wildlife Mobile Bay Manatee Survey	48,151.00	25,171.00	23,978.98	23,978.98
NOAA Coastal Zone Management Act	48,000.00	24,000.00	24,000.00	24,000.00
NOAA Coastal Zone Management Act	40,000.00	20,000.00	3,920.56	3,920.56
NOAA Coastal Zone Management Act	40,000.00	20,000.00	17,322.65	17,322.65
NOAA Fisheries Emergency Disaster Relief	150,000.00	150,000.00	30,075.04	30,075.04

**The Nature Conservancy**

Allied Management Projects	3,026,000.00	3,026,000.00	891,859.69	891,859.69
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**National Science Foundation****Direct Programs**

Geosciences	105,198.00	105,198.00	13,539.54	13,539.54
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**Passed Through University of South****Alabama**

Environmental Protection – Consolidated Research	152,019.00	152,019.00	18,365.46	18,365.46
Environmental Protection – Consolidated Research	155,337.00	155,337.00	15,765.01	15,765.01
Environmental Protection – Consolidated Research	21,528.00	21,528.00	9,626.94	9,626.94
Environmental Protection – Consolidated Research	83,926.00	83,926.00	30,742.12	30,742.12
Environmental Protection – Consolidated Research	97,938.00	97,938.00	51,352.93	51,352.93
Environmental Protection – Consolidated Research	4,830.00	4,830.00	4,830.00	4,830.00
Environmental Protection – Consolidated Research	33,630.00	33,630.00	22,020.42	22,020.42
Research	143,500.00	143,500.00	139,340.15	139,340.15
NOAA	58,157.00	58,157.00	58,157.00	58,157.00
NOAA	36,294.00	36,294.00	3,343.35	3,343.35

**Passed Through Alabama Department of Conservation and Natural Resources**

Coastal Zone Management Administration Awards	217,300.00	108,650.00	5,417.68	5,417.68
Coastal Zone Management Administration Awards	50,000.00	25,000.00	12,348.48	12,348.48
Coastal Zone Management Administration Awards	56,720.00	28,360.00	28,360.00	28,360.00

**Passed Through University of New Hampshire**

Coastal Zone Management Administration Awards

270,274.00	270,274.00	134,802.76	134,802.76
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Total Research and Development

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2,606,497.14	2,606,497.14
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**Other Federal Awards**

**US Department of Commerce**

**Direct Programs**

Congressionally Identified Awards and Projects (M)

4,411,204.00	4,411,204.00	350,715.08	350,715.08
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**Passed Through Alabama Department of Conservation and Natural Resources**

Coastal Zone Management Administration Awards

115,500.00	115,500.00	5,499.30	5,499.30
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**Passed Through University of Southern Mississippi**

Sea Grant Support  
Sea Grant Support  
Sea Grant Support

241,616.00	199,962.00	89,655.21	89,655.21
152,925.00	96,803.00	37,713.36	37,713.36
5,000.00	5,000.00	3,700.00	3,700.00

**Passed Through National Marine Sanctuary Foundation**

Special Oceanic and Atmospheric Projects

29,000.00	29,000.00	6,615.00	6,615.00
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**US Department of the Interior**

**Fish and Wildlife Service**

Fish and Wildlife Management Service  
Fish and Wildlife Management Service

5,000.00	5,000.00	2,546.15	2,546.15
50,000.00	50,000.00	8,006.32	8,006.32

**National Science Foundation**

**Passed Through University of Southern Mississippi**

Geosciences

145,421.00	145,421.00	37,551.05	37,551.05
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**Environmental Protection Agency**

**Direct Programs**

National Estuary Program  
Gulf of Mexico Program

3,293,449.00	1,502,350.00	328,506.91	328,506.91
150,000.00	150,000.00	511.30	511.30

**Environmental Protection Agency**

**Direct Programs**

Gulf of Mexico Program  
Gulf of Mexico Program

271,918.00	68,041.00	63,598.31	63,598.31
140,195.00	99,475.00	64,658.75	64,658.75

**Passed Through MOBILE/BALDWIN COUNTY SWCD**

Environmental Protection/ADEM Part Sponsors

55,361.00	55,361.00	24,886.63	24,886.63
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**U.S. Department of Education**  
**Office of Elementary and Secondary**  
**Education**

**Passed Through State of Alabama**

**Department of Education**

Improving Teacher Quality State Grants	64,186.00	64,186.00	15,228.00	15,228.00
Improving Teacher Quality State Grants	55,552.00	55,552.00	55,509.00	55,509.00

**Passed Through Mississippi State**  
**University**

Office of Oceanic and Atmospheric Research	180,000.00	180,000.00	20,529.68	20,529.68
Office of Oceanic and Atmospheric Research	658,113.00	358,113.00	304,106.60	304,106.60

**Passed Through Texas A & M research**  
**Foundation**

DOC-National Oceanic and Atmospheric Administration	67,683.00	44,842.00	16,991.52	16,991.52
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**Passed Through Alabama Department of**  
**Conservation and Natural Resources**

Coastal Zone Management Administratio Awards	31,000.00	31,000.00	14,314.03	14,314.03
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Total Expenditures of  
Federal Awards

\$3,630,660.51 \$3,630,660.51



## Balance Sheet

**Marine Environmental Sciences Consortium  
Dauphin Island Sea Lab  
Statement of Net Assets  
For the Year Ended September 30, 2008**

**ASSETS**

**Current Assets**

Cash	\$ 268,665
Accounts Receivable	1,156,901
Inventories	138,809
Total Current Assets	<u>1,564,375</u>

**Noncurrent Assets**

Capital Assets:	
Land	658,757
Improvements Other Than Buildings	9,181,972
Buildings	82,610
Equipment	1,449,403
Vessels	560,248
Construction in Progress	842,322
Library Holdings	476,221
Less: Accumulated Depreciation	<u>(4,680,556)</u>
Total Capital Assets, net of Depreciation	<u>8,570,978</u>
Total Noncurrent Assets	<u>8,570,978</u>
 Total Assets	 <u>10,135,353</u>

**LIABILITIES**

**Current Liabilities**

Accounts Payable	2,856
Lease Obligations	287,951
Compensated Absences	23,591
Deferred Revenue	73,522
Deposits Held for Others	115,077
Total Current Liabilities	<u>502,998</u>

**Noncurrent Liabilities**

Lease Obligations	149,233
Notes Payable	401,003
Compensated Absences	369,599
Total Noncurrent Liabilities	<u>919,835</u>
 Total Liabilities	 <u>1,422,833</u>

**NET ASSETS**

Invested in Capital Assets, net of related debt	8,133,793
Restricted for	
Expendable	
Scholarships, Fellowships and Instruction	37,122
Research & Public Outreach	493,720
Capital projects	103,077
Unrestricted	(55,193)
Total Net Assets	<u>\$ 8,712,519</u>

## Dauphin Island Sea Lab Participation Totals, and Graduate and Undergraduate Credit Hours Earned

