Dauphin Island Sea Lab Summer Session March 1- August 4

Priority Deadline Feb. 10, 2023





apply today: https://www.disl.edu/univ-prog/undergrad

Dauphin Island Sea Lab Dauphin Island, AL 36528 Phone: 251-861-2141 ext. 7526 **Registrar: Regina Kollegger**



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Register online www.disl.org/univ-prog/undergrad



Important Dates

Priority Course Registration Deadline	February 10, 2023
Scholarship/Work Study Application Deadline	March 10, 2023
Late Fee Charged (\$50) for Registration after March 31, 2023	Post March 31, 2023
Payment of DISL Housing and Meal Plans Due	May 1, 2023
Final Course Registration Deadline	May 1, 2023

DISL Campus Contact Information

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Dauphin Island Sea Lab

The MESC/DISL values diversity, equity, and inclusion (DEI) and seeks to create a climate of mutual respect and full participation. Please review our DEI policy link here https://www.disl.edu/images/uploads/DISL_DEI_Statement_2022.pdf



Summer University Programs Course Schedule 2023

May Session: May 08-May 19 - 2 weeks one course only may be taken in this session -Lecture/Lab: M-F (9A-4P)		
**##Biology & Conservation of Marine Turtles	(2)UG/G	Wibbels
**Dolphins and Whales	(2)UG	Lewis
**Shark and Ray Biology	(2)UG/G	Drymon
**Coastal Zone Management	(2)UG/G	Anderson
Coral Reef Session: March 01-May 19		
**##Coral Reef Biology and Ecology	(4)UG/G	Hoadley

1st Session: May 22-June 23 - 5 weeks		
<u>4-hour courses:</u> Lecture: M/T/W (9A - 12P); Lab: M/T (1P– 4P)		
Marine Biology	(4)UG/G	Layton
Marine Botany	(4)UG/G	Henning
Marine Geology	(4)UG/G	Elliott
Marine Mammals	(4)UG/G	Lewis
<u>2-hour courses</u> Lecture and Lab: M/T (9A-4p)		
Marine Restoration Ecology	(2)UG/G	Temple
Hurricanes of the Gulf Coast	(2)UG/G	Bregy
<u>4-hour courses:</u> Lecture: W (1P –4P), TH/F (9A– 12P); Lab: TH/F (1P– 4P)		
Coastal Wetlands	(4)UG/G	Steinmuller
Experimental Plankton Biology	(4)UG/G	Moss
Intro to Oceanography	(4)UG/G	Krause
Marine Vertebrate Zoology	(4)UG/G	Albins
<u>2-hour courses</u> Lecture and Lab: TH/F (9A-4p)		
Coastal Birds	(2)UG/G	Woodrey

<u>4-hour courses:</u> Lecture: M/T/W (9A - 12P); Lab: M/T (1P -4P)			
Marine Biology	(4)UG/G	Titus	
Marine Conservation Biology	(4)UG/G	Henning	
Marine Invertebrate Zoology	(4)UG/G	Carmichael	
<u>2-hour courses:</u> Lecture and Lab: M/T (9A-4p)			
Environ. App.of GIS (online)	(2)UG/G	Fleming	
Marine Aquaculture	(2)UG/G	Stoeckel	
<u>4-hour courses:</u> Lecture: W(1 –4P), TH/F(9A– 12P); Lab:TH/F (1P– 4P)			
Marine Biology	(4)UG/G	Gannon	
Marine Biology (hybrid)	(4)UG/G	Gannon	
Marine Ecology	(4)UG/G	Dorgan	
Marine Behavioral Ecology	(4)UG/G	Gier	
Marine Vertebrate Zoology	(4)UG/G	Baker	
<u>2-hour courses</u> Lecture and Lab: TH/F (9A-4p)			
Marine Mammal Health	(2)UG	TBD	
Biotic Response to Sea Level Change (online)	(2)UG	Wofford	

2nd Session: June 26-July 28 - 5 weeks

**Only one course per session. ##Additional fees apply (fees nonrefundable unless course is cancelled) All courses are subject to change. Listed schedule times are

approximate and are left to the discretion of the instructor. All courses must be approved by your advisor.

Neurobiology Session July 17-August 04

Lecture: M-Sat. (9A-5P)		
Intro. To Neurobiology	(3)Adv. UG/G	Strang et al.

Fees, Tuition, Room and Board Costs

Course Tuition Paid to Your University

After confirmation of enrollment at DISL, students must register and pay course tuition <u>at their home</u> <u>campus</u>. Birmingham Southern College applicants should check with their campus liaison officer for appropriate procedures for tuition payment.

ALL Room and Meal Plans, DISL, and Travel Fees are paid directly to DISL

PAYMENT DEADLINES

1. All DISL Fees (see DISL fees below) are due at the time of course registration. Non payment of fees can affect your course enrollment. Special payment arrangements must be preapproved by the DISL bursar, Ms. Daphne Wood, dwood@disl.edu, ext. 7512.

A late fee charge of \$50 will be added if registering after March 31st, 2023.

DISL Fees:

Student Application Fee	\$75.00 per summer
Student Registration Fee	\$35.00 per summer
Lab Fee	\$20.00 per credit (except Auburn University students)
Student ID Fee	\$10.00 per summer
Student Activity Fee	\$10.00 per summer
Student Parking Fee	\$15.00 per summer if car is parked on campus
Facilities Fee	\$270.00 per summer
Printing Fee	\$30.00 per summer
Late Payment of Fees	\$50.00 per summer (if registering after March 31, 2023)

$\mathbf{2}$. All room and meal plan payments are due by May 1st.

All dormitory residents are required to purchase meal plans. (Preparation of food in the dormitories is absolutely prohibited)

<u>Meal Plans:</u>

Unlimited meals\$250.00/week15 meals/week\$200.00/week10 meals/week\$150.00/week

Dietary needs will be respected and should be communicated clearly on the meal plan request form. You may contact the registrar Regina Kollegger, rkollegger@disl.edu, or the cafeteria manager, Darren Harbsion, dharbison@disl.edu, to discuss concerns or necessary accommodations.

Dorm Plans:

2 week shared room \$300.00 2 week private room \$500.00

5 week shared room \$750.00 5 week private room \$950.00





Dormitory rooms are available based on two-person occupancy per room. All rooms are air-conditioned and have wireless Internet connections. Students must supply their own twin bed linens. No pets, cooking equipment, refrigerators, coffee makers, etc., are allowed. (For info regarding Service animals, please contact the DISL UP Registrar.) If space is available, private rooms will be issued on a first-come basis. Please specify if you would be interested in a private room via your online application. Private rooms will be issued on a per session basis and cannot be guaranteed for all terms.

Students may check into the DISL Challenger dorms after 12:00 noon the Saturday before class begins on Monday.

After courses end on Friday, students will be expected to check out of the dorms on Saturday before 9:00 a.m. unless they are enrolled in the next summer session. If a student is flying into Mobile Regional airport and requires transportation to DISL, we recommend you arrive on the Saturday before the term begins and depart on the Saturday morning after term ends.

Payment to DISL: Payment may be made online via your student Populi account www.disl.populiweb. com, or mailed at least TWO WEEKS prior to your arrival. MasterCard, Visa, Discover and American Express are accepted over the phone. No cash accepted. Make check or money order payable to **DISL** and mail to **Ms. Daphne Wood**, **Bursar, 101 Bienville Blvd., Dauphin Island, AL 36528.** Call (251) 861-2141, ext. 7512 with questions to Ms. Wood. DISL fees may be paid on a session basis if arranged beforehand with the DISL Bursar.

Once a student begins class, no refunds for lab or DISL fees will be issued. Prorated room and board will be issued for student withdrawal where applicable. Travel fees are non-refundable unless the course is cancelled.

Payment Deferrals: Payment deferrals will be made only upon receipt at DISL of written verification of loan, grant, fellowship, assistantship, VA or other forms of support. The verification must be from an authorized agent of the awarding entity and must indicate the amount awarded, anticipated date(s) of receipt and schedule of payments if not a single lump sum. It should be indicated to whom payment will be made, i.e., academic institution for tuition only or without limitation, to the student directly, etc. Students receiving deferrals must sign a promissory note to DISL in the amount of the deferral. There will be no deferrals on meal plans. All deferred charges must be paid by the end of the term in order to enroll in a subsequent term and for grades to be transmitted to the appropriate campus.





Submission deadline for priority registration: February 10, 2023

DISL will accept registrations until May 1, 2023; however, courses will fill early and students should try to send their registrations before the priority registration date.

Non payment of fees will result in a late fee charge of \$50 to be added after March 31st, 2023.

Step #1 Complete the DISL Summer Online Forms:

ONLINE:

• Visit <u>https://www.disl.edu/univ-prog/undergrad</u> for instructions and the 2023 Form One Application Link.

- Complete online application **Form One**. (\$75.00 application fee). Requires ID photo upload.
- Complete online course registration, health and vessel waiver **Form Two** (\$35.00 registration fee) Requires signed advisor form, notarized vessel waiver, and notarized health waiver.
- Complete housing and meal plan request Form Three.

Step #2 Confirmation of DISL Course Enrollment

- DISL will email a confirmation of your course enrollment after the priority registration deadline of February 10, 2023. This email will include instructions to login to your DISL Student account via disl.populiweb.com, and a link to additional forms and documents.
- Once you login to your student account on **DISL.Populiweb.com**, you will be able to view a listing of your courses and the status of your enrollment (registered or wait).
- Your DISL bill is payable online (DISL fees are due by February 10, and room and board by May 1st). DISL fees may be paid on a session-by-session basis if arranged beforehand with the **DISL Bursar, Daphne Wood (dwood@disl.edu)**.

Step #3 Enrollment at Your Home Campus

- You MUST also register at your home campus and pay your home campus <u>tuition</u> (not applicable for Birmingham Southern Students).
- You must submit proof of home campus tuition paid and a schedule of courses registered for at your home campus to the DISL UP Registrar. This can be done via email or online via disl.populiweb.com.

NOTE: In cases where your home institution does not permit you to register for classes before DISL classes begin and you fail to register when campus registration begins, you will be obligated to pay DISL directly for the cost of registration and tuition.



<u>Step #4 Confirmation of Cross Registration at Home Institution</u> <u>and Course Attendance</u>I

- You must provide the DISL UP Registrar with a receipt of course enrollment at your home institution.
- All summer faculty are required to take attendance. If a student fails to attend the first two days of the course, the student will be withdrawn from the course.

Frequently Asked Questions

Do I have to enroll at both my home school and at the DISL for my summer course?

Yes, in order to receive academic credit for your courses you MUST register for your class at your home institution and at the DISL. Be sure to get your academic advisor's approval for your course selections.

Will I receive two billing statements for my summer courses at DISL?

Yes, your home institution will invoice your tuition. The DISL will invoice academic and facility fees as well as your room and board if you decide to live on the DISL campus.

Can out-of-state students enroll in DISL Summer UP courses?

Yes, however, your home school will need to enter an agreement with the DISL for academic credits to transfer. Please contact the UP Registrar Regina Kollegger for more info.

Do I have to be enrolled in a college to take DISL Summer UP courses?

No, you do not need to be enrolled in college to take our courses. You may audit our courses for a fee, but will not receive academic credit for your enrollment.

Do you offer financial aid?

DISL does not offer a financial aid program. You will need to coordinate your financial aid through your home institution. The DISL does offer student work-study and scholarship opportunities, please see page 27 for more information.

Are there housing options on Dauphin Island other than DISL campus living?

Sometimes there are houses available for rent on Dauphin Island, however, you will need to search and coordinate these options on your own.

Advisor's Sheet 2023

May Session: May 8-May 19 M-F (9A-4p)			
Course ## Additional fees apply & are approximate/non-refundable	Credit	1st Choice	2nd Choice
##Biology & Conservation of Marine Turtles	(2)UG/G		
Dolphins and Whales	(2)UG		
Shark and Ray Biology	(2)UG/G		
##Coastal Zone Management	(2)UG/G		
Coral Reef Session: March 1-May 19			
##Coral Reef Biology & Ecology	(4)UG/G		

1st Session: May 22-June 23 - 5 weeks			
Lecture: M/T/W (9A - 12P);	Lab: M/T	(1P– 4P)	
Course	Credit	1st Choice	2nd Choice
Marine Biology	(4)UG/G		
Marine Botany	(4)UG/G		
Marine Geology	(4)UG/G		
Marine Mammals	(4)UG/G		
Lecture and Lab: M/T (9A-4P)		
Marine Restoration Ecology	(2)UG/G		
Hurricanes of the Gulf Coast	(2)UG/G		
Lecture: W (1P –4P), TH/F (9A– 12P); Lab: TH/F (1P– 4P			
Coastal Wetlands Ecology	(4)UG/G		
Intro to Oceanography	(4)UG/G		
Marine Vertebrate Zoology	(4)UG/G		
Experimental Plankton Biology	(4)UG/G		
Lecture and Lab: TH/F (9A-4P)			
Coastal Birds	(2)UG/G		

It is important to list both first and second choices for courses whenever possible. This advisor sheet must be signed and uploaded to your Populi course registration. All courses are subject to change. It is important to list both first and second choices for courses whenever possible. This advisor sheet must be signed and uploaded to your Populi course registration. All courses are subject to change.

2nd Session: June 26-July 28 - 5 weeks			
Course	Credit	1st Choice	2nd Choice
Lecture: M/T/W (9A - 12	2P); Lab: M	/T (1P– 4P)
Marine Biology	(4)UG/G		
Marine Consv. Biology	(4)UG/G		
Marine Invert. Zoology	(4)UG/G		
Lecture and Lab: M/T			
Environ App. of GIS (online)	(2) UG/G		
Marine Aquaculture	(2)UG/G		
Lecture: W (1P –4P), TH/F (9A– 12P); Lab: TH/F (1P– 4P			
Marine Behavioral Ecology	(4)UG/G		
Marine Biology	(4)UG/G		
Marine Biology (hybrid)	(4)UG/G		
Marine Ecology	(4)UG/G		
Marine Vertebrate Zoology	(4)UG/G		
Lecture and Lab: TH/F (9A-4P)			
Marine Mammal Health	(2)UG		
Biotic Response to Sea Level Change (online)	(2)UG		
Neurobiology Session			
Intro. to Neurobiology	(3)UG/G		

Advisor Approval		
Total # credits registered for summer		
Priority Level (Level 1, 2, or 3)		
Date:		
Advisor's Signature		
Student's Signature		





The Dauphin Island Sea Lab offers scholarships and work study positions for summer school students to defer educational related costs.

A completed online scholarship or work study application must include the following items and must be received by **March 10, 2023.**

Online Scholarship and Workstudy Application Form

https://disl.populiweb.com/router/admissions/onlineapplications/index?application_form=31664

Includes:

--<u>A cover letter (2-page max)</u> describing background, qualifications, and financial need.

--<u>Transcripts</u> for all college courses taken (unofficial copies are acceptable)

--<u>A CV or resume</u>' describing relevant coursework, research/work experience, honors, and extracurricular activities

--<u>Three (3) Letters of recommendation</u>. These letters should be from individuals that can evaluate academic potential such as professors or employers.

Scholarships

The following scholarships are available. Applicants will be considered for all scholarships.

- **The Rita George and George Crozier Scholarships** provide 12 weeks of room and board for students enrolled in DISL summer courses
- DISL Foundation Scholarships waive academic fees and travel fees for summer school

Work Study

<u>Laboratory intern</u> – Interns work in the lab of a DISL faculty member assisting with authentic research projects. Interns typically work 5-10 hours per week, but this is somewhat variable depending upon the nature of the work performed. Interns often work on weekends. This opportunity provides a unique experience to gain research experience. Interns earn \$10 an hour.

<u>Library Aides</u> – Library Aides work 10 hours per week to staff the library and computer lab after hours. Library aides earn \$10 per hour.

<u>**Dorm Monitors**</u> – Dorm monitors receive \$125 per week, receive a private dorm room and a meal plan.



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MESC Insitutions and DISL Campus Liaison Officers

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*Schools with Graduate Programs

Register online www.disl.edu/univ-prog/undergrad



Tentative Orientation Schedule

	May Session	First Session	Second Session
	May 08– 19	May 22 - June 23	June 26- July 28
Check-in:	Saturday, May 06	Saturday, May 20	Saturday, June 24
Challenger Dorm	after 12:00 noon	after 12:00 noon	after 12:00 noon
Orientation : Shelby Auditorium Students attending multiple sessions are only required to attend one orientation session	Monday, May 08 9:30A	Monday, May 22 9:30A	Monday, June 26 9:30A
Classes Begin	Immediately	Immediately	Immediately
	After Orientation	After Orientation	After Orientation

Introduction to Neurobiology will have a separate schedule for Orientation.

Hurricane Procedure: In the event evacuation becomes necessary due to a hurricane, information regarding closing of DISL and alternative housing for students living in the dorms will be available through University Programs. Students may leave evacuation destination information with the University Programs Registrar. Once the emergency situation has concluded and electrical power is established, information regarding the reopening of DISL and all other necessary information will be recorded on the switchboard answering machine (251) 861-2141. If power is not immediately restored to DISL, information will be sent to local radio and television stations. The DISL website www.disl.edu will also be updated with current information.



Directed Studies

Advanced (UG/G) 1-6 credit hours

Students may enroll by special arrangement. All students registering for Directed Research must be accepted by a DISL faculty research supervisor who will be in residence at DISL during the research. Project topic, duration, credit and acceptance by a supervisor must be arranged prior to registration at DISL. Please contact one of the listed faculty members for suggested topics in their area of expertise. Students are expected to enroll and conduct their research over 5 weeks. Directed Studies may be taken to enhance a student's research experience, but are not intended to substitute for research credit that is directly related to a student's thesis project. Contact DISL UP Registrar for details.

May Term- May 08- 19 M-F (9A-4P)Enroll in one course only in this session.Biology and Conservation of Marine Turtles(2cr UG/G)Dr. Wibbels

This introductory course will provide an overview of the biology and conservation of marine turtles. Topics to be covered include the identification, distribution, nesting behavior, migratory behavior, feeding ecology, population biology and genetics, developmental habitats, temperature-dependent sex determination, paleontology and conservation of marine turtles. Students will obtain a detailed knowledge of sea turtle biology; gain an understanding of why many sea turtle species have become endangered; and how proper management has allowed some populations to recover. The course will culminate with an overnight, multi-day field trip to sea turtle nesting beaches and foraging grounds in the southeastern U.S. The class will also visit sea turtle research and rehabilitation facilities. The overnight field trip will provide students with the opportunity to observe loggerhead, green, and leatherback turtles in their natural habitats.

*Special fees apply and will be determined based on enrollment (approximately \$625.00, meals not incuded). A trip deposit (1/2) will be due on March 06, 2023, with the remaining portion due on April 28, 2023. The fee is nonrefundable unless the class is canceled. **Prerequisites** - introductory course in biology.

Dolphins and Whales (2cr UG)

Dr. Lewis

This class will be an introduction to the biology of cetaceans (toothed and baleen whales). Topics covered will include evolution, taxonomy, anatomy, physiology, genetics, behavior, and conservation related to species within this Order. Lab exercises will introduce current methods used in cetacean research. **Prerequisites** - general biology.

Students may need to arrive at 7:30am for field trips, and/or work evenings and weekends to meet course needs (working in the lab, on projects, or participating in field exercises and/or overnight field trips). Some courses may have snorkeling and other water **activities.





Register online www.disl.edu/univ-prog/undergrad



May Term- May 08- 19 M-F (9A-4P) Enroll in one course only in this session. Dr. Drymon

Shark and Ray Biology (2cr UG/G)

This course will provide an introduction to the biology of sharks and rays, with special emphasis on regional shark fauna and field techniques. Topics to be covered include chondrichthyan origin, systematics, sensory biology, locomotion, food consumption, osmoregulation, reproductive biology, life history, ecology, fisheries and conservation. Lectures will be supplemented with discussions of papers from the primary literature to familiarize students with current research. In addition, longline and gillnet sampling will provide students with firsthand knowledge of field techniques and local shark identification. Prerequisites - one course in general/organismal biology (or equivalent).

Coastal Zone Management (2cr UG/G)

Dr. Anderson

A review of ecological features and of management policies for coastal communities with a description of relevant federal and state programs. This introductory level course examines the various aspects of coastal zone management in the United States by: 1) examining the major substantive and procedural aspects of specific laws and regulations which govern activity in the coastal zone environment and processes; and 2) examining how coastal environments and processes affect specific management issues of the zone.

**Students may need to arrive at 7:30am for field trips, and/or work evenings and weekends to meet course needs (working in the lab, on projects, or participating in field exercises and/or overnight field trips). Some courses may have snorkeling and other water activities.



Coral Reef Session - March 01-May 19 Enroll in one course only in this session.

Coral Reef Biology and Ecology (4cr UG/G)

(4-credit hrs total) 2-credit hours for self-paced online section + 2-credit hours for field course.

This course will explore the ecology and evolution of coral reef communities, with a view to understanding what is happening on reefs today. This 4-credit course will begin with self-paced online course lectures and activities that will be available by April 1st. The online portion can be taken alone but is required for participation in the field component. In May we will travel to San Salvador in the Bahamas and stay at the Gerace Research Center (www.geraceresearchcentre.com) where we will have access to numerous coral reef and seagrass/mangrove systems to explore and conduct short experimental projects. The field component of this course will expose students to field research techniques and specialized tools for assessing coral health and biology. Overall, we will cover energy flow across reefs, biogeochemical cycling important for continual reef development, microbial Interactions that govern the flow of carbon and nitrogen through coral reefs, and current threats from climate change. Both the online and field course technically end on May 20th but it is encouraged that students complete the majority of the online course prior to the start of the field component.

There is no assigned textbook and most readings will be research articles and posted prior to the lecture. Prerequisites- 2 semesters of general biology or equivalent required, general ecology course recommended.

*Special fees apply and will be determined by the number of participants in the course (approximately 1400.00 + travel expenses). Round trip flights from Miami to San Salvador are available through Bahamas Air (approx \$500 round trip). To reduce travel costs, interested students can travel with us to and from Miami (departing from DISL via van). A trip deposit (1/2 – excluding travel) is due on March 17, 2023, with the remaining portion due on April 28, 2023. The fee is nonrefundable unless the class is canceled

1st Session -May 22- June 23 MTW (9A-12P) LAB MT (1P-4P)

Marine Biology (4cr UG/G)

A general survey of marine plants, invertebrates and vertebrates, the communities they form and the physical and chemical factors that influence them. Field trips include marsh, seagrass, and dune habitats. Sampling from research vessels and laboratory exercises will serve to introduce students to the diversity of marine habitats and organisms. Organisms will be identified using dichotomous keys. There will be overnight field trips. Snorkeling gear will be needed. **Prerequisites** - general biology.

Marine Botany (4cr UG/G)

A general survey of marine algae (microscopic and macroscopic), as well as salt marsh vegetation, mangroves, seagrasses and maritime forest communities. Lectures will emphasize identification, distribution, structure, ecology and physiology. Overnight field and laboratory work is involved, and may include wading and snorkeling. Snorkeling gear will be needed. **Prerequisites** - general biology.

Dr. Hoadley

Dr. Layton

Dr. Henning





1st Session - May 22- June 23 MTW (9A-12P) LAB MT (1P-4P)

Marine Geology (4cr UG/G)

A study of the geology of the ocean basins, with special emphasis on the continental shelves, their sediments and the sedimentary processes at work there with emphasis on the northeast Gulf of Mexico. Field trips will be taken to study beach processes and sediments in Mobile Bay and offshore. Students will be introduced to the following: technical writing; conducting a research project; working as a team member; data management; concepts of marine geology; critical thinking; principles of science (hypothesis testing). Participation in overnight field trips is a part of this course. Prerequisites - introductory geology recommended.

Marine Mammals (4cr UG/G)

This course will cover the evolutionary history, taxonomy/classification, anatomy, physiology, behavior and conservation/management issues of marine mammals (cetaceans, pinnipeds, mustelids, sirenians and the polar bear). In addition, research methods used to study marine mammals will be taught (including field and lab techniques). Prerequisites - general biology.

1st Session -May 22- June 23 M/T (9A-4P)

Marine Restoration Ecology (2cr UG/G)

This course will provide an overview of the scientific and technical principles of marine habitat restoration. We will discuss the role of key ecological concepts in restoration, and the role of restoration in science and society. Students will identify structural and functional components of marine habitats and learn how to design restoration projects and monitoring plans that capture these key components of structure and function. Students will learn to recognize when adaptive management may be needed, and how to formulate strategies to correct or maintain the desired trajectory of restored habitats. Students will also be introduced to the interdisciplinary nature of restoration science, including social, ethical, political and economic aspects. Lectures will be supplemented with primary literature reading assignments. Field trips will allow students to see local restoration sites and learn monitoring techniques used in various habitats (e.g., salt marsh, oyster reef, seagrass bed). This course is designed for undergraduate and graduate students. Prerequisites- One year of undergraduate introductory science (preferably including an ecology course) or consent of the instructor.

Hurricanes of the Gulf Coast (2cr UG/G)

This is an introductory survey course on hurricanes with emphasis on hurricanes in the Gulf of Mexico. Topics include: 1) the hurricane problem along the Gulf Coast and a review of some of the infamous Gulf Coast hurricanes of the last 150 years; 2) Atlantic/Caribbean/Gulf hurricane climatology; 3) the effects of El Niño and multi-decadal changes in the Atlantic circulation on hurricane frequency; 4) favorable/unfavorable environments for hurricane development and intensification; 5) hurricane features and structure; 6) hurricane movement and steering mechanisms; 7) coastal and inland effects from landfalling Gulf Coast hurricanes; and 8) Gulf hurricane forecasting (where will the storm go and how strong will it be at landfall). A half-day boat trip along much of the length of Dauphin Island is planned (weather permitting) during the last week of class to inspect the impact of recent hurricanes on this barrier island. Prerequisites - none.

Dr. Lewis

Dr. Elliot

Dr. Temple

Dr. Bregy

1st Session -May 22- June 23 W (1P-4P) TH/F(9A-12P) LAB TH/F (1P-4P)

Coastal Wetlands Ecology (4cr UG/G)

This course will focus on coastal and nearshore wetland areas, with an emphasis on the biogeochemical processes that occur within, and issues that threaten and protect these important resources. Wetlands not only provide critical habitat for many aquatic and semi-aquatic species, they are also important for primary productivity, transformation of nutrients, pollutant removal, as well as providing protection from storm surges and floodwaters. Insight into wetland ecology requires understanding of the unique interactions between biology, chemistry and hydrology. **Prerequisites** - General biology and botany or zoology.

Marine Vertebrate Zoology (4cr UG/G)

A survey of marine fishes, reptiles and mammals, with an in-depth comprehensive treatment of their systematics, zoogeography and ecology. Field and laboratory work will stress the vertebrate fauna of the northern Gulf of Mexico and most of the course will be devoted to fishes. Students completing this course will: 1) have a basic understanding of the biology, ecology, physiology and systematics of the various marine vertebrate taxa; 2) gain experience in field and lab identification of members of the various vertebrate taxa; and 3) gain experience in collecting various marine and island vertebrate taxa. **Prerequisites** - two semesters of general biology (or equivalent) and accompanying labs.

Experimental Plankton Biology (4cr UG/G)

This course examines the full diversity of microbial, phyto- and zooplankton in coastal to open ocean environments and will allow students to experimentally manipulate plankton. Students will learn the life cycles of planktonic organisms and will understand the diversity of plankton available within the Mobile Bay, Mississippi Sound and open coastal waters in the vicinity of Dauphin Island Area. Students will identify plankton and learn how to assay plankton populations using classic filtration, microscopy and molecular methods. Students will become familiar with the seasonal drivers of planktonic populations. Students will become proficient with their understanding of the microbial loop, anthropogenic impacts on phyto- and zooplankton and the mechanisms and implications of explosive jellyfish blooms, the concept of 'Jelly World', invasive species, and HABs. Students will experience diel migration in offshore day and night excursions. Students will examine 1-2 'hot' new research papers each week in a brief journal club type session in which the topic will be critiqued by the group. This is an experimental course: All students will become familiar with setup of an experiment and will work in groups of two to research an aspect of the biology of their favorite planktonic organism. Each student will keep a detailed notebook of collections (periodically reviewed) and their experiment, andadditionally, will give a ten -minute classroom presentation or demonstration on his/her favorite

planktonic organism. Students will have short quizzes each week to help students stay up to date, a cumulative final test and will be graded for attendance. A text is required (Johnson & amp; Allen, Zooplanktonof the Atlantic and Gulf Coasts, Johns Hopkins Univ. Press) and an optional recommended highly visual text (Sardet, Plankton, Univ. Chicago Press) is suggested. Scientific papers will be provided online for no additional cost; numerous additional identification manuals/links will be made available. A prior course in Organismal Biology or equivalent is highly desirable but not required.

Dr. Moss

Dr. Albins

Dr. Steinmuller



1st Session -May 22- June 23 W (1P-4P) TH/F (9A-12P) LAB TH/F (1P-4P)

Intro to Oceanography (4cr UG/G)

This hands-on course provides students an opportunity to learn about the physics, chemistry, geology, and biology of the ocean. Students will apply this knowledge first hand by implementing sample collection strategies on board a research vessel during cruises on Mobile Bay and the Gulf of Mexico. Through class discussion of recent oceanographic discoveries and core concepts, and learning user-friendly ocean data visualization software, this course will enable students to then interpret oceanographic data collected during their cruises and to create clear and concise presentations.

Typical data collected on board the research vessel will include hydrographic (temperature, pH, salinity, inorganic nutrients, light intensity) and biological (phytoplankton, zooplankton) variables that are collectively processed and visualized. Students should have a laptop equipped with word processing and spread-sheet software. **Prerequisites** - basic science major.

1st Session -May 22- June 23 TH/F (9A-4P)

Coastal Birds of Alabama (2cr UG/G)

This course highlights the diverse coastal birdlife of northern Gulf of Mexico. With a focus on the study of avian ecology in the field, this class will include a significant emphasis on the use of both sight and sound as means of field identification. A variety of habitats will be explored, including barrier island nesting grounds, the Mobile-Tensaw River basin, local marshes and other unique coastal habitats. Students will also be introduced to a variety of field ornithology techniques including bird-banding, survey techniques, and monitoring methodologies. Email questions to Mark.Woodrey@msstate.edu. **Prerequisites** – undergraduate biology or zoology.

**Students may need to arrive at 7:30am for field trips, and/or work evenings and weekends to meet course needs (working in the lab, on projects, or participating in field exercises and/or overnight field trips). Some courses may have snorkeling and other water activities.



Register online www.disl.edu/univ-prog/undergrad Dr. Woodrey

Dr. Krause

2nd Session - June 26 - July 28 MTW(9A-12P) LAB MT (1P-4P)

Marine Biology (4cr UG/G)

A general survey of marine plants, invertebrates and vertebrates, the communities they form and the physical and chemical factors that influence them. Field trips include marsh, seagrass, and dune habitats. Sampling from research vessels and laboratory exercises will serve to introduce students to the diversity of marine habitats and organisms. Organisms will be identified using dichotomous keys. There will be overnight field trips. Snorkeling gear will be needed. Prerequisites - general biology.

Marine Conservation Biology (4cr UG/G)

This advanced course is open to juniors, seniors and graduate students. This course will explore the major threats to marine biodiversity as well as the pros and cons of the potential solutions to these threats. Students will participate in class discussions on current topics in marine conservation biology and will critically evaluate marine conservation primary literature as well as the viewpoints of the various entities involved in marine conservation issues. In addition, students will participate in field trips that support topics covered in lectures and will demonstrate the application of current principles in marine conservation. Prerequisites an introductory class in either marine or general ecology.

Marine Invertebrate Zoology (4cr UG/G)

This course surveys the morphology, natural history and evolutionary relationships of the marine invertebrates. The course includes lectures, laboratory exercises and extended field trips. Participation in overnight field trips is a part of this course. Snorkeling gear will be needed. **Prerequisites** - introductory biology or zoology.

Register online www.disl.edu/univ-prog/undergrad



Dr. Henning

Dr. Carmichael



2nd Session - June 26 - July 28 M/T (9A-4P)

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Environmental Applications of GIS (online only) $(2 \operatorname{cr} UG/G)$

This course consists of learning applied mapping and analysis with GIS and will leverage other geospatial techniques including remote sensing, geovisualization, and spatial analysis with particular emphasis on environmental applications. Students will use knowledge acquired from readings, guided activities, and instructor demonstrations to apply GIS data including vector and raster spatial data, imagery, maps, and surface models in examinations of contemporary coastal and marine science issues. Students will be exposed to working with spatial information regarding human and natural hazards and disasters, land use and land cover, coastal monitoring, and other relevant data types. Some lecture is required, but this course will emphasize a "hands-on" approach to learning GIS through practical assignments and projects in a computer lab and in the field. Industry leading ArcGIS software will be used along with exposure to online and open-source technology. Prerequisites - statistics or equivalent course in mathematics. This course is **asynchronous**.

Marine Aquaculture (2cr UG/G)

This course will introduce students to techniques in live animal culture with an emphasis on basic principles that can be applied to the culture of any organism for research, display or commercial profit. Topics discussed will include: water chemistry, filtration, production techniques, reproduction and nutrition. This course is also designed to assist students with problem solving and communication skills. Prerequisites - general biology required; ichthyology, limnology, and invertebrate zoology suggested, but not required.



Register online www.disl.edu/univ-prog/undergrad

Dr. Fleming

Dr. Stoeckel

2nd Session - June 26 - July 28 W (1P-4P) TH/F (9A-12P) LAB TH/F (1P-4P)

Marine Biology (4cr UG/G)

A general survey of marine plants, invertebrates and vertebrates, the communities they form and the physical and chemical factors that influence them. Field trips include marsh, seagrass, and dune habitats. Sampling from research vessels and laboratory exercises will serve to introduce students to the diversity of marine habitats and organisms. Organisms will be identified using dichotomous keys. There will be overnight field trips. Snorkeling gear will be needed. Prerequisites - general biology.

Marine Biology Hybrid (4cr UG/G)

This is a five-week asynchronous Marine Biology course (see course description above) with an additional week in person at the Dauphin Island Sea Lab for field and lab activities (July 31 through August 4th). The online portion of the course is asynchronous and does not have specific meeting times, however assignments and activities are due on a weekly basis. Students are expected to complete work within the specific week it is assigned. Students must attend the in person field and lab portion of the course, which starts July 31st and ends August 4th.



Dr. Gannon

Dr. Gannon



2nd Session - June 26 - July 28 W (1P-4P) TH/F (9A-12P) LAB TH/F (1P-4P)

Marine Ecology (4cr UG/G)

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This advanced course is open to juniors, seniors and graduate students. The class will study marine organisms as they interact with each other and their environment, and examine ecological theories and the experimental basis of our current knowledge. The laboratory will consist of field trips to a wide variety of marine habitats and field problems which will be examined by student teams in small groups. Habitats selected for emphasis include coral reefs, kelp forests, seagrass meadows, the rocky intertidal and deep-sea hydrothermal vents. Snorkeling gear will be needed. **Prerequisites** - general biology.

Marine Behavioral Ecology (4cr UG/G)

The course examines how animal behavior is influenced by and interacts with its environment, and the ecological and evolutionary significance of these behaviors in a marine setting. Students will learn principles of behavioral ecology as they relate to marine animals, become familiar with techniques for observing animal behavior and conducting behavioral experiments, and be introduced to methods for collecting and analyzing behavioral data. Snorkeling gear will be needed. Prerequisites - introductory course that covers zoology (either vertebrate or invertebrate).

Marine Vertebrate Zoology (4cr UG/G)

A survey of marine fishes, reptiles and mammals, with an in-depth comprehensive treatment of their systematics, zoogeography and ecology. Field and laboratory work will stress the vertebrate fauna of the northern Gulf of Mexico and most of the course will be devoted to fishes. Students completing this course will: 1) have a basic understanding of the biology, ecology, physiology and systematics of the various marine vertebrate taxa; 2) gain experience in field and lab identification of members of the various vertebrate taxa; and 3) gain experience in collecting various marine and island vertebrate taxa. **Prerequisites** - two semesters of general biology (or equivalent) and accompanying labs.

**Students may need to arrive at 7:30am for field trips, and/or work evenings and weekends to meet course needs (working in the lab, on projects, or participating in field exercises and/or overnight field trips). Some courses may have snorkeling and other water activities.



Dr. Baker

Dr. Gier

Dr. Dorgan



2nd Session - June 26- July 28 TH/F (9A-4P)

Biotic Response to Sea Level Change (2cr UG)

This course is an overview of sea level change over geologic time with emphasis on mechanisms of change, evidence of past sea level changes, and the impact of expected sea level changes on the marine biosphere. Topics include: global climate change and eustasy, tectonically-forced sea level change, epeiric seas, transgression and regression sedimentology, coastal geomorphology, and marine and coastal habitat change. Field studies emphasize local evidence for sea level change, habitat shift and reorganization, and human response to changing sea level, such as community displacement, shoreline stabilization, and beach-fill nourishment. This course is designed for undergraduate and graduate students in the physical and biological marine sciences. This course is online and asynchronous with optional field trips (days TBA). TBD

Marine Mammal Health (2cr UG/G)

The course will provide an overview of marine mammal stranding response, health assessments and common diseases of bottlenose dolphins, manatees and sea lions. Lectures will be focused on how marine mammals act as sentinels for ocean health, including the effects of oils spills, harmful algal blooms and marine debris on marine mammals. This course requires participation in marine mammal necropsies, which includes hands-on dissection of carcasses, internal organs, blood, and can have foul smells. Due to potential risk of zoonotic disease, you may not want to participate in necropsies if you are pregnant or immune compromised. Personal protective equipment will be available and is required. A fieldtrip to an aquarium will provide the opportunity to see medical examinations of dolphins and sea lions, and participation in live and dead marine mammal stranding response will be available on a volunteer basis as opportunities present throughout the course. Prerequisites - 3rd or 4th year undergraduate- completion of Dolphins and Whales or Marine Mammals course; graduate student; or consent of the instructor.

Neurobiology Session July 17 - August 04 M-S (9A-5P)

Intro. to Neurobiology (3cr Adv.UG/G)

Students will be introduced to the neuroanatomy and neurophysiology of marine invertebrates and vertebrates. The following aspects of neurobiology will be covered in lectures and laboratory exercises: neurons and glia; passive properties of neurons; resting potentials; action potentials; synaptic transmission; neurotransmitters and receptors; sensory transduction; muscle innervation and contraction; sensorimotor integration; and neurophysiological bases of behavior. In addition, students will use computer simulations that allow a more in-depth exploration of cellular neurobiology than is possible in standard laboratory classes. Students will be introduced to aspects of molecular biology and its applications to neuroscience. This class will include evening and Saturday sessions. The following are recommended but not required: general chemistry and general physics; or permission of the instructor. Prerequisites - introductory biology.

Drs. Strang et al



Albins, Mark A., Ph.D. (Oregon State University, 2011). Research Associate, University of South Alabama. The ecology of reef-associated marine fishes, including effects of invasive species and fishing on populations and communities. <u>malbins@disl.edu.</u>

Anderson, Christopher, Ph.D. (Ohio State Univ., 2005). Professor of Wetland Ecology, School of Forestry and Wildlife Sciences, Auburn Univ. Wetlands; coastal ecology; land use change and watershed management. <u>andercj@auburn.edu</u>

Baker, Ronald, Ph.D. (James Cook Univ., 2006). Assistant Professor, University of South Alabama, and Senior Marine Scientist, Dauphin Island Sea Lab. Coastal and estuarine fisheries ecology; nursery ground ecology; predation and food-web ecology; seascape use of fishery species. <u>rbaker@disl.edu.</u>

Bregy, Joshua, Ph.D. (Indiana University, 2021). Postdoctoral Researcher in Paleotempestology and Paleoclimatology, Department of Geography, Indiana University. Multiproxy paleotempestology/prehistoric hurricane reconstructions; hurricane-climate interactions; coastal hazards and floods; paleoclimatology/hydroclimatology; developing multiproxy techniques; coastal geology/geomorphology; and dendrochronology. jbregy@indiana.edu

Carmichael, Ruth, Ph.D. (Boston Univ., 2004). Senior Marine Scientist III DISL, Professor, School of Marine and Environmental Sciences, Univ. of South AL. Research combines traditional ecological techniques with elemental and telemetry methods to understand how organisms, from shellfish to marine mammals, respond to environmental perturbations including physiological responses, changes in growth and survival, or movement patterns. <u>rcarmichael@disl.edu</u>.

Dorgan, Kelly M., Ph.D. (Univ. of Maine, 2007). Senior Marine Scientist I DISL, Assistant Professor, Dept. of Marine Sciences, Univ. of South AL. Sediment ecology, focused primarily on organism-environment interactions; biomechanics and energetics of burrowing; biological-physical interactions; functional morphology of invertebrates. <u>kdorgan@disl.edu</u>.

Drymon, J. Marcus, Ph.D. (Univ. of South AL, 2010). Assistant Extension Professor, MSU Coastal Research and Extension Center. Research interests include marine fisheries ecology, specifically trophic interactions/foodweb dynamics of upper trophic-level predators and ecosystem based fishery management. <u>marcus.drymon@msstate.edu</u>.

Elliott, Emily A. (Timmons), Ph.D. (Univ. of North Carolina at Chapel Hill, 2017). Postdoctoral Researcher/ Adjunct Faculty, Univ. of Alabama. Coastal geology and geomorphology, paleo- and geochronology, sedimentology and paleotempestology, focusing on understanding the climatic drivers of coastal change. <u>emily.elliott@ua.edu</u>.

DISL Summer Program Faculty/Research Interest

Fleming, Jonathan P., Ph.D. (Mississippi State University, 2012) Associate Professor, Department of Geography and Sociology, Howard College of Arts and Sciences, Samford University. Current research topics include identifying mechanisms and patterns of species invasions, aquatic and wetland plants, and spatial ecology projects using applied GIS to understand contemporary environmental change. <u>j.fleming@samford.edu</u>

Gier, Paul J., Ph.D. (Univ. of Oklahoma, 1997). Professor of Biology, Huntingdon College, Montgomery, AL. Zoology, ecology, and evolution. Conservation biology of insects, sexual selection and the evolution of vertebrate mating systems. <u>pgier@hawks.huntingdon.edu</u>.

Henning, Jeremiah A. Ph.D. (University of Tennessee, 2017). Assistant Professor, University of South Alabama. Coastal plant community ecology, biodiversity-ecosystem function linkages, mycorrhizal fungi, plant-microbe interactions, global change ecology. <u>henning@southalabama.edu</u>.

Hoadley, Kenneth, Ph.D (University of Delaware, 2016) Senior Marine Scientist I DISL, Assist. Professor, Dept of Biological Sciences, University of Alabama. Current research topics include coral reef biology and marine algal photobiology and primary production. <u>khoadley@disl.edu</u>

***Keyser, Kent, Ph.D.** (SUNY Stony Brook, 1980). Professor, Dept. of Vision Sciences, Assistant Vice President for Research, Univ. of AL B'ham. Communication between neurons: neurotransmitters, neurotransmitter receptors in the retina and brain. <u>ktkeyser@uab.edu</u>.

Krause, Jeffrey, Ph.D. (Oregon St. Univ., 2008). Senior Marine Scientist III DISL, Professor, School of Marine & Environmental Sciences, University of South Alabama. The biogeochemical cycle of silicon in the water column, sediments, and cryosphere and the fate of diatom organic matter in aquatic ecosystems. <u>jkrause@disl.edu</u>.

Lewis, Jennifer, Ph.D. (Fla. Int. Univ., 2010). Director, Tropical Dolphin Research Foundation. Animal movement and the benefits of group formation; foraging ecology; behavioral ecology of tropical dolphin species; marine ecological conservation with focus on non-lethal effects of vessel traffic on marine species. <u>jlewi006@fiu.edu</u>.

Moss, Anthony G., Ph.D. (Boston Univ., 1986). Associate Professor of Biological Sciences, Marine Biology Program Coordinator, Auburn Univ. Ctenophores and jellyfish, salps, marine microbial biology, cilia & flagella. <u>mossant@auburn.edu</u>.

***Smee, Lee, Ph.D.** (Georgia Tech, 2006) Chair DISL University Programs, Senior Marine Scientist II DISL, Assoc.Professor, Dept. of Marine Sciences, Univ. of South AL. Current research topics include oyster reef ecology, mangrove encroachment, pesticide effects on blue crabs, and biogeography of seagrass communities in the Gulf of Mexico. <u>Ismee@disl.edu</u>



***Sprinkle, Amy, Ph.D.** (Univ. of Del., 2009). Marine Science Instructor, Univ. South AL. Oceanography, chemical & biological oceanography, marine biology, biological sciences, terrestrial and aquatic ecology, and trophic dynamics. <u>sprinkle@southalabama.edu</u>

Steinmuller, Haveland, Ph.D. (University of Central Florida, 2019). Senior Marine Scientist, DISL; Assistant Professor, School of Marine and Environmental Sciences, University of South Alabama. Research focuses on how biogeochemical cycling of carbon, nitrogen and phosphorus within coastal systems (mangroves, tidal marshes, intertidal oyster reefs) responds to disturbance, including sea-level rise, eutrophication, and extreme events. <u>hsteinmuller@disl.edu</u>

Stoeckel, Jim, Ph.D. (Miami University, 2007). Associate Professor, Auburn Univ., School of Fisheries, Aquaculture, and Aquatic Sciences. Crustacean and molluscan ecology and aquaculture; physiological ecology; ecotoxicology; special focus on burrowing crayfish and mussels. <u>jas0018@auburn.edu</u>.

Strang, Christianne, Ph.D. (Univ. of Ala. at B'ham., 2004). Assistant Professor, Dept. of Psychology, Univ.of AL B'ham. Visual processing in health and disease. <u>cstrang@uab.edu</u>.

Temple, Nigel A., Ph.D. (Mississippi State University, 2021). Assistant Professor, Department of Civil, Coastal, and Environmental Engineering, University of South Alabama. Coastal Restoration Ecology, Wetlands, Waves, Low-cost Environmental Sensing. <u>natemple@southalabma.edu</u>

Titus, Benjamin, Ph.D. (Ohio State Univ., 2017). Assistant Professor of Marine Biology, Dept. of Biological Sciences, Univ. of Alabama. Evolution and ecology of tropical marine symbiosis; phylogenetics; biogeography; sea anemones; clownfish; cleaning mutualisms; coral reefs. <u>btitus@disl.edu</u>

***Valentine, John, Ph.D.** (Univ. of Ala., 1989). Executive Director and Senior Marine Scientist III DISL, Professor, Dept. of Marine Sciences, Univ. of South AL. <u>jvalentine@disl.edu</u>.

Wibbels, Thane, Ph.D. (Texas A&M Univ., 1988). Associate Professor of Biology, Univ. of AL B'ham. The biology of temperature-dependent sex determination in reptiles, including emphasis on its implications for the ecology, evolution and conservation of sea turtles. <u>twibbels@uab.edu</u>.

Wofford, Sarah, Ph.D. (Bowling Green State University, 2017). Assist. Professor, Dept. of Biology, Jacksonville State Univ. Current research topics include the aggressive behaviors of aquatic invertebrates, the chemical ecology of social interactions, and the effects of environmental change on resource acquisition and agonistic behaviors. <u>swofford@jsu.edu</u>

Woodrey, Mark, Ph.D. (Univ. of Southern Miss., 1995). Avian Ecologist/Coastal Ecologist at MS State Univ., Research Coordinator at Grand Bay National Estuarine Research Reserve. Marsh bird ecology and conservation; monitoring programs for biological resources; tidal marsh ecology; ecological effects of sea level rise on coastal ecosystems. <u>msw103@ra.msstate.edu</u>.

*These faculty are not instructing undergraduate courses this year.

Dauphin Island Sea Lab Facilities Map



- * 1. Administrative Offices, Registration, Classroom and Study Hall
 - 2. Maintenance/Vehicle-Boat Yard
 - 3. Albatross Hall (Closed)
 - 4. Laundromat
 - 5. DHP Computer Lab/Classroom 5
 - 6. Endeavor Hall (Classrooms)
 - 7. Basketball, Volleyball Courts
 - 8. Discovery Hall (Classrooms/Offices)
 - 9. Horizon Hall (Classrooms/Offices)
 - 10. Galathea Hall (Class/Meeting Room)
 - 11. Sea Pines
 - 12. Swimming Pool
 - 13. Mesocosm Facility
 - 14. Future Aquatic Center
 - 15. May's Cafe
 - 16. Challenger Hall (Dormitory)
 - 17. Beagle Hall (Dormitory)
 - 18. (#1-10), Faculty Housing
 - 19. Multistressor Lab Building
 - 20. Wiese Marine Science Hall
 - 21. Husbandry Building
- * 22. Alabama Aquarium, Gift Shop
- * 23. Living Marsh and Boardwalk
- * 24. Ladner Pavilion
 - 25. Auburn Univ. Shellfish Lab
 - 26. Wet Lab
 - 27. Shelby Fisheries Management Cente
 - 28. Marine Mammal Research Center
- * A. To the Water Tower and Audubon Sanctuary
- ***** B. To Fort Gaines
 - C. To Gulf Of Mexico Beach
 - **D. To DISL Research Vessels**

* - OPEN TO THE PUBLIC



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- Microbial ecology
- Molecular biology & genetics
- Biogeochemistry
- Benthic ecology
- Trophic interactions
- Toxicology
- Plankton ecology
- Marine mammal ecology
- Physical oceanography



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Small Class Size



