Advanced Marine Biology: BSC 4312C-RI
Spring 2023

Lecture: Tuesday and Thursdays from noon to 1:15 PM in Biology Building, Room 212
Laboratory: Saturdays in Field Building classroom (Building 92) or off-campus

Instructor: Dr. Linda Walters
Office: Biology 401C **Office Phone**: 407-823-2148 **E-mail**: linda.walters@ucf.edu
Family Cell Phone: 407-443-6943 (husband Paul answers most of the time)

Web Site for Course: BSC 4312 on Webcourses. Site will house syllabus, course notes, grades, announcements, etc. My lab Facebook site (Coastal and Estuarine Ecology Lab) will house class photos.

Office Hours: Tuesdays and Thursdays from 1:15 – 3:15, Fridays from noon – 1 PM or by appointment. If University business requires me to miss listed office hours, please contact me and we can schedule to meet at another time. Please make an appointment to meet with me via email, even if scheduling during office hours, to ensure I am ready and available to answer your questions.

Graduate Teaching Assistant: Katherine Harris
Office: Biology 410 **Email:** k.harris@knights.ucf.edu
Office Hours: Tuesday/Thursdays from 9:45 – 11:45 AM, Wednesdays from 2:30 – 3:30 PM. Katherine will assist with all class-related questions, transportation, grading, and research projects.

Undergraduate Teaching Assistant for Labs: Colleen Gilbride
Email: cgilbride5@knights.ucf.edu
Colleen will assist with field and laboratory research projects.

This section of **BSC 4312C** *is a Research Intensive (RI) course. This designation will be noted on your transcripts. Research-Intensive is one of the four High Impact Practice course designations at UCF, along with Service Learning, Integrative Learning, and Global Learning. High Impact Practice courses are some of the most challenging and rewarding at UCF. You will actively engage in research processes and a significant portion of your grade will be derived from course-related project(s) based on original research and/or creative scholarship.*
If you have any questions about this designation or HIP designations at UCF, please contact hip@ucf.edu

Course Objectives: Focus on the High Impact Practices (HIP) of "Research Intensive" to improve marine biology knowledge and career readiness/success

1) Enhance comprehension of important topics in marine biology, with a focus on current crises in our region.
2) Improve career readiness by focused efforts on reference letters and curriculum vita (both the document text and increasing the number of entries in your document).
3) Hands-on research experiences focused on field marine biology from initiation through completion.

4) Improved science presentation skills through poster presentations at Indian River Lagoon Symposium in February (Fort Pierce, FL – vans provided) and the on-campus UCF Student Scholars Symposium (SSS) in late March and/or the HIP Showcase in April. An extra conference for undergraduates called SHORE (Sharing Our Research with Everyone) will be an extra credit option on Friday, April 21 in New Smyrna Beach, FL).
5) Improved writing skills by preparing manuscripts for the UCF Undergraduate Research Journal.
6) Improve knowledge of marine biodiversity in Florida.

Required Materials (Important: All books are library-sourced FREE textbooks! Go to Research Guide in Webcourses for this class for instructions through Adobe Digital Additions):

1) *Let Them Eat Shrimp. The Tragic Disappearance of the Rainforests of the Sea.* Warne, K. 2011. Island Press. ISBN 978-1597266833.
2) *Vaquita: Science, Politics, and Crime in the Sea of Cortez*. Bessesen, Brooke. Island Press. 2018. ISBN: 9781610919319.
3) *A Poison Like No Other*: *How Microplastics Corrupted Our Planet and Our Bodies.* Simon, Matt. Island Press. 2022. ISBN 9781642832358. (**This book replaces *Thicker than Water* by Erica Cirino)**

Recommended Materials:

1) PowerPoint slides will be available on Webcourses.

Academic Honesty:

Please understand that I expect you to completely abide by the UCF Golden Rule (http://goldenrule.sdes.ucf.edu). Breaking the Golden Rule in **any** way, including cheating or intent to cheat on quizzes, submitting assignments that are not entirely your own work, or using materials borrowed from students from past classes, will result in an ZF in the course and your name will be immediately submitted to the UCF Disciplinary Action Committee. No plagiarizing, no copying on reports or other written/photo assignments, no exceptions. Turnitin.com or I-authenticate may be used at any time during the semester at my discretion. Use of AI created documents is not permitted in this course.

Classroom Conduct and Attitude:

I expect everyone will regularly participate in this class in a positive way. Disrupting the class, arriving late to class, rude behavior to the instructor or your colleagues, sleeping in class or during labs, cell phones ringing during class or speaking on a phone/texting/working on non-class materials on any electronic device during lecture/lab, or disobeying any class rules will cause you to lose class participation points at my discretion. If the disruption is excessive, the Biology Department Chair will be brought in to assist with the situation. Offering to drive vans is a positive and you will receive extra credit points for your assistance. **Potential van drivers MUST complete a driving form at least 3 working days before driving UCF vehicles.** Form is available at: https://sciences.ucf.edu/biology/wp-content/uploads/sites/2/2017/12/Driver-Registration-Form.pdf

Grading:
There will be no traditional hour exams or final exam in this class. There are 200 points for the semester with point distributions listed below. Grades for the semester will be awarded using the following +/- scale: A+ (100% or higher), A (92-99%), A- (90-91%), B+ (88-89%), B (82-87%), B- (80-81%), C+ (78-79%), C (72-77%), C- (70-71%), D+ (68-69%), D (62-67%), D- (60-61%), < 60% = F. If your point total rounds out to 0.5 or higher, you will receive the next higher grade. For example, an 89.45 = A-. There will be extra credit opportunities, but no additional curving of grades. If you decide to drop this course, please remember to officially withdrawal from the class before 11:59 PM on Friday, March 25, 2023. There are no NC or WP grades in this class. Assignments in class can only be made up if the absence is excused by Dr. Walters (written documentation required from medical, police, university activity). Please do not assume your excuse will be counted as "excused" without confirmation. Grades will be available in class, on Webcourses' and/or from instructor as soon as possible after assignments submitted. Late assignments will be graded as follows (Saturdays included, Sundays excluded): deduct 50% for up to 24 hours late from the start of the class in which the assignment was due and deduct 75% if 24-48 hr late. There will be no credit if submitted more than 48 hr late. If you have approval from Student Support Services to have extra time on assignments/quizzes, please discuss with me the first week of the semester so we can work out the best arrangement for you.

Participation Grade:
To promote dialogue and class engagement, 10% of your final grade (20 points) is based on participation. This grade is not based on simply showing up for class/lab and being distracted by your electronic devices, doing homework for other classes, or sitting/sleeping passively for 75 minutes. Doing these will get you 0 participation points. If you show up to class/lab, participate each day in a meaningful way, then you will receive all these points. If you occasionally participate, you will receive partial credit for participation. The GTA will track both engagement and participation. If you have any medical/social conditions that prevent you from fully participating in class discussions, these must be discussed with Dr. Walters within the first week of the semester so accommodations can be made.

Extra Credit:
Extra credit opportunities will occur both in class and outside of instruction hours. These points will be added on to your point total before calculating the final percentage grade. In lecture, extra credit opportunities may arise via bonus quiz questions (point values to be determined). Helping with field/lab research or substantial marine-oriented community events outside of class time will earn you one point for each hour worked. Travel time from UCF main campus is included if the work is off-campus. Going to marine-oriented scheduled seminars in Biology or other related events on campus will additionally earn you 1 point on each occurrence. The maximum number of extra points for efforts outside of quizzes for the semester = 20 points (10% of total points available).

Point Values for All Assignments (due dates):

Please note that all assignments are due at the start of class/lab on the date listed. Late assignments will be graded as described above.

In-Class Participation **20 points (10% of grade)**
Described above under participation grade.

In-Class Quizzes **40 points (20% of grade)**
Expect there to be short in-class quizzes associated with: 1) class readings, 2) flora/fauna biodiversity identifications, and 3) class debates on current topics that the class chooses. These will occur each Tuesday of the semester and you will know the quiz focus the prior week.

Curriculum Vita AND Draft Letter of Support **20 points (10% of grade)**
Every scientist needs to have their updated curriculum vita (cv) ready to share at all times. Through peer review and instructor feedback, we will strive to improve everyone's cv to make you all more marketable. Likewise, everyone should have developed a professional relationship with one or more faculty members who you are confident will write you a reference letter when needed. What you need to be able to provide them with is your updated cv and this draft letter. We will work on both in class – with deadlines at the beginning and the end of semester.
January 17: Draft cv and letter due for peer review. Please bring hardcopy of each to class.
January 18-20 at noon: Window for optional instructor/GTA/UTA feedback (no documents will be accepted after this time for critique).
January 24: Final cv/letter due for grade.
April 27 at 10 AM: Final, edited cv and letter due to Dr. Walters.

Group Research Project 1 (Microplastics and Hurricanes) **50 points (25% of grade)**
Abstract already submitted to the Indian River Lagoon Symposium. Symposium is Thursday, February 23 in Fort Pierce, FL, and class will be presenting poster on this topic at it. If you want to attend in person, registration ($20) is due asap to: https://epay.fau.edu/C20081_ustores/web/product_detail.jsp?PRODUCTID=3665) and UCF is providing vans to venue. If cost is an issue, please talk to me asap.
Second abstract will be developed by class for the UCF Student Scholar Symposium (SSS) that is due on January 30 **OR** to the HIP Showcase that is due March 24 (group grade).
Poster due to me and SSS/HIP Showcase one week before showcase (group grade). SSS Showcase dates are March 27-28 (f-2-f). HIP Showcase dates are April 17-22 (virtual) with in-person event on April 19. For the HIP Showcase, you must submit a poster and a video.
Reflection (individual grade).
Individual Participation Evaluation from self, professor, GTA and your peers (individual grades).

Group Research Project 2 (Mangrove Incursions on Oyster Reefs) **50 points (25% of grade)**
Abstract to be developed by class for the UCF Student Scholar Symposium (SSS) **OR** HIP Showcase (dates as above).
Poster due to me and SSS/HIP Showcase one week before event (group grade).
Reflection (individual grade).
Individual Participation Evaluation from self, professor, GTA and your peers (individual grades).

Manuscripts for Planned Submission to the UCF Undergraduate Research Journal
20 points (10% of grade)
Two manuscripts will be developed – one associated with each research project. Approximately 10 students will work on each manuscript, following the format and depth of content of the

journal standards. Multiple drafts can be submitted and the deadline to submit draft to be in the start of our final exam period on Thursday, April 27 at 10 AM.
There will be a group grade for the document and individual participation grades from self, professor, GTA and peers. Must be submitted at start of our final exam period on Thursday, April 27 at 10 AM.
Please note that I will help teams who want to submit these manuscripts after semester ends, but I cannot require nor will I (or Katherine) nag you to do so. There is an expiration date for graduating seniors of 12 months post-graduation to submit to the journal.

Tentative Lecture Schedule (subject to change):
Please note that the book discussions will be ongoing throughout the semester. We will start each discussion where we left off the previous date. Class will be provided with new chapters to read for each class. Our first book will be, "*A Poison Like No Other*".

January 10: Syllabus, Introduction to course.
January 12: Discussion of how to improve your curriculum vita, How to get a great reference letter, etc. **Drop deadline by 11:59 PM.**
FRIDAY, January 14: Add deadline by 11:59 PM.
January 17: Peer review of draft cv/letter, class discussion. First quiz.
January 19: Class discussion
January 24: Submit final cv/letter to Dr. Walters for grade by start of class, Class discussion
January 26: Class discussion
January 31: Class discussion
MONDAY, January 30: Abstracts due for SSS Research Showcase by 11:59 PM

February 2: Class discussion
February 7: Class discussion
February 9: Class discussion
February 14: Class discussion
February 16: Class discussion
February 21: Class discussion
THURSDAY, February 23: Indian River Lagoon Conference in Fort Pierce, FL – all day, no class meeting. Space in van for class members to attend if interested to present class poster. Rest of class will live-stream during class hours.
February 28: Class discussion

March 2: Class discussion
March 7: Class discussion
March 9: Class discussion
March 13 – 19: Spring Break! No class!
March 21: Class discussion, conference preparations
March 23: Class discussion, conference preparations
March 28: Class will occur at the SSS Symposium in Student Union
March 30: Class discussion, conference preparations

April 4: Class discussion, Begin crafting manuscripts.

April 6: Class discussion
April 11: Class discussion
April 13: Class discussion
April 18: Class discussion
April 20: Last class!
April 27 (Thursday of finals week): Submit final deliverables by 10 AM

Laboratory: Your laboratory grade is integrated into your final course grade; it is not a separate grade. Closed-toe shoes and sufficient warm clothes are required for all wet labs. Please expect to get wet and muddy in the field. Additional materials needed for field labs will be discussed as appropriate.

Tentative Laboratory Schedule (subject to change, especially based on weather):

All dates listed are Saturdays from 9 AM – noon unless otherwise stated. All labs are required if occur within this time window. Labs that run longer than this are optional but must be discussed with Dr. Walters to find an alternative assignment.

January 14: Microplastics training at the Biology Field Building lot (building 92). 9 AM – noon.

January 21: Microplastics field data collection + use of refractometers, departing from the Biology Field Building at 7:30 AM. Vans will separately collect water samples and meet at Marine Discovery Center at 9:30 AM. On site, we will learn about wetlands/saltmarsh plant biodiversity, including mangroves (bring camera) and collect *Spartina alterniflora* for restoration planting. We will depart MDC by 11 AM to return to campus by noon.

January 28: Florida Institute of Oceanography research cruise on the RV Hogarth. We will depart from the Biology Field Building lot (building 92) at 6:30 AM and return by 5:30 PM. Lunch provided, van driver needed. This will be day to learn Gulf of Mexico fish and invertebrate biodiversity (bring camera).

February 4: Process microplastics water samples at Biology Field Building for minimum of 3 hours per person. Time ranges from 8 AM – 1 PM.

February 11: Process microplastics water samples at Biology Field Building for minimum of 3 hours per person. Times ranges from 8 AM – 1 PM.

February 18: Prepare poster on microplastics for IRL Symposium. We will work at the Biology Field Building from ~9 AM – ~noon.

February 25 (low tide: 10 AM): Everyone will assist in the field either today or March 11 with our second research project. 10 students will collect mangrove data on Mosquito Lagoon oyster reefs. Depart UCF at 6:30 AM and return at ~3 PM. Van provided if driver available. Katherine will be driving truck to launch boat and truck can hold 2 passengers.

March 4: Everyone will participate in "volcano" making for shoreline restoration units at Marine Discovery Center in New Smyrna Beach. We will also be touring the facility and seining to look at estuarine biodiversity (bring camera). Depart UCF at 8 AM and return at ~noon.

March 11 (low tide: 8:30 AM): Everyone will assist in the field today or February 25 with our second research project. 10 students will collect mangrove data on Mosquito Lagoon oyster reefs. Depart UCF at 6:00 AM and return at ~1 PM. Van provided if driver available. Katherine will be driving truck to launch boat and truck can hold 2 passengers.

March 18: Spring break, no lab.

March 25 (low tide: 9:40 AM): Everyone will assist in the field a second time for our second research project either today or April 8. 10 students will collect mangrove data on Mosquito Lagoon oyster reefs after deploying oyster restoration patties on a reef. Depart UCF at 6:30 AM and return at ~2:00 PM. Van provided if driver available. Katherine will be driving truck to launch boat and truck can hold 2 passengers.

April 1 (low tide: 3 PM): Living shoreline stabilization event run by Drs. Donnelly and Walters. Depart UCF at 7:30 AM and return ~2 PM.

April 8 (low tide: 8:22 AM): Everyone will assist in the field a second time for our second research project either today or March 25. 10 students will collect mangrove data on Mosquito Lagoon oyster reefs after deploying oyster restoration patties on a reef. Depart UCF at 6:00 AM and return at ~1:00 PM. Van provided if driver available. Katherine will be driving truck to launch boat and truck can hold 2 passengers.

April 15: Entire class will work on second poster presentation at Biology Field Building (9 AM – noon).

April 22: No lab, time to work on finishing manuscripts in teams.

EXTRA CREDIT OPPORTUNITIES (more to be listed) To sign up, please contact Dr. Walters via email (linda.walters@ucf.edu). For off-campus efforts, you need to organize your own transportation. Car-pooling is highly recommended.

Friday, January 13: Mangrove gardening behind Building 92. 3 – 5 PM. No rsvp required.

Sunday, January 15: Oyster reef monitoring in Mosquito Lagoon. 8 AM - ~2 PM on site. Paul, Linda, Luciana, 4 more people needed.

Monday, January 16: oyster reef monitoring in Mosquito Lagoon. 9 AM - ~3PM in site. Paul, Linda, 5 more people needed.

Wednesday, January 18: Mangrove gardening behind Building 92. 3-5 PM. No rsvp required.

Sunday, January 22: Oyster patty making with CCA and Mud Hole behind Building 92. All welcome, but rsvp is required.

Wednesday, January 25: Mangrove gardening behind Building 92. 3-5 PM. No rsvp required.

Friday, February 3: Mangrove gardening behind Building 92. 3-5 PM. No rsvp required.

Friday, February 17: SPARK Fest at Orlando Science Center. Shifts from 10 AM – 3 or 4 PM. Need to rsvp with time available. Katherine, Linda, Paul, need lots of help.

Friday, March 31. Shoreline stabilization in Canaveral National Seashore. 9 AM – noon on site. All welcome, but rsvp is required.

Upcoming Conferences:
IRL Symposium: Thursday, February 23 in Fort Pierce, FL.
FURC (undergraduates only): February 17-18 in Miami, FL.
UCF Student Scholar Symposium: March 27-28 on campus.
HIP Course Showcase on campus (undergraduate classes only) – virtual from April 17 – 22. F-2-f showcase on April 19 on campus.
SHORE (undergraduates only): Friday, April 21 from 10 AM – 4 PM at the Brannon Center in New Smyrna Beach.
Marine Benthic Ecology Meeting: April 26-29 in Miami, FL (national/international meeting).