

Welcome to the Zoogeography course! online for Fall 2020

BIOL 340.01 (CRN 11801)

Syllabus

Course Overview: We will be working together throughout the semester as we learn about how organisms are distributed across the globe and what processes, be they ecological or evolutionary in nature, may explain them. I think this subject area is key to gaining a fuller, more comprehensive understanding of biology. Tony Harold



Class location and schedule: Online with online scheduled meetings Tues/Thur 1:40 - 2:55 PM.

I will be happy to meet with you on Zoom during scheduled office hours or at any other mutually agreeable time. I will be available to discuss the course subject matter, the assignments, tests or whatever! I keep an eye on my email and will try to reply within the next day.

Instructor: Dr. Tony Harold (Antony S. Harold), Professor, Grice Marine Laboratory (GML), College of

Course Description:
Zoogeography lecture, 3 credit hours

***last day for Drop/Add August 31, 2020**

An introduction to the study of geographic distribution patterns of organisms, their origins and their significance for ecology and evolution.

Charleston, 205 Fort Johnson, Charleston, SC 29412. Office phone (843) 953-9180; cellular (843) 460-2057; email harolda@cofc.edu
Office and mailbox locations: GML Annex, Rm. 125. Mailbox located in GML 102.
Office hours: Online (Zoom) every Friday from 11:00 to 11:45 AM or by appointment.

Short Biography: I received my B.S., M.S. from the University of Toronto and PhD from Memorial University of Newfoundland, followed by postdoctoral research at the Smithsonian Institution (Washington, DC) and the California Academy of Sciences (San Francisco). I joined the College of Charleston in the mid 1990s where I have mainly taught Evolution, Zoogeography and Biology of Fishes (Ichthyology). The focus of my research is the evolution, ecology and biogeography of marine fishes.

Course Objectives

The primary objectives are to become familiar with patterns of geographic distribution of various kinds of organisms, and to apply process theories, such as those involved in species and community ecology, dispersal, and evolution to explain those patterns. The course will finish by applying this knowledge to a synthetic critique project and considering some of the current issues that link biogeography and biodiversity.

Student Learning Outcomes

You are expected to show mastery in the broad areas of environmental factors and their variation on a range of spatial and temporal scales as they relate to the distribution of organisms, and the principles of and their application

Student learning outcomes in summary

By the end of the course students will be able to...

- examine patterns of geographical distribution of organisms and discover repetitive patterns.

to ecological and evolutionary biogeography. The degree to which students have learned this material will be evaluated by (a) written quizzes and exams, and (b) their ability to critically evaluate conceptual material and published works in biogeography, and write about their findings in a Critique Project report that will be graded.

- evaluate competing explanations for geographic patterns on both ecological and/or evolutionary time scales.
- compare and contrast merits of published papers from the scientific literature on Zoogeography and Biogeography.
- apply knowledge of patterns and processes in biogeography to evaluate and critique a published paper in this field.

Policies and Requirements

1. Academic integrity: For information on the Honor Code, Academic Integrity and related issues refer to <http://deanofstudents.cofc.edu/honor-system/index.php>. Lying, cheating, attempted cheating, and plagiarism are violations of our Honor Code that, when suspected, are investigated. Each incident will be examined to determine the degree of deception involved.

Cases of suspected academic dishonesty will be reported directly by the instructor and/or others having knowledge of the incident to the Dean of Students. A student found responsible by the Honor Board for academic dishonesty will receive a XXF in the course, indicating failure of the course due to academic dishonesty. This status indicator will appear on the student's transcript for two years after which the student may petition for the XX to be expunged. The F is permanent. Students can find the complete Honor Code and all related processes in the Student Handbook at: <http://studentaffairs.cofc.edu/honor-system/studenthandbook/index.php>."

2. Attendance Policy: You are expected to attend all meetings of the class. Students with a valid reason for missing a class should report this to Dr. Harold by email. Your attendance at scheduled class meetings is a part of your participation in the course and will contribute to your grade. In response to the ongoing pandemic the administration requests that absences not be reported to the Office of the Dean of Students as is usually done.

3. Community and Communication

As stated in the Student Handbook: “a college classroom requires a higher level of courtesy than many people exercise in ordinary public space. Everyone in a classroom is there for the purpose of learning, and no one should be able to deprive another person of the chance to learn. Expressions of rudeness and even carelessness degrade the high purpose of learning that should be paramount in a college classroom.” This applies equally to the online classroom.

Always work towards maintaining a respectful and supportive environment in online and all other modes of communication.

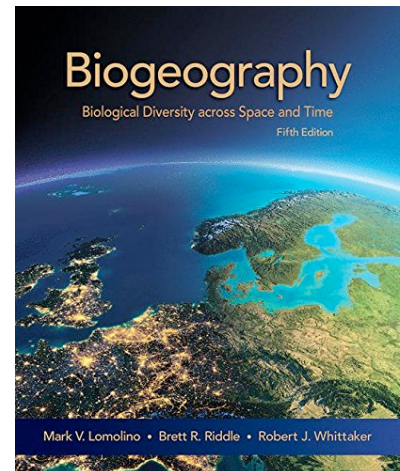
4. Disabilities Statement and Accommodation; SNAP.

The College will make reasonable accommodations for persons with documented disabilities. Students should apply for services at the Center for Disability Services/SNAP (<http://disabilityservices.cofc.edu/>) located on the first floor of the Lightsey Center, Suite 104. If working from off-campus contact the Center for Disability Services by email (snap@cofc.edu). Students approved for accommodations are responsible for notifying me as soon as possible and for contacting me at least one week before accommodation is needed (for tests or for meeting other relevant course requirements). If you require accommodation for religious purposes please make those needs known to me during the first week of classes.

5. Required Materials

Textbook: Lomolino, Mark V., Brett R. Riddle, and Robert J. Whittaker. 2016. *Biogeography*, Fifth Edition. Sinauer Associates, Inc., Sunderland, Massachusetts, [ISBN 9781605354729].

Hardware/software: A laptop or desktop computer with webcam will be needed. Sufficient memory and speed resources for using VoiceThread, Zoom and downloading articles and illustrations of various kinds. Access to the internet, word-processing software such as MS Word are essential.



6. Critique Project

This major assignment is designed to introduce you to reviewing papers in the primary scientific literature. You will be assigned a paper from the published primary biogeographical literature to critically read. A detailed set of instructions will be distributed by email near the mid-term. The assignment includes a requirement to find one other article (similar in terms of both content and its conceptual basis) upon which to base comparisons with the assigned review article. Those comparisons should be made within the framework of the questions provided in the instructions. You will write up your results in the form of a manuscript review, with a maximum of four pages of text, plus your cited references, and any figures or tables. Your paper should be formatted as an article for the *Journal of Biogeography* (access through the library's e-journals).

7. Graded work:

A. Six Quizzes (5% each)	30%
B. Midterm exam	20%
D. Critique Project (Paper)	15%
E. Final Examination (entire course)	20%
F. Discussion Board Posts	10%
G. Participation (participation in class, attendance, adherence to course policies)	05%

Grading scale:

A	94-100%	B-	80-83%	D+	67-69%
A-	90-93%	C+	77-79%	D	64-66%
B+	87-89%	C	74-76%	D-	60-63%
B	84-86%	C-	70-73%	F	<60%

8. Course environment

The lectures are going to be posted on OAKS sequentially as VoiceThread (over PowerPoint files) and will be available throughout the semester once they have been posted. We will also have a weekly class meeting on Zoom to discuss lecture material and anything else relevant to the course and zoogeography/biogeography. We also make use of the OAKS Discussion Board for raising questions and carrying on an exchange of ideas throughout the semester and your activity on the Discussion Board will account for a portion of your grade (see Part 8, "Grading", above). There are dates indicated in the Schedule below for when Discussion Board posts/replys are due for each Module or groups of Modules. I will explain this further during class meetings and send reminders now and then.

I like to use email for a lot of the question/answer through the semester. There is also a Comment function on Zoom which I hope you will use while we have our online class meetings. During Zoom sessions I prefer that any questions or comments you have are posted that way rather than making an audio/video statement. Those questions and the ensuing discussion will be a great contribution to understanding the course material so please don't be shy about posting something.

Most of the lecture material will be VoiceThread so you will be able to work through it at your own pace, however I suggest you try to do each lecture according to the posted class schedule. The exact date/time of each Zoom class meeting will be sent out to the class by email several days in advance but those sessions will always take place during one of our scheduled slots (Tues/Thur 1:40 - 2:55 PM).

9. TENTATIVE COURSE SCHEDULE

Readings¹ prefixed by “LRW” are chapter numbers (followed by the assigned page number range) in the course textbook *Biogeography* by Lomolino et al. (2016).

Date	Module Content/Activity	Assignments/Tests	Read ¹
August			
Module 1, Aug 25 to Sept 07			
Tue 25	Introduction to Zoogeography/Biogeography		
Thu 27	The nature of biogeography		LRW 1:1–11
September			
Tue 01	History of biogeography		LRW 2:13–38
Thu 03	History of biogeography	Discussion Board Post Module 1	LRW 2:13–38
Module 2, Sept 08 to 14			
Tue 08	Environmental and geographical settings (the geographic template)	QUIZ 1 (Module 1)	LRW 3:39–59 left, 67 GIS–68 left)
Thu 10	Environmental and geographical settings (the geographic template)		LRW 3:39–59 left, 67 GIS–68 left)
Module 3, Sept 15 to Sept 28			
Tue 15	Distribution of single species		LRW 4:71–100
Thu 17	Distribution of single species	Discussion Board Post Module 2	LRW 4:71–100
Tue 22		QUIZ 2 (Module 2)	
Thu 24	Distribution of communities		LRW 5:101–133
Module 4, Sept 29 to Oct 05			
Tue 29	Geological structure and history	Discussion Board Post Module 3	LRW 8:221–269
October			
Thu 01	Geological structure and history		LRW 8:221–269
Module 5, Oct 06 to Oct 14			
Tue 06	Dispersal	QUIZ 3 (Modules 3 and 4)	LRW 6:143–171 left
Thu 08	Dispersal; Critique paper project topic and information	Discussion Board Post Module 4	LRW 6:143–171 left

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Tue 13		MID-TERM EXAM (Modules 1 to 4, incl.)	
Module 6 Oct 15 to 21			
Thu 15	The biogeography of speciation; discussion of Critique Paper project	Discussion Board Post Module 5	LRW 7:177– 198 left; 203 right–208
Tue 20	The biogeography of speciation		LRW 7:177– 198 left; 203 right–208
Module 7, Oct 22 to Oct 28			
Thu 22	Glaciation and its biogeographic effects	QUIZ 4 (Modules 5 and 6)	LRW 9:271– 310
Tue 27	Glaciation and its biogeographic effects	Discussion Board Post Module 6	LRW 9:271– 310
Module 8, Oct 29 to Nov 04			
Thu 29	Disjunction, endemism and cosmopolitanism		LRW 10:313–344
November			
Tue 03	Disjunction, endemism and cosmopolitanism	Discussion Board Post Module 7	LRW 10:313–344
Module 9, Nov 05 to Nov 11			
Thu 05	Species-Area curve; Island Biogeography		LRW 13:443–457, plus Box 13.2
Tue 10	Species-Area curve; Island Biogeography	QUIZ 5 (Modules 7 and 8)	LRW 13:443–457, plus Box 13.2
Module 10, Nov 12 to Nov 18			
Thu 12	Phylogenetic analysis and the history of lineages	Discussion Board Post Module 8	LRW 11:365–386; plus 7:178 Box 7.1
Tue 17	Phylogenetic analysis and the history of lineages		LRW 11:365–386; plus 7:178 Box 7.1
Module 11, Nov 19 to Dec 01			
Thu 19	Historical (evolutionary) biogeography	Discussion Board Post Module 9 and 10	LRW 12:387–405 left; 416–421 left

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Tue 24	Historical biogeography	QUIZ 6 (Modules 9, 10 and 11)	LRW 12:387-405 left; 416-421 left
December			
Tue 01	Historical biogeography	Discussion Board Post Module 11	LRW 12:387-405 left; 416-421 left
Thu 03	Review (Zoom)	CRITIQUE PAPER DUE (OAKS Drop Box or email to Dr. Harold)	
Tue Dec 08	FINAL EXAM: 1:00-3:00 PM (take-home, online)		