

PCB4460 Disease Dynamics in the Wild (Spring 2022)
Session 2 – February 9, 2022 through March 15, 2022

Course Description

Disease ecology focuses on disentangling the interactions among hosts, pathogens, and their environment. In this course, we will study two important emerging pathogens in wildlife: the chytrid fungus *Batrachochytrium dendrobatidis* (*Bd*) and Ranavirus. The chytrid fungus is exclusively associated with amphibian hosts, whereas ranavirus infects fish, amphibians, and reptiles. We will examine disease dynamics at the community level to understand potential transmission pathways and differences in host susceptibility. This course will integrate field work, lab work, and statistical analyses using R as a programming language. We will be taking samples from live animals including frogs, salamanders, tortoises, and snakes. Students are expected to develop their own projects, including experimental design and data analyses.

Instructor

Ana V. Longo, PhD
Department of Biology
Office Location: 412 Carr Hall
Office Hours: Mondays 2:00 PM – 3:00 PM by appointment only (see below).
Phone: 352.273.4982
Email: ana.longo@ufl.edu

Preferred Methods for Public and Private Communications

Canvas mail should be used for all course-related communications. I will NOT answer emails from external accounts (e.g., GMAIL).

Note: Participation in Canvas Discussions is considered a public conversation within the class.

Course Meeting Times (additional times in the field/lab need to be determined)

Location: CRR 0221

Monday (Period 3 – 5) 9:35 AM to 12:35 PM

Location: CRR 0120

Thursday (Period 7 – 9) 1:55 PM to 4:55 PM

Office Hour Policies

Please use this website to schedule your meeting:

<https://outlook.office365.com/owa/calendar/UFL2@uflorida.onmicrosoft.com/bookings/>

In response to the current COVID-19 outbreak, office hours meetings will be via ZOOM by default, unless the student requests it to be in person. **Students visiting my personal office space will be required to wear a mask.** If a student does not comply to my request, we will move the meeting to an outdoor space (weather permitting).

Course Objectives

After successfully completing this course, students will be able to:

1. Identify amphibians and reptile species from North-central Florida and describe aspects of their life history and host competence.

2. Understand how species can persist with the chytrid fungus and ranavirus.
3. Collect samples from amphibians and reptiles and analyze results.
4. Develop and test hypotheses about disease dynamics in wild populations.
5. Maintain good records of field observations and data, lab protocols, and data files.
6. Learn how to use R programming language to plot data and analyze results.
7. Collaborate in the preparation of a scientific paper.
8. Design a video/written tutorial for a technique or analysis.

Course Textbook (s) and/or Assigned Readings

This course does not have an assigned textbook. Reading material will be available on Canvas.

Grading

Attendance: 20 points

Species Summary: 10 points

Safety Trainings (IACUC + lab safety)*: 10 points

Tutorial*: 20 points

Class Project*: 20 points

Notebook, Data, and R code*: 10 points

Contribution to Collaborative Project*: 10 points

Total: 100 points

Students are required to turn in all assignments marked with an asterisk (*) to receive the final grade.

Grading Scale

Because is an immersion course, students will need to achieve all the objectives through the assignments to pass the class with a grade greater than C+.

Max. 100	Grade
≥90-100	A
≥87	A-
≥85	B+
≥82	B
≥80	B-
≥77	C+
<77	E

Class Attendance and Make-Up Policy

Excused absences are consistent with university policies in the undergraduate catalog (<https://catalog.ufl.edu/ugrad/current/regulations/info/attendance.aspx>) and require appropriate documentation.

Late assignments will not be accepted. No extra assignments will be provided.

Course Evaluation

Students are expected to provide professional and respectful feedback on the quality of instruction in this course by completing course evaluations online via GatorEvals. [Click here for guidance on how to give feedback in a professional and respectful manner.](#) Students will be

notified when the evaluation period opens, and can complete evaluations through the email they receive from GatorEvals, in their Canvas course menu under GatorEvals, or via ufl.bluera.com/ufl/. [Summaries of course evaluation results are available to students here.](#)

COVID-19 Best Practices

In response to COVID-19, the following practices are in place to maintain your learning environment, to enhance the safety of our in-classroom interactions, and to further the health and safety of ourselves, our neighbors, and our loved ones.

If you are not vaccinated, get vaccinated. Vaccines are readily available at no cost and have been demonstrated to be safe and effective against the COVID-19 virus. Visit this link for details on where to get your shot, including options that do not require an appointment: <https://coronavirus.uflhealth.org/vaccinations/vaccine-availability/>. Students who receive the first dose of the vaccine somewhere off-campus and/or outside of Gainesville can still receive their second dose on campus.

You are expected to wear approved face coverings at all times during class and within buildings even if you are vaccinated. Please continue to follow healthy habits, including best practices like frequent hand washing. Following these practices is our responsibility as Gators. Sanitizing supplies are available in the classroom if you wish to wipe down your desks prior to sitting down and at the end of the class. Hand sanitizing stations will be located in every classroom.

If you get sick, stay home and self-quarantine. Please visit the UF Health Screen, Test & Protect website about next steps, retake the questionnaire and schedule your test for no sooner than 24 hours after your symptoms began. Please call your primary care provider if you are ill and need immediate care or the UF Student Health Care Center at 352-392-1161 (or email covid@shcc.ufl.edu) to be evaluated for testing and to receive further instructions about returning to campus. UF Health Screen, Test & Protect offers guidance when you are sick, have been exposed to someone who has tested positive or have tested positive yourself. Visit the UF Health Screen, Test & Protect website for more information.

Course materials will be provided to you with an excused absence, and you will be given a reasonable amount of time to make up work.

If you are withheld from campus by the Department of Health through Screen, Test & Protect you are not permitted to use any on campus facilities. Students attempting to attend campus activities when withheld from campus will be referred to the Dean of Students Office.

Continue to regularly visit coronavirus.UFHealth.org and coronavirus.ufl.edu for up-to-date information about COVID-19 and vaccination.

Online Privacy

Our class sessions may be audio/visually recorded for students in the class to refer back and for enrolled students who are unable to attend live. Students who participate with their camera engaged or utilize a profile image are agreeing to have their video or image recorded. If you are

unwilling to consent to have your profile or video image recorded, be sure to keep your camera off and do not use a profile image. Likewise, students who un-mute during class and participate orally are agreeing to have their voices recorded. If you are not willing to consent to have your voice recorded during class, you will need to keep your mute button activated and communicate exclusively using the "chat" feature, which allows students to type questions and comments live. The chat is automatically recorded, but not shared. As in all courses, **unauthorized sharing of recorded materials without instructor/student knowledge is prohibited.**

Students Requiring Accommodations

Students with disabilities requesting accommodations should first register with the Disability Resource Center (352-392-8565, www.dso.ufl.edu/drc/) by providing appropriate documentation. Once registered, students will receive an accommodation letter which must be presented to the instructor when requesting accommodation. Students with disabilities should follow this procedure as early as possible in the semester.

Class Demeanor

Students are expected to arrive to class on time and behave in a manner that is respectful to the instructor and to fellow students. Please avoid the use of cell phones. Opinions held by other students should be respected in discussions.

University Honesty Policy

UF students are bound by The Honor Pledge which states, “We, the members of the University of Florida community, pledge to hold ourselves and our peers to the highest standards of honor and integrity by abiding by the Honor Code. On all work submitted for credit by students at the University of Florida, the following pledge is either required or implied: “On my honor, I have neither given nor received unauthorized aid in doing this assignment.” The Honor Code (<https://sccr.dso.ufl.edu/policies/student-honor-code-student-conduct-code/>) specifies a number of behaviors that are in violation of this code and the possible sanctions. Furthermore, you are obligated to report any condition that facilitates academic misconduct to appropriate personnel. If you have any questions or concerns, please consult with the instructor.

Basic Needs, Counseling and Wellness Center

Any student who has difficulty affording groceries or accessing sufficient food to eat every day, or who lacks a safe and stable place to live, and believes this may affect their performance in the course, is urged to contact UF food pantry: <https://pantry.fieldandfork.ufl.edu> or the Dean of Students for support. If you or a friend is in distress, please contact umatter@ufl.edu or 352-392-1575 so that a team member can reach out to the student (<https://counseling.ufl.edu/>). Sexual Assault Recovery Services (SARS) available at Student Health Care Center 352-392-1161;

University Police Department: 392-1111 or 9-1-1 for emergencies.

Class Schedule (this schedule can change)

Sunday	Monday	Tuesday	Wednesday	Thursday	Friday	Saturday
FEB			9 1:30PM – 3:00 PM 221 Carr	10 1:55 PM to 4:55 PM 120 Carr	11 Field OSBS	12
13	14 9:35 AM to 12:35 PM 221 Carr	15 Field OSBS	16	17 1:55 PM to 4:55 PM 120 Carr	18 Field OSBS	19
20	21 9:35 AM to 12:35 PM 221 Carr	22 Field OSBS	23	24 1:55 PM to 4:55 PM 120 Carr	25 Field OSBS	26
27	28 9:35 AM to 12:35 PM 221 Carr	MARCH 1 Field OSBS	2	3 1:55 PM to 4:55 PM 120 Carr	4 Field OSBS	5 - <i>SB</i>
6 - <i>SB</i>	7 - <i>SB</i>	8 - <i>SB</i>	9 - <i>SB</i>	10 - <i>SB</i>	11 - <i>SB</i>	12 - <i>SB</i>
Spring Break – Independent time to work on projects						
13	14 9:35 AM to 12:35 PM 221 Carr	15 Final thoughts/ Lunch at courtyard				

Milestones to accomplish per week (This is a tentative schedule)

Week 1 – Feb 9-11

- **On your own:** Complete IACUC trainings/Lab Safety/Occupational health.
- **Wednesday Feb. 9 (1:30PM-3PM 221 Carr Hall):** Intro, expectations, course materials.
- **Thursday Feb. 10 (1:55PM-4:55PM 120 Carr Hall):** Overview of amphibian diseases and fieldwork best practices. Select host species for Species Summary.
- **Friday Feb. 11 (Time TBD):** Exploratory Field Trip to OSBS.

Week 2 – Feb 14-18

- **Monday Feb. 14 (9:35 AM-12:35 PM 221 Carr Hall):** Field methods (swabbing, metadata, population surveys).
- Field Trips to OSBS – project setups and infection survey. Select topic and hypothesis for Class Project.
- **Thursday Feb. 10 (1:55PM-4:55PM 120 Carr Hall):** Lab methods (DNA extractions).

Week 3 – Feb 21-25

- **Monday Feb. 21 (9:35 AM-12:35 PM 221 Carr Hall):** Introduction to R. Plotting data. Select topic for Tutorial.
- **Thursday Feb. 24 (1:55PM-4:55PM 120 Carr Hall):** Lab methods (qPCR). Work on tutorial design.
- Fieldwork OSBS / Labwork / Work on tutorial design.

Week 4 – Feb 28-Mar 4

- **Monday Feb. 28 (9:35 AM-12:35 PM 221 Carr Hall):** Tutorial presentations.
- Fieldwork OSBS / Labwork. Wrap up data collection.

Week 5 – Mar 7-11 SPRING BREAK

- Independent time to work on data analysis and project presentations.

Week 6 – Mar 14-15

- **Monday Mar 14 (9:35 AM-12:35 PM 221 Carr Hall):** Project Presentation. Turn in notebook, data files, and R code.
- **Tuesday Mar 15 (12PM Bartram/Carr Courtyard):** Final discussions and lunch.