IDS 2935: Healthy Wildlife, Healthy People Ouest 2



I. General Information

Class Meetings

- Spring 2023
 - Tuesdays: 12:50 1:40pm in 0002 Matherly Hall
 - Thursdays: 12:50 2:45pm in 0003 Matherly Hall

Instructor

- Dr. Bridget Baker
- 307A Newins-Ziegler Hall
- Tuesdays, 2:30pm 3:30pm, or by appointment; in person or via Zoom: https://ufl.zoom.us/j/4895062272
- bridgetbaker@ufl.edu

Course Description

This Quest 2 course explores the connections between wildlife and human health to address the pressing question: *Why does nearly 50% of newly emerging infectious diseases in people originate in wildlife and what can we do about it?* Relying on the disciplines of wildlife ecology and conservation, veterinary medicine, public health, and global change biology, the course investigates and reflects on the contemporary biodiversity crisis, sustainability, environmental justice, and approaches to complex problems. Major themes include emerging zoonotic agents, One Health, the ultimate and proximate causes driving biodiversity loss, health disparities, wildlife disease surveillance, and problem-solving at the human-wildlife-environment interface. Engagement with these themes occurs at multiple scales, ranging from personal and local to international and continental, through reflections, discussions, and case studies. A field trip to Florida Fish and Wildlife Commission's (FWC) Wildlife Health Unit will allow students to experience wildlife disease diagnosis and surveillance first-hand. The importance of an interdisciplinary, team-based approach will be mirrored by small group assignments throughout the semester, culminating with either a One Health-centered, public educational campaign to promote

awareness or a One Health-centered movement to promote action with a proposed tangible outcome related to an emerging zoonotic agent. 3 credits.

Quest and General Education Credit

- Quest 2
- Biological Sciences

This course accomplishes the <u>Quest</u> and <u>General Education</u> objectives of the subject areas listed above. A minimum grade of C is required for Quest and General Education credit. Courses intended to satisfy Quest and General Education requirements cannot be taken S-U.

Required Readings and Works

There is no textbook for this course. Materials and Supplies Fees: n/a

Provided in Canvas:

- Jerry's Maggot: Chapter 13 (pages 153 167) from a Tropical Nature by Adrian Forsyth and Ken Miyata
- TED talk entitled "How monitoring animal health can predict human disease outbreaks" by Dr. Tracey McNamara (length: 15m)

Provided in class:

- Baraka (documentary film; length 1h 36m)
- Spillover Zika, Ebola & Beyond (PBS documentary; length: 56m)

II. Graded Work

Description of Graded Work

See Annotated Weekly Schedule for additional details regarding graded work.

Reflections (120 points in total, 15% of grade): 6 reflections (20 points each; listed below in the Annotated Weekly Schedule). Grading will be based on adequate length (5 points), organization and clarity (5 points), thoroughness (5 points), and citation of a credible source when applicable (5 points) or thoughtfulness when applicable (5 points). All Reflections will be reviewed through Turnitin. Any plagiarism in your Reflection will result in zero points. Extra credit opportunities are

In-class activities and discussions (140 points in total, 14% of grade): 2 in-class activities (10 points each; listed below in the Annotated Weekly Schedule); 8 in-class discussions (listed below in the Annotated Weekly Schedule) – points vary based on whether the discussion is related to a Reflection, in which case these are worth 10 points for active participation. When not related to a Reflection, these are worth 18 points based on preparation (8 points) and active participation in discussions (10 points).

Exams (270 points in total, 27% of grade): based on the lectures and in-class discussions. The format of each Exam will be a combination of true/false, multiple choice, and short answer questions. Your critical thinking will be assessed.

- Exam 1 will cover Weeks 1-7 (150 points)
- Exam 2 will cover Weeks 9-14 (120 points)

Small group presentations (200 points in total, 20% of grade): 2 presentations (100 points each; listed below in the Annotated Weekly Schedule). Grading will be based on delivery of required, relevant, and accurate content (30 points), professionalism (5 points), participation of each group member (5 points), organization (10 points), clarity (10 points), use of credible sources (10 points), presentation visuals/innovation (10 points), and peer evaluations (10 points related to evaluations from your group members; 10 points related to evaluations from other groups). Standard forms will be provided for peer evaluations.

Experiential learning (270 points in total, 27% of grade):

- Group-related assignments (240 points in total, 24% of grade): 9 group-related assignments points vary based on the assignment. These assignments (listed below in the Annotated Weekly Schedule) are designed to provide experience and foster skills in working productively and communicating successfully in a team environment, transforming lecture material and credible sources into a public educational campaign or One Health-centered movement, and evaluating peers and content systematically and constructively. Two group-related assignments [marked by an asterick (*) within the Annotated Weekly Schedule] will be reviewed through Turnitin. Any plagiarism in your assignment will result in zero points.
- **Required field trip** (30 points in total, 3% of grade): Attendance (20 points) and active participation (10 points) by asking a substantive question during the wildlife necropsy.

Grading Scale

For information on how UF assigns grade points, visit: <u>https://catalog.ufl.edu/UGRD/academic-regulations/grades-grading-policies/.</u>

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

III. Annotated Weekly Schedule

Week	Topics, Homework, and Assignments
Week 1 (Jan 10/12)	 Topic (Module 1): What are emerging infectious diseases and One Health? <u>Tuesday</u>: Getting oriented: Introduction to course, instructor, credible sources, small groups, and the pressing question: Why does nearly 50% of newly emerging infectious diseases in people originate in wildlife and what can we do about it? In-class activity - 1: Credible sources Kahoot! Introduce a group member to the class (Group-related assignment – 1): Write a 1 paragraph bio (~5-6 sentences) that incorporates both professional and personal highlights for one of your small group members, then introduce each other to the class via Canvas (20 points). <i>Due date: Jan 12</i> <u>Thursday</u>: Watch: Baraka (documentary film; length 1h 36m) In-class discussion - 1: Connections among people, wildlife, and the environment; One Health triad (18 points) Reflection - 1: In 3 paragraphs (~15-18 sentences), explain at least one way in which you are connected to each of the following: the environment, wildlife,
	 community. How do you think each of these connections impact your health, whether positive or negative? <i>Due date: Jan 19</i> Extra Credit opportunity: Post your reflection to the Reflection – 1 discussion board (5 points) and interact in a substantive way (5 points). Available Jan 20 – Apr 25. Topic (Module 1): <i>What is disease?</i> <u>Tuesday</u>: Lecture: We will cover relevant concepts in microbiology, virology, evolution, and epidemiology to build foundational knowledge about infectious disease.
Week 2 (Jan 17/19)	 <u>Thursday</u>: Lecture: We will cover relevant concepts in microbiology, virology, evolution, and epidemiology to build foundational knowledge about infectious disease. Group-related assignment - 2: Meet in your small groups to 1) determine each person's role (10 points) and 2) determine the emerging zoonotic agent on which you will base your group projects/presentations (10 points). Due date: Jan 26
Week 3 (Jan 24/26)	 Topic (Module 1): Why is biodiversity important? <u>Tuesday</u>: Lecture: We will cover values of biodiversity and the roles of wildlife in ecosystems to build foundational knowledge about the human-wildlife-environment interface. Reflection - 2: Create and photograph your own land art, then submit the photograph with a list specifying all of the living and non-living items used to create

Week	Topics, Homework, and Assignments	
	your piece, as well as a 1-paragraph reflection (~4-5 sentences) on what a homogenous world would mean for your health. <i>Due date: Jan 31</i> Extra Credit opportunity: Post your reflection to the Reflection – 2 discussion board (5 points) and interact in a substantive way (5 points). Available Feb 1 – Apr 25.	
	 <u>Thursday</u>: Lecture: We will cover the biodiversity crisis of the Anthropocene to establish the ultimate cause underlying our pressing question. In-class discussion - 2 (of required reading): Jerry's Maggot: Chapter 13 (pages 153 – 167) from a Tropical Nature by Adrian Forsyth and Ken Miyata (18 points). Group-related assignment - 3*: Meet in your small groups to describe your emerging zoonotic agent: 1) type of agent and characteristics, 2) host range including reservoir(s), 3) endemic geographic location/environment/distribution, 4) transmission pattern and tropism, and 5) the disease, including name and symptoms, in a) the reservoir host (if not applicable, then another wildlife species) and b) people caused by the emerging zoonotic agent (30 points). Credible sources must be used and cited. <i>Due date: Feb 9</i> 	
	 Topic (Module 1): What is driving biodiversity loss? <u>Tuesday</u>: Lecture: Over the course of two weeks, we will explore the proximate causes underlying our pressing question. 	
Week 4 (Jan 31/Feb 2)	 <u>Thursday</u>: Lecture: Over the course of two weeks, we will explore the proximate causes underlying our pressing question. Group-related assignment - 3*: Meet in your small groups to describe your emerging zoonotic agent: 1) type of agent and characteristics, 2) host range including reservoir(s), 3) endemic geographic location/environment/distribution, 4) transmission pattern and tropism, and 5) the disease, including name and symptoms, in a) the reservoir host (if not applicable, then another wildlife species) and b) people caused by the emerging zoonotic agent (30 points). Credible sources must be used and cited. <i>Due date: Feb 9</i> 	
Week 5 (Feb 7/9)	 Topic (Module 1): What is driving biodiversity loss? <u>Tuesday</u>: Lecture: Over the course of two weeks, we will explore the proximate causes underlying our pressing question. Reflection - 3: Calculate your ecological footprint, then submit a 2-paragraph reflection (~8-10 sentences) that includes: 1) how many Earths would be needed to support the human population if everyone had your lifestyle, 2) at least two things you are doing sustainably, and 3) at least two things you can commit to improving this semester. <i>Due date: Feb 14</i> 	

Week	Topics, Homework, and Assignments
	Extra Credit opportunity: Post your reflection to the Reflection – 3 discussion board (5 points) and interact in a substantive way (5 points). Available Feb 15 – Apr 25.
	 <u>Thursday</u>: Lecture: Over the course of two weeks, we will explore the proximate causes
	underlying our pressing question.
	Group-related assignment - 4*: Meet in your small groups to describe: 1) spillover history for your emerging zoonotic agent, including for one notable spillover event: a) non-reservoir species involved and b) incidence, prevalence, and case fatality rate in people (20 points), and 2) proximate cause(s) for spillover event(s) (10 points). Credible sources must be used and cited. Due date: Feb 16
	Topic (Module 1): The unequal burden of biodiversity loss
	 <u>Tuesday</u>: Lecture: We will explore the intersection of poverty with emerging infectious diseases.
Week 6 (Feb 14/16)	Reflection - 4: Using at least one credible source, provide a 2-paragraph response (~8-10 sentences) to the following prompt: What is one health disparity that the COVID-19 pandemic revealed? Include sociocultural and/or environmental factors that contributed to this health inequality. <i>Due date: Feb 21</i>
	 <u>Thursday</u>: Lecture: The sociocultural aspects of Ebola transmission: an environmental justice case study
	Group-related activity: Meet in your small groups to prepare an engaging 10- minute PowerPoint presentation for the class based on the information you have prepared on your emerging zoonotic agent. Include a slide for all sources used. For in-class presentation: Mar 2
	Topic (Module 1): Wrapping up Module 1
Week 7	 <u>Tuesday</u>: In-class discussion - 3: COVID-19 and health disparities (10 points)
(Feb 21/23)	 <u>Thursday</u>: Watch: Spillover – Zika, Ebola & Beyond (PBS documentary; length: 56m) In-class discussion - 4: The human-wildlife-environment interface of infectious disease (18 points)
	Topic: Module 1 exam and small group presentations
Week 8 (Feb 28/Mar 2)	• <u>Tuesday</u> : Exam 1 (150 points)
	• <u>Thursday</u> :

Week	Topics, Homework, and Assignments
	Small group presentations Group-related assignment – 5: Peer-evaluation of other group members (20 points) and other group presentations (20 points). <i>Due date: Mar 7</i>
	Topic (Module 2): Wildlife necropsy at FWC with Dr. Mark Cunningham
Week 9 (Mar 7/9)	 <u>Tuesday</u>: Necropsy overview: Preparation for wildlife necropsy to review expectations, biosafety, and the purpose of performing necropsies. In-class discussion – 5 (of required video): Dr. Tracey McNamara's TED talk entitled "How monitoring animal health can predict human disease outbreaks" (length: 15m) (18 points).
	<u>Thursday</u> : Required field trip: First-hand experience with wildlife disease surveillance and diagnosis by participating in a wildlife necropsy.
Week 10	Spring Break
Week 11 (Mar 21/23)	 <u>Tuesday</u>: Lecture: We will explore the efficacy of transdisciplinary, team-based, and community-based approaches for solving complex problems, as well as the basic steps of starting a successful movement. Reflection - 5: Using at least one credible source, provide a 2-paragraph response (~8-10 sentences) to the following prompt: What are two barriers to communication between scientists and the public? Identify 2 strategies for improved communication. <i>Due date: Mar 28</i>
	 <u>Thursday</u>: Lecture: Innovative approaches for co-advancing the health of people, animals, and the environment, including use of big data: the One Health Center for Excellence. Group-related assignment - 6: Meet in your small groups to determine the goal of your final project. Based on your emerging zoonotic agent, you can choose to either: 1) create a One Health-centered, public educational campaign to promote awareness, or 2) create a One Health-centered movement to promote action with a proposed tangible outcome (10 points). <i>Due date: Mar 30</i>
Week 12 (Mar 28/30)	 Topic (Module 2): How to approach a solution to emerging infectious diseases at the human-wildlife-environment interface? <u>Tuesday</u>: In-class discussion - 6: Science communication with the public (10 points)
	• <u>Thursday</u> :

Week	Topics, Homework, and Assignments
	 Lecture: Application of a systems approach for management of Chronic Wasting Disease in Wisconsin: Dr. LeAnn White of the USGS National Wildlife Health Center. Group-related assignment - 7: Meet in your small groups to: 1) determine the objective(s) of your group's campaign and how these will be achieved; or determine the proposed tangible outcome(s) of your group's movement and the steps to achieve these (20 points), and 2) identify a platform to effectively communicate your group's campaign or movement (10 points). Due date: Apr 6
	Topic (Module 2): How to approach a solution to emerging infectious diseases at the human-wildlife-environment interface?
Week 13 (Apr 4/6)	 <u>Tuesday</u>: Group-related assignment - 8: Meet in your small groups to create a final product to communicate your group's campaign or movement using your group's chosen platform (20 points). <i>Due date: Apr 13</i> Reflection - 6: Consider your career choice – How does a One Health approach fit within this career? Describe how you could help human, animal, and environmental health in your career of choice. <i>Due date: Apr 11</i>
	 <u>Thursday</u>: Lecture: Coordinated surveillance for zoonoses using a One Health approach across the African continent: Dr. Stephanie Salyer of Africa CDC Group-related activity: Meet in your small groups to create an engaging 10-minute presentation that summarizes your group's objectives or proposed tangible outcome(s) and share the final product for your campaign or movement. For in- class presentation: Apr 20
	Topic (Module 2): How to approach a solution in your own life?
	 <u>Tuesday</u>: In-class discussion - 7: One Health in your career (10 points) <u>Thursday</u>:
Week 14 (Apr 11/13)	 Lecture: We will explore actions you can take toward a healthier and more equitable community at a local to global scale. In-class discussion - 8: What steps have you taken to improve your ecological footprint this semester? (18 points) Group-related activity: Meet in your small groups to create an engaging 10-minute presentation that summarizes your group's objectives or proposed tangible outcome(s) and share the final product for your campaign or movement. For inclass presentation: Apr 20
Week 15 (Apr 18/20)	 Topic: Module 2 exam and small group presentations <u>Tuesday</u>: Exam 2 (120 points)

Week	Topics, Homework, and Assignments	
	 <u>Thursday</u>: Small group presentations Group-related assignment - 9: Peer-evaluation of other group members (20 points) and other group presentations (20 points). <i>Due date: Apr 25</i> 	
Week 16 (Apr 25)	Topic: Course wrap-up • Tuesday: In-class activity - 2 Activity: Course evaluations	

IV. Student Learning Outcomes (SLOs)

At the end of this course, students will be expected to have achieved the <u>Quest</u> and <u>General Education</u> learning outcomes as follows:

Content: Students demonstrate competence in the terminology, concepts, theories and methodologies used within the discipline(s).

- Identify, describe, and explain cross-disciplinary dimensions of emerging infectious disease and One Health using concepts from biology, evolution, epidemiology, ecology, conservation, pathology, and public health (Quest 2, B). Assessment: Exams, in-class discussions, group-related assignments, small group presentations.
- Summarize values associated with biodiversity, as well as the ultimate and proximate drivers of biodiversity loss and the related sociocultural implications (Quest 2, B). Assessment: Exams, reflections, in-class discussions.
- Describe components of wildlife disease surveillance and diagnostics (B). Assessment: Exams
- List and explain potential approaches to solving complex problems broadly, and specifically related to emerging infectious diseases (Quest 2, B). Assessment: Exams, in-class discussions.
- Develop a method of One Health-centered community engagement (Quest 2). Assessment: Group-related assignments, small group presentations.

Critical Thinking: Students carefully and logically analyze information from multiple perspectives and develop reasoned solutions to problems within the discipline(s).

- Evaluate connections and analyze personal behavior within the One Health triad (Quest 2). Assessment: Reflections, in-class discussions.
- Collaboratively design a final product for a public educational campaign or movement that responds to a critical need to transform awareness or action related to an emerging zoonotic agent (Quest 2, B). Assessment: Group-related assignments, small group presentations.
- Relate reading and video materials to topics in the course (Quest 2). Assessment: In-class discussions.

Assess communication of peers within small groups and during presentations to the class (Quest 2). Assessment: Peer evaluations stemming from group-related assignments and small group presentations.

Communication: Students communicate knowledge, ideas and reasoning clearly and effectively in written and oral forms appropriate to the discipline(s).

- Present relevant perspectives, experiences, or evidence-based information related to topics in the course in a written and oral format that is organized, thoughtful, and thorough (Quest 2, B). Assessment: Reflections, in-class discussions.
- Create engaging, cohesive, organized, and professional presentations about emerging zoonotic agents that are both founded in science and accessible to the public to convey critical information, raise awareness, and/or urge to action (Quest 2, B). Assessment: Small group presentations.
- Express yourself effectively and respectfully in an interdisciplinary, team-based, project-oriented environment (Quest 2). Assessment: Group-related assignments, small group presentations (including peer evaluations).

Connection: Students connect course content with meaningful critical reflection on their intellectual, personal, and professional development at UF and beyond.

• Reflect on how you can contribute to advancing One Health and solutions to complex problems, like biodiversity loss and environmental injustice, in both your personal and professional life (Quest 2). Assessment: Reflections, in-class discussions, small group presentations.

V. Quest Learning Experiences

1. Details of Experiential Learning Component

Visit to FWC's Wildlife Health Unit: FWC wildlife veterinarians are key members of a statewide effort to detect and control diseases that threaten fish and wildlife, domestic animals, and people. Stressed by altered and fragmented habitats, environmental contaminants, and climate change, Florida's fish and wildlife populations are increasingly vulnerable to disease. Also, Florida's geographic location, subtropical climate and large human population put the state at high risk for wildlife diseases brought in by exotic and invasive species, increased global travel, and translocation of wildlife. Staying on top of these threats requires surveillance, prevention, and expert technical assistance.

Interdisciplinary, team-based projects culminating in peer-evaluated, small group presentations: The students in this course represent a variety of academic disciplines and life experiences. Because solutions to complex problems require interdisciplinary, team-based approaches, you will put this into action throughout the semester to ultimately produce a public educational campaign to promote awareness or a movement to promote action with a proposed tangible outcome related to an emerging, zoonotic agent.

2. Details of Self-Reflection Component

As detailed in the Graded Work section, there will be 7 Reflection assignments throughout the semester. These are occasions when you will either examine your perspectives or experiences related to topics in the course or find evidence-based information to deepen your understanding of topics in the course. Additionally, the in-class pre- and post-surveys of your knowledge on topics related to the course's pressing question will provide an opportunity to reflect on how much information and skills you gained throughout the semester.

VI. Required Policies

Attendance Policy

Requirements for class attendance and make-up exams, assignments, and other work in this course are consistent with university policies that can be found at: https://catalog.ufl.edu/ugrad/current/regulations/info/attendance.aspx

Students Requiring Accommodation

Students with disabilities who experience learning barriers and would like to request academic accommodations should connect with the disability Resource Center by visiting <u>https://disability.ufl.edu/students/get-started/</u>. It is important for students to share their accommodation letter with their instructor and discuss their access needs, as early as possible in the semester.

UF Evaluations Process

Students are expected to provide professional and respectful feedback on the quality of instruction in this course by completing course evaluations online via GatorEvals. Guidance on how to give feedback in a professional and respectful manner is available at https://gatorevals.aa.ufl.edu/students/. 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 https://ufl.bluera.com/ufl/. Summaries of course evaluation results are available to students at https://gatorevals.aa.ufl.edu/public-results/.

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

(<u>https://www.dso.ufl.edu/sccr/process/student-conduct-honor-code/</u>) 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 or TAs in this class.

Counseling and Wellness Center

Contact information for the Counseling and Wellness Center: <u>http://www.counseling.ufl.edu/</u>, 392-1575; and the University Police Department: 392-1111 or 9-1-1 for emergencies.

The Writing Studio

The writing studio is committed to helping University of Florida students meet their academic and professional goals by becoming better writers. Visit the writing studio online at http://writing.ufl.edu/writing-studio/ or in 2215 Turlington Hall for one-on-one consultations and workshops.

In-Class Recordings

Students are allowed to record video or audio of class lectures. However, the purposes for which these recordings may be used are strictly controlled. The only allowable purposes are (1) for personal educational use, (2) in connection with a complaint to the university, or (3) as evidence in, or in preparation for, a criminal or civil proceeding. All other purposes are prohibited. Specifically, students may not publish recorded lectures without the written consent of the instructor.

A "class lecture" is an educational presentation intended to inform or teach enrolled students about a particular subject, including any instructor-led discussions that form part of the presentation, and delivered by any instructor hired or appointed by the University, or by a guest instructor, as part of a University of Florida course. A class lecture does not include lab sessions, student presentations, clinical presentations such as patient history, academic exercises involving solely student participation, assessments (quizzes, tests, exams), field trips, private conversations between students in the class or between a student and the faculty or lecturer during a class session.

Publication without permission of the instructor is prohibited. To "publish" means to share, transmit, circulate, distribute, or provide access to a recording, regardless of format or medium, to another person (or persons), including but not limited to another student within the same class section. Additionally, a recording, or transcript of a recording, is considered published if it is posted on or uploaded to, in whole or in part, any media platform, including but not limited to social media, book, magazine, newspaper, leaflet, or third party note/tutoring services. A student who publishes a recording without written consent may be subject to a civil cause of action instituted by a person injured by the publication and/or discipline under UF Regulation 4.040 Student Honor Code and Student Conduct Code.