

**ANT4539 Evolutionary Medicine**

**Course Info:** Tuesdays 3 (9:35-10:25am) TUR 2354  
Thursdays 3-4 (9:35-11:30am) TUR 2318

**Professor:** **Dr. Stephanie Bogart**

**Office:** B137 Turlington Hall

Email: [sbogart@ufl.edu](mailto:sbogart@ufl.edu) - preferred contact  
through **Canvas communications**

SEEN IN THE LIGHT OF EVOLUTION, BIOLOGY IS,  
PERHAPS, INTELLECTUALLY THE MOST  
SATISFYING AND INSPIRING SCIENCE. WITHOUT  
THAT LIGHT IT BECOMES A PILE OF SUNDRY FACTS  
- SOME OF THEM INTERESTING OR CURIOUS BUT  
MAKING NO MEANINGFUL PICTURE AS A WHOLE.  
- THEODOSIUS DOBZHANSKY -

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**Office Hours Instructions:** Appointments use [Microsoft Bookings](#) – in-person or Zoom.

**Wednesdays:** 8:30-9:15am, 10:30am-12:30pm

**Open Door Policy:** if my office door is open, can come in without an appointment.

**Course Description:** Examines the intersection of evolution, culture, and environment as influencing factors on the emergence and existence of human diseases and pathogens using interdisciplinary methods, but focusing on Darwinian (evolutionary medicine) examination of illness. Students will explore, assess, and solve real world problems through critical-thinking assignments that solidify understanding of the scientific method.

**Prerequisites:** ANT3514C or BSC2011\*

*\*Speak to instructor about readiness for this class and prior evolutionary learnings.*

**NOTE:** this class is eligible for elective credit towards the Medical Anthropology Certificate, speak to Dr. Bogart if interested.

**Course Objectives:**

- Develop a deeper comprehension of the central and cross-disciplinary concepts of human biology, which include, but are not limited to genetics, metabolic adaptations, origins of human and pathogen diversity, as well as social behaviors; and how these factors shape human medicine.
- Foster students' process of identifying, exploring, assessing and solving real world problems through independent study and self-directed group projects that solidify their understanding of the scientific method, and basic scientific principles.
- Demonstrate understanding of ecological and evolutionary processes including the role of genetic variation, heredity, and natural selection as well as the implications these processes have for the origins and evolution of modern humans and their biology.
- Conceptualize biological knowledge into a socio-cultural context, especially how biology can contribute to the resolution of social, medical, and environmental issues.

**Student Learning Outcomes:** after taking Evolutionary Medicine students will be able to:

- Identify, describe, and explain factual, conceptual, and procedural knowledge in human evolution relating to medicine and disease.
- Apply the scientific method and develop critical thinking skills from an evolutionary framework to investigate human variation in its biological, social, and cultural dimensions.
- Integrate different sources and types of knowledge into holistic perspectives about diseases and medicine.
- Develop skills in reading and facilitating discussions over recent primary scientific literature, as well as public speaking skills.

**Required Materials:**

*Principles of Evolutionary Medicine*, by Gluckman, Beedle, Buklijas, Low, and Hanson (2016) Second Edition, Oxford University Press, ISBN: 978-0199663934

***\*\*Available FREE through Library e-reserves – Go to the Canvas page and click course reserves in left menu (works best in Firefox)***

**SCHEDULE:** (Subject to revision)

Module	Topic	Textbook	Assignments
Module 1 8/24 – 8/28	Introductions, Syllabus, Assignment overview		
Module 2 8/29 – 9/2	Evolutionary Medicine, Evolution Review	1, 2	
Module 3 9/5 – 9/9 M: Labor day	Genetics & Development	3 & 4	<i>R: Choose Article facilitator week</i>
Module 4 9/12 – 9/16	Life Histories	5	
Module 5 9/19 – 9/23	Human Origins & Diversity	6	<b>F: Topic Approval</b>
	<i>9/23-9/24 Midterm I</i>		
Module 6 9/26 – 9/30	Reproduction & Disease	8	<i>R: Article discussions</i>
Module 7 10/3 – 10/7 F: Homecoming	Nutrition & Disease	9	<i>R: Article discussions</i>
Module 8 10/10 – 10/14	Coevolution, infection, immunity	10	<i>R: Article discussions</i>
Module 9 10/17 – 10/21	Psychology & Behavior related to Disease	11	<i>R: Article discussions</i>
Module 10 10/24 – 10/28	Cancer	12	<i>R: Article discussions</i>
Module 11 10/31 – 11/4	Medical Practice & EM Principles and Pathways	13 & 7	<i>R: Article discussions</i>
Module 12 11/7 – 11/11 F: Veteran's day	Society and Our Future Review	14	<i>R: Article discussions</i>
Module 13 11/14 – 11/18	<i>11/14-11/15 Midterm II</i> <b>Group Check in</b>		<b>F: Disease Fact Sheet Due</b> <b>Group Check in</b>
11/23 – 11/26	THANKSGIVING		
Module 14 11/28 – 12/2	<b>Student Presentations</b>		<b>M: Presentation with notes due</b> <b>F: Self &amp; peer evals due</b>
Module 15 12/5 – 12/7	Final class		

**Grading:** Letter grades assigned based on total percent of points. A = 93.0 or above; A- = 90-92.9; B+ = 87-89.9; B = 83-86.9; B- = 80-82.9; C+ = 77-79.9; C = 73-76.9; C- = 70-72.9; D+ = 67-69.9; D = 63-66.9; D- = 60-62.9; E = <59.9 \*\*\***grades will not be rounded**\*\*\*

UF grading policy: <https://catalog.ufl.edu/UGRD/academic-regulations/grades-grading-policies/>

25%	Two Midterms (each 12.5%)
20%	Article Facilitator (15 points)
15%	Article Discussion Participation (2pts per article)
10%	Attendance
30%	Research Project
	Topic Approval - 5pts
	Check-in - 10pts
	Disease Fact Sheet – 25pts
	Presentation - 40pts
	Slides and notes submission - 5pts
	Peer and self-evaluation - 5pts

**Midterms:** Midterms will be *non-cumulative*, covering the material since the last exam (or from the start of term for midterm I). The exam will consist of multiple questions types. Midterms will be conducted over Canvas. No proctoring services is used in this class. *Exams are open for 2 days starting at 12am on day one and ending at 11:59pm day two.*

- Exams must be taken at the scheduled time; there will be no makeup exams. Exceptions will be made only in the case of incapacitating illness or other university-approved absence. In such cases, you must provide Dr. Bogart with written documentation from an appropriate authority at least 24 hours before the exam or as soon as possible thereafter.
- **DRC (Disability Resource Center) student accommodations should be provided to the Instructor by the end of the first month of term and a one-on-one meeting is recommended.**

**Articles Facilitator:** Students will choose a topic/week to be the facilitator. Once the week/topic is chosen, facilitators will be provided a list of published articles to choose from.

- Facilitators will prepare the other students for discussion, and lead, moderate, and ask questions. The goal is to get other students to contribute to the discussion, but being well informed to answer and lead the class. Facilitators are not presenting the material.
- Facilitators and participants should think about the following article analysis elements:
  - Consider the methodology & design: What are the advantages and disadvantages of using this design? How could the authors' have used other designs? What limitations can you recognize about the particular methodology used in this article?
  - Conclusions: Are the authors' conclusions warranted based on the findings? Do you agree with the conclusions of the paper? What are the strengths and limitations of this study?
  - Future: Think about how you would choose to follow up this research. What would be the best next study to test this phenomenon?

**Article Discussion Participation:** All students will earn points by participating in article discussions that they are not facilitating. Each student should come to class prepared and able to contribute. Participation is graded for EACH article in the following manner:

- 0 – absent or did not pay attention during discussion
- 0.5pt - listened and followed along, but did not participate in discussion
- 1pt – prepared for discussion, and asked or answered a thoughtful question

- 2pts – contributed in multiple ways to the discussion

**Attendance**

- Students must attend class.
  - Students can have 2 unexcused absences without penalty.
- 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/UGRD/academic-regulations/attendance-policies/>

**Research Project:** Students will work in small groups of 2-3 individuals. Each group will choose a disease from a guided list to thoroughly investigate in terms of evolution, previous and current treatments, genetic impacts/coevolution, and possible future implications. Groups will present their findings in class. Elements include:

- **Mandatory topic approval** (5pts) – students will pick their groups and topics from a guided list of diseases.
- **Mandatory check-in with Professor** (10pts)
  - This is an opportunity to get input on finalizing your presentation (you should have half of it done).
- **Disease Fact Sheet** (35pts)
  - Your group will provide to the instructor and class an overview fact sheet on your disease with citations and references. This fact sheet should cover the basic background on the disease with the main genetics and/or physiologic aspects known about the disease. The following are example points:
    - Description of disease and symptoms
    - How it is transmitted
    - Genetic impact or coevolution if known
    - Previous treatments
- **Presentation slides and detailed notes** (5pts) must be turned in before the date of the presentation.
- **Group presentation** (40pts) – 10-15 minutes, all group members should have a presenting role.
  - Origins of the disease if known.
  - Evolutionary hypothesis: what are the evolutionary forces that lead to the development of this disease? How come natural selection has not eradicated the disease? How can we use evolution to develop more effective treatment strategies?
  - Current treatments and possible future treatments based on your evolutionary hypothesis
  - Limitations to the current body of knowledge about the disease and how these could be resolved in the future
  - Allow a few minutes for questions/discussion
- **Self and peer evaluations** (5pts): all members of the group will fill out a survey on their own efforts and the efforts of their group mates.

**COURSE POLICIES****Accommodation**

Students who require accommodations for learning barriers should connect with the Disability Resource Center by visiting <https://disability.ufl.edu/get-started/>. It is important for students to share their accommodation letter with their instructor and discuss their access needs, as early as

possible (go to <https://disability.ufl.edu/students/accommodations/accommodation-letters/>).

Ideally, student accommodation should be communicated to the Instructor **before the end of the first month of the term**, but can be at any time of the term if circumstances arise.

**Assignment Extensions:** Extensions on assignments will not be scheduled unless demonstrated illness, health, emergency, or major scheduling conflict with proof provided to the Instructor/TA. An email/canvas conversation, following university procedures, is expected so that arrangements can be made with all parties (instructor, TA, and student) in agreement. It is the student's responsibility to contact the instructor and TA and inform them of the emergency or circumstance. *E-mails/Canvas communications are strongly encouraged.*

- **Late assignments/quizzes/exams without an excuse will be reduced 5% per day late.**
- **All unexcused late work will not be accepted a week after the due date without agreement with the instructor.**
- *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>.*

### **Critical Thinking Objective**

Students are encouraged to employ critical thinking and to rely on data and verifiable sources to interrogate all assigned readings and subject matter in this course as a way of determining whether they agree with their classmates and/or their instructor. No lesson is intended to espouse, promote, advance, inculcate, or compel a particular feeling, perception, viewpoint or belief.

### **In-Class Recording**

The instructor may record lectures for storage, these recordings will not be provided to students. 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.

### **Online Materials and Communication:**

- We will be using **chapter quizzes for the textbook**. This will use the opt-in option through Canvas to use **McGraw-Hill's Connect application** to view and take quizzes from the text.
  - All required online assignments and the interactive eBook for this course are available in **Connect**. To get started, click the first Connect assignment in your Canvas course. (In-print version can be purchased for extra fee within Connect)
    - Sign in or create a new account using access code.
    - In Connect, every question links directly to the eBook. When you are struggling with a question you can go directly to the explanation in the eBook for help. You can access the eBook from any computer or device, any time.
- **You are responsible for materials posted on E-Learning (Canvas)** at <https://elearning.ufl.edu/>, including required readings, announcements, details on assignments, and other supplementary material. Canvas technical support available at <https://elearning.ufl.edu/student-help-faqs/>.
- The instructor and the TAs may use email to make general class announcements or to contact you directly about your work. **You are responsible for checking your official UF email regularly** to be aware of communication from your instructors. There are no allowances for students who fail to read their email announcements or whose inboxes are full at the time an announcement is sent

### **Course Evaluations – GatorEvals**

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.bluer.com/ufl/>. Summaries of course evaluation results are available to students at <https://gatorevals.aa.ufl.edu/public-results/>.

### **Student Conduct and Academic Honesty and Integrity**

Cheating, copying other's work, plagiarism, and other acts of academic misconduct are unethical. UF and the instructor consider these to be serious offenses.

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#### **Cell phones should be off or in silent mode**

use of a phone will result in point deductions

#### **Laptops are permitted ONLY for notetaking**

use of social media, email, or non-course related work will result in point deductions

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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/students/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 or TAs in this class.

### **Harassment and Discrimination**

“Harassment” is defined as conduct that (1) is of any type (written, oral, graphic, or physical), (2) is directed towards or against a person because of their personal status (i.e., race, religion, sex, sexual orientation, political affiliation, national origin, age, disability, marital status, pregnancy or others), and that (3) unreasonably interferes with the individual’s work, education, or participation in activities or programs at UF or creates a working or learning environment that a reasonable person would find threatening. “Discrimination” is defined as a conduct that (1) adversely affects any aspect of an individual’s employment, education, or participation in activities or programs at UF, and (2) is based on one or more personal characteristics listed above. Any student who feels that his/her rights have been violated may speak to the instructor who will direct the complaint through the proper university channels, or the student may directly file a complaint with UF Department of Human Resources.

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“The University of Florida has zero tolerance for sexual discrimination, sexual harassment, sexual assault, dating violence, domestic abuse or stalking.” <https://titleix.ufl.edu/>

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### **Gender Equity Statement**

The University of Florida is committed to providing a safe, productive learning environment free of sex-based discrimination and misconduct. Sex-based discrimination, sexual misconduct (including sexual harassment, sexual assault, and any other nonconsensual behavior of a sexual nature), and relationship violence are antithetical to the university’s mission and values, violate university policies, and may also violate federal and state law. If you or someone you know has experienced sex-based discrimination, sexual violence, and/or harassment by any member of the university community, please visit [www.titleix.ufl.edu](http://www.titleix.ufl.edu) to access information about university support and resources. If you would like to make a report please contact UF’s Title IX Coordinator at (352) 275-1242 or by e-mail at [inform@titleix.ufl.edu](mailto:inform@titleix.ufl.edu). Additionally, reports can be made through the [Online Portal](#)

### **Campus Resources**

Students experiencing personal problems that are interfering with their academic performance are encouraged to contact Student Affairs, DRC, and/or the Counseling and Wellness Center

- UF Student Affairs: <https://ufsa.ufl.edu/> or <https://care.dso.ufl.edu/>
- Disability Resource Center (DRC): [www.dso.ufl.edu/drc/](http://www.dso.ufl.edu/drc/)
- Counseling and Wellness Center: <https://counseling.ufl.edu/>, 392-1575
- Health and Wellness U Matter, We Care: If you or a friend is in distress, please contact [umatter@ufl.edu](mailto:umatter@ufl.edu) or (352) 392-1575 so that a team member can reach out to the student.

### **Library Resources**

The [UF Libraries](#) provide access to numerous resources and services that will help you succeed in this course. Access thousands of [online databases, books, and articles](#) or visit one of the [branch locations](#) for additional resources, services, and study spaces. Further, as this class requires students to complete research project, both the [Anthropology Library Guide](#) and the [Anthropology Assignment Guide](#) may be of assistance. You can also contact the [Anthropology Librarian](#) directly for help with developing your research topic/question,

searching for sources, and evaluating information. And you can also [Ask A Librarian](#) for help by email, chat, text, or phone.

- **GiNESSA MAHAR** (Anthropology Librarian): [gjmahar@ufl.edu](mailto:gjmahar@ufl.edu), office: Library West 500

### **Other Academic Resources**

- E-learning technical support, 352-392-4357 (select option 2) or e-mail to [Learningsupport@ufl.edu](mailto:Learningsupport@ufl.edu). <https://lss.at.ufl.edu/help.shtml>
- Writing Studio, 302 Tigert Hall, 846-1138. Help brainstorming, formatting, and writing papers or presentations. <http://writing.ufl.edu/writing-studio/>