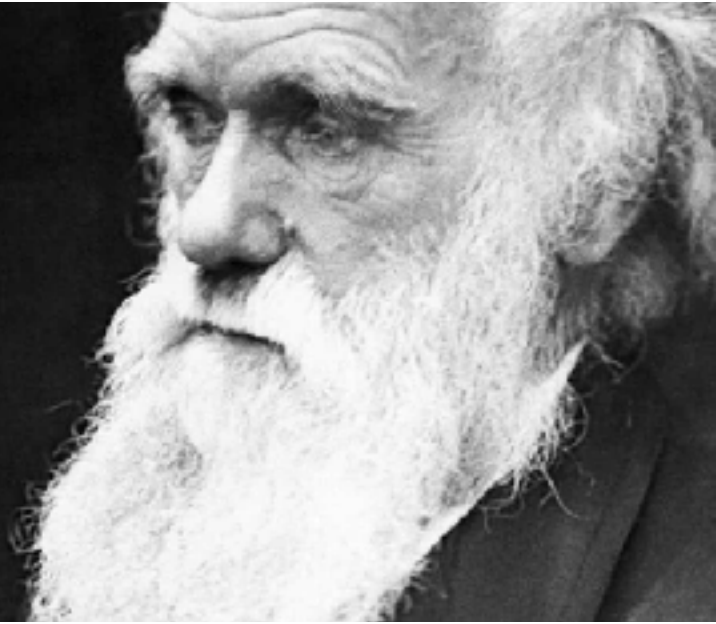

ANTHRO 4580

Evolutionary Medicine



About this course

Evolutionary processes and human evolutionary history have profound implications in the way in which we respond and are susceptible to disease. Unlike many of the short-term biomedical understandings of human health, evolution can better inform on the ultimate causes and consequences of topics such as infection and inflammation, allergy, parasites, diabetes and cardiovascular disease, aging, cancer, reproductive issues, and mental disorders. As part of this class, students will use evolution to critically evaluate human health, and explore how natural selection can shape behaviors and physiological responses.

Course Objectives

By the end of this course students will be expected to:

- Be able to understand and apply evolutionary thinking to health issues
- Recognize the role of evolutionary history in shaping susceptibility to chronic and infectious diseases.
- Recognize the role of evolution in shaping physiological and behavioral responses to disease

Class will meet Tue & Thu 2:00 - 3:15 PM in Arts & Sciences Room 104

Instructor is Dr. Sean Prall. My office is in Swallow Hall 224, and my office hours are Wed from 1-3 PM or by appointment. You may contact me via email at sprall@missouri.edu

Readings

There are no text required for this course. All readings will be uploaded to Canvas.

However, interested students are recommended to purchase *Why we get sick* by Nesse and Williams (1994, Vintage Books).

Assignments and grading

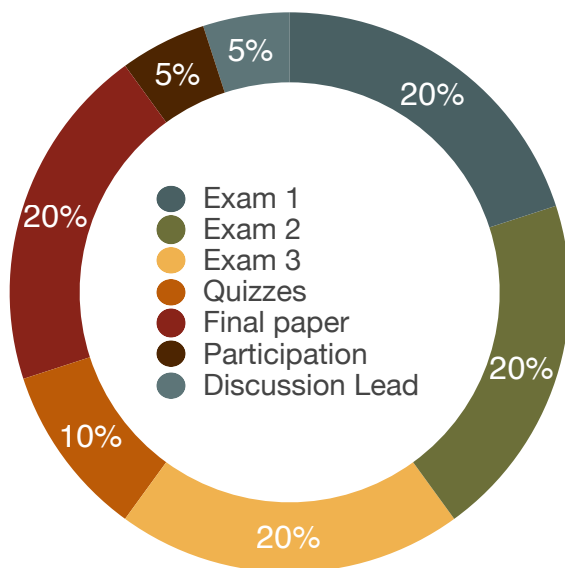
Grading for this class will be broken down into the following requirements and assignments as represented in the graph.

Quizzes - At the discretion of the instructor, students will complete a series of short and unannounced quizzes at the beginning of class sessions. Quizzes may be in any format, but will concentrate on assigned reading materials, and subject matter covered since the previous quiz.

Final Paper/presentation - Students will

write a final paper reviewing relevant aspects of a topic related to human health or disease. Topics should be focused on apply evolutionary principles to a specific health issue, and will be approved by the instructor. To ensure progress throughout the course of the semester, students will be expected to submit several items as described in the graphic, which highlights the grade breakdown of the paper. Expectations for each item will

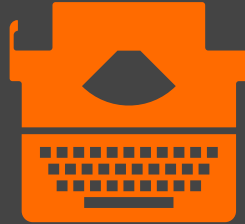
be posted on canvas. At the end of the semester, students will be expected to deliver a short presentation on their research (less than 10 minutes). Undergraduate paper should be 10-12 pages, while graduate papers should be 15-20 pages (double spaced, 12 pt font). A rubric will be provided prior to handing in the paper. Graduate students should speak to the instructor for additional expectations and details.



Exams - Students will complete three exams during the semester. Exams will be composed of a mix of multiple choice, short answer, and essay questions. The last exam will be during finals week, but will not be cumulative. Students should refer to questions from the quizzes for style and content.

Class Participation - Students will be expected to be present in class, to come prepared having read the assigned readings for that day, and participate in thoughtful discussion

Leading Discussion - During one class session, each student will act as discussion lead (undergraduates 1x, graduate students 2x), and come prepared to ask questions and lead the class through the assigned readings and topics for that day. Students should discuss material with instructor prior to class.



Paper Breakdown

- Topic Proposal - 2%
- Short bibliography - 4%
- Short early draft - 4%
- Final Paper - 80%
- Presentation - 10%

Course Schedule

Week	Date	Day	Daily Topic
Week 1	25-Aug	Tuesday	Introduction to the course
	27-Aug	Thursday	Evolutionary thinking for health and medicine
Week 2	1-Sep	Tuesday	Evolutionary history and human genetic variation
	3-Sep	Thursday	Evolution of human life histories
Week 3	8-Sep	Tuesday	Sex differences in health and disease
	10-Sep	Thursday	Menstruation and oral contraceptive use
Week 4	15-Sep	Tuesday	Evolutionary conflicts in pregnancy and childhood
	17-Sep	Thursday	Morning sickness and food aversions Topic Proposal Due
Week 5	22-Sep	Tuesday	Individual meetings to discuss paper topics
	24-Sep	Thursday	Exam 1
Week 6	29-Sep	Tuesday	DoHad and the origins of obesity and cardiovascular disease
	1-Oct	Thursday	Human evolution, diet, and nutrition
Week 7	6-Oct	Tuesday	Activity, energetics, and health
	8-Oct	Thursday	Cancer
Week 8	13-Oct	Tuesday	The evolution of virulence
	15-Oct	Thursday	Emerging Infectious diseases
Week 9	20-Oct	Tuesday	Injury and pain Short bibliography due
	22-Oct	Thursday	Hygiene hypothesis and allergy
Week 10	27-Oct	Tuesday	Parasite manipulation of behavior and the behavioral immune system
	29-Oct	Thursday	Exam 2
Week 11	3-Nov	Tuesday	The evolution of senescence
	5-Nov	Thursday	Senescence on the body
Week 12	10-Nov	Tuesday	Addiction
	12-Nov	Thursday	Mental Disorders
Week 13	17-Nov	Tuesday	Social stress and health Short early draft due
	19-Nov	Thursday	The evolutionary ecology of human sleep
Week 14	1-Dec	Tuesday	The evolution of medicine
	3-Dec	Thursday	Exam 3
Week 15	8-Dec	Tuesday	Student Presentations
	10-Dec	Thursday	Student Presentations
Finals	15-Dec		Final paper due

Course Policies and Expectations

Attendance

Students are expected to be present for class (until otherwise notified). Attendance will not be taken, but students who fail to attend may miss pop quizzes, participation points, and valuable in-class learning opportunities. Students who have a *legitimate* reason to miss class must alert the instructor BEFORE class (and ideally at least 24 hours in advance). Students who miss class without legitimate reasons and advance warning may not make up missed quizzes, exams, or hand in materials late.

Students who have legitimate reasons not to attend class in person may attend digitally. It is the student's responsibility to be contact with the instructor regarding access to these materials. Every effort will be made to give students unable to attend in-person fair and equitable access to lectures and other course materials.

Decreasing the Risk of COVID-19 in Classrooms and Labs

MU cares about the health and safety of its students, faculty, and staff. To provide safe, high-quality education amid COVID-19, we will follow several specific campus policies in accordance with the advice of the Center for Disease Control and Boone County health authorities. This statement will be updated as information changes.

- If you are experiencing any COVID-related symptoms, or are otherwise feeling unwell, do not attend in-person classes and contact your health care provider and/or student health immediately. COVID symptoms include: fever greater than 100.4 or chills; cough, shortness of breath or difficulty breathing; fatigue; unexplained muscle or body aches; headache; new loss of taste or smell; sore throat; congestion or runny nose; nausea or vomiting; diarrhea.
- We will all wear face coverings while in the classroom, unless you have a documented exemption due to a disability or medical condition.
- We will maintain a 6-foot distance from each other at all times (except in specific lab/studio courses with other specific guidelines for social distancing).
- We will enter the classroom and fill the room starting at the front, filing all the way across a row. When class ends, we will exit the row nearest to the door first; the instructor or TA will give the signal for the next row to exit, in the same manner.
- In any small section or lab class that requires them, additional measures will be listed in the syllabus and be mandatory for class participation.
- Online office hours will be available for all students.
- This course may be recorded for the sole purpose of sharing the recording with students who can't attend class. The instructor will take care not to disclose personally identifiable information from the student education records during the recorded lesson.

Compliance with these guidelines is required for all; anyone who fails to comply will be subject to the accountability process, as stated in the University's Collected Rules and Regulations, Chapter 200 Student Code of Conduct.

If an instructor has concerns about how a student is following COVID-19 policies and protocols, please report those concerns to the Office of the Dean of Students. You can fill out a COVID Safety Measures Reporting Form here: https://cm.maxient.com/reportingform.php?UnivofMissouriSystem&layout_id=38

By taking the above measures, we are supporting your health and that of the whole Mizzou community. Thank you in advance for joining me and your peers in adhering to these safety measures.

Academic integrity is fundamental to the activities and principles of a university. All members of the academic community must be confident that each person's work has been responsibly and honorably acquired, developed, and presented. Any effort to gain an advantage not given to all students is dishonest whether or not the effort is successful. The academic community regards breaches of the academic integrity rules as extremely serious matters. Sanctions for such a breach may include academic sanctions from the instructor, including failing the course for any violation, to disciplinary sanctions ranging from probation to expulsion. When in doubt about plagiarism, paraphrasing, quoting, collaboration, or any other form of cheating, consult the course instructor.

If you anticipate barriers related to the format or requirements of this course, if you have emergency medical information to share with me, or if you need to make arrangements in case the building must be evacuated, please let me know as soon as possible.

If **disability related accommodations** are necessary (for example, a note taker, extended time on exams, captioning), please establish an accommodation plan with the MU Disability Center, S5 Memorial Union, 573-882-4696, and then notify me of your eligibility for reasonable accommodations. For other MU resources for persons with disabilities, click on "Disability Resources" on the MU homepage.



Grading scale

97 - 100%	= A+
93 - 96%	= A
90 - 92%	= A-
87 - 89%	= B+
83 - 86%	= B
80 - 82%	= B-
77 - 79%	= C+
73 - 76%	= C
70 - 72%	= C-
67 - 69%	= D+
63 - 66%	= D
60 - 62%	= D-
Under 60%	= F

The University community welcomes **intellectual diversity and respects student rights**. Students who have questions or concerns regarding the atmosphere in this class (including respect for diverse opinions) may contact the departmental chair or divisional director; the director of the Office of Students Rights and Responsibilities; the MU Equity Office, or equity@missouri.edu.

All students will have the opportunity to submit an anonymous evaluation of the instructor(s) at the end of the course.

University of Missouri System Executive Order No. 38 lays out principles regarding the sanctity of classroom discussions at the university. The policy is described fully in section 200.015 of the Collected Rules and Regulations. In this class, students may not make audio or video recordings of course activity, except students permitted to record as an accommodation under section 240.040 of the Collected Rules. All other students who record and/or distribute audio or video recordings of class activity are subject to discipline in accordance with provisions of section 200.020 of the Collected Rules and Regulations of the University of Missouri pertaining to student conduct matters.

Those students who are permitted to record are not permitted to redistribute audio or video recordings of statements or comments from the course to individuals who are not students in the course without the express permission of the faculty member and of any students who are recorded. Students found to have violated this policy are subject to discipline in accordance with provisions of section 200.020 of the Collected Rules and Regulations of the University of Missouri pertaining to student conduct matters.

Please note that course schedule and any deadlines listed are subject to change. Instructor may change course content, assignments, grading, and reading at his discretion. Students will be notified of updates to this syllabus as they occur.