

People, Parasites, and Plagues

Spring, 2015

IDIS/CBIO 3100 and 3100H

COURSE INFORMATION AND SYLLABUS

DESCRIPTION: This course takes a multidisciplinary approach to examining the impact of infectious diseases on our world. Epidemic (both past and present), emerging and zoonotic diseases, and how they are identified, studied and combated, are covered. Topics also include the sociological, psychological, historical, ecological and economic implications of infectious diseases. The course is equally suitable for science and non-science majors. Students are expected to master the concepts of disease, how scientific investigation is done, and the various mechanisms by which infectious diseases impact individuals and the societies in which they live.

The course is designed to be a challenging and stimulating for all students regardless of academic background or career goals. Non-science majors find themselves challenged to see the world of parasites (a term used loosely in this course in reference to any organism that takes damaging advantage of another) through the eyes of a scientist. Science majors are compelled to appreciate the implications of parasitism beyond the biology of parasitizing organisms and host/parasite interactions. By the end of the course, students can expect to have a good grasp of the global implications (literally and figuratively) of parasitic diseases, and be capable of sharing this fascinating and often scary world with others both within and without the academic community.

The course is organized into sections defined by broad learning objectives. Within each section, a combination of lecture/discussion and “flipped” classroom activities will be utilized to cover the material. To be successful in this course, students will need to stay on top of the material and assignments and embrace the flipped classroom concept. Success will require:

- 1) Consistent engagement with reading assignments and other assigned work (“homework”). Typically, homework and assigned reading or other viewable material will be available no later than midday Friday each week; online quizzes and other assignments will typically be due Sunday night. This basic structure will provide students with introduction to topics and concepts to be covered during the upcoming week. Results of quizzes and assignments will be used to guide in-class coverage of topics and concepts.
- 2) Regular attendance of class and participation in in-class flipped activities and exercises.

For some class meetings, experts will be brought in to cover specific topics; students will benefit from the expertise and excitement that these individuals have for their respective fields of work and study.

The course syllabus is general plan for the course; deviations announced to the class by the instructor may be necessary.

PREREQUISITES: (BIOL 1103 or BIOL 1103E) and BIOL 1103L or (BIOL 1107 or BIOL 1107E) and BIOL 1107L

CLASS SCHEDULE: 11:00 – 12:15 T/R, room 363, main Vet Med Building

HONORS BREAKOUT SCHEDULE: T, 12:30 – 1:30, room N104, Coverdell Building

COURSE COORDINATOR: Dr. Julie Moore; office: room N330C, Coverdell Building, email: julmoore@uga.edu

TEACHING ASSISTANTS:

Tara Bracken (tcb7r@uga.edu): responsible for online material and quizzes, exams and attendance/participation
Briana Flaherty (brifla@uga.edu): responsible for online material and quizzes, exams and attendance/participation
Payel Sil (payel@uga.edu): responsible for Voices from the Vanguard lectures and associated round table discussions (see below) and Honors breakout meetings

If you need help with the material or would like to discuss something in more detail, you are encouraged to directly email the TAs to make an appointment (provide your schedule). If you do not receive an email response within 3 working days suggesting a mutually agreeable meeting date/time, resend your message to ensure it has not been missed. Students are responsible for their own success in this course, so if you need help, it is your responsibility to make an effort to seek it out.

OFFICE HOURS WITH DR. MOORE: By appointment only.

Given the nature of Dr. Moore's research and lab access restrictions/biosafety concerns, traffic through her labs and office must be limited and controlled. Contact her via *direct email* (not through eLC) at julmoore@uga.edu with questions or to request a meeting.

ATTENDANCE: Attendance of each class meeting is required. There will be discussions and activities in which all students are expected to participate. Student learning will be maximized by attending class regularly and participating fully in all discussions and activities. All students should be prepared to be called on to comment on the topic at hand.

While it is understood that campus transport sometimes makes timely movement across campus between classes difficult, arrival to class later than 11:10 AM or departure prior to 12:05 PM may result in a missed in-class assignment (and therefore receiving a zero for that work). There will be no exceptions unless cleared with Dr. Moore.

If you are absent on a day when a test is administered or an assignment is due, you must present a formal doctor's excuse to Dr. Moore (a nurse's excuse from the Health Center will NOT suffice) or other record of professional commitment (such as a formal letter of invitation for a job or graduate education interview). If your excuse is unacceptable, you receive a zero for participation or any work that is given/due on that day.

If you are very ill or have a family emergency and are unable to attend your classes, you must contact the Office of Student Affairs, 542-8220, which will then inform all of your instructors. This is the only acceptable avenue for being excused from a presentation, assignment submission or exam for grave illness or family emergency. You are responsible for making this contact.

THE ELECTRONIC CLASSROOM: Course materials will all be available on eLC. Dr. Moore will use LearningTools via eLC to conduct real-time surveys and quizzes during class. This will require that each student have a laptop or tablet to use during class. (It will be possible to submit answers also by text messaging from a phone.) **USE OF TABLETS, LAPTOPS AND TELEPHONES FOR PURPOSES OTHER THAN THOSE DIRECTLY RELATED TO ONGOING ACTIVITIES DURING CLASS IS STRICTLY PROHIBITED.** This is a zero tolerance policy. Any student found to be using his or her computer/tablet for non-class related activities (email, Facebook, browsing, texting, etc) during class will be withdrawn from the course.

REQUIRED READING: There will be readings and information sources posted on eLC in the form of pdfs and links to the internet. Problems with accessing internet-based reading should be brought immediately to the attention of the TAs and Dr. Moore.

Accessing these materials requires that you use your UGA MyID. This password protection allows us to post copyrighted material as a learning tool for you. Because it may be copyrighted, **you should never copy or distribute, beyond these web pages, any material that you access here.** This includes creating links to this site that can be accessed by the public or keeping or distributing copies of the materials for use other than for the purposes of this course.

ASSIGNMENTS: Quizzes and other assessments will be posted on eLC regularly. It is the student's responsibility to check for these and complete them on a timely basis. This work should be completed on an individual basis (i.e., not as a group effort) and should be done without reference to outside sources of information beyond what is made available.

EXAMINATIONS: The midterm and final exams will be a combination of any or all of the following: multiple choice, fill-in-the-blank, matching, short answer and short essay questions. The final will not be cumulative. Approximately one week prior to exams, study guides will be posted. Because enrollment in the course is more than 100, and great care is taken to grade examinations fairly and consistently, it is not possible to return examinations quickly. Every effort is made to complete grading within two weeks of the examination date, but this cannot always be guaranteed. Students are asked to be patient and respectful of this. Make-up exams are in a written or oral format, at Dr. Moore's discretion. Exams will be graded on a 100 point scale and weighted equivalently.

"GLOBAL HEALTH – VOICES FROM THE VANGUARD": During the semester, there will be four presentations by eminent scientists on material relevant to this course. Each student will be required to attend at least TWO of these presentations and participate in a roundtable-discussion group one time during the semester to discuss two of the presentations (each student will need to choose the lectures and discussion session to be attended during the first week of class). The lectures/presentations will be held on Tuesday evenings from 5:30 to 6:30 PM in the UGA Chapel on the dates indicated below. Dr. Moore will give reminders for these in class. Discussion dates and times are also given below. Although not required, students are strongly encouraged to attend all lectures if possible.

Students' responsibilities:

1) Sign up for preferred lectures and discussion session (turn in sign-up sheet to Dr. Moore during class or at her office on or before January 9th at 5 PM). Students will be asked for first, second, third and fourth choices and all efforts will be made to satisfy top requests; assignments will be announced/posted on eLC in the evening on January 9th. Please note that because the first lecture is early, assignment to the earlier lectures/discussions will be on a first-come, first-served basis. Capacity in each discussion group is limited, so after assignment, changes will be acceptable ONLY if the student arranges with another student to switch slots and gives at least 48 hour's notice to both Dr. Moore and Payel Sil.

2) Arrive at the Chapel at least 5 minutes before the lecture begins to sign in. (WITHOUT EXCEPTION, students who do not sign in will not be counted as present and will not be allowed to participate in associated discussion meetings.)

3) Read the discussion topics posted on eLC (topics will vary depending on the lectures to be covered) and come prepared to participate in discussion.

Global Diseases: Voices from the Vanguard lecture series: 5:30 – 6:30 PM in the Chapel; 1/13, 2/17, 3/17, 4/7

January 13: Harold Jaffe, MD, MA, Associate Director for Science, Centers for Disease Control and Prevention: "CDC, Hollywood and the early days of AIDS in the U.S."

February 17: Glen Nowak, PhD, Professor and Director of Center for Health & Risk Communication, University of Georgia: "Communication as a Public Health Tool: Difficulties, Realities, Possibilities"

March 17: Sarah J Schlesinger, MD, Associate Professor of Clinical Investigation and Senior Attending Physician, Laboratory of Cellular Physiology and Immunology, The Rockefeller University: title TBA (topic: HIV vaccines and health communication)

April 7: Maryn McKenna, MS, Senior Fellow, Schuster Institute for Investigative Journalism, Brandeis University: title TBA (topic: food-borne diseases)

Round table discussions for Voices from the Vanguard lecture series:

Monday, February 23rd, 1:30 to 3:20, rm N104, Coverdell; compare and contrast discussion of lectures 1 and 2 (15)

Tuesday, February 24th, 2:00 to 3:50, rm N104, Coverdell; compare and contrast discussion of lectures 1 and 2 (15)

Friday, March 20th, 9:05 to 10:55, rm N339, Coverdell; compare and contrast discussion of lectures 1 and 3 (15)

Wednesday, March 25th, 11:15 to 1:05, rm N104, Coverdell; compare and contrast discussion of lectures 1 and 3 (15)

Friday, March 27th, 10:10 to noon, rm S141, Coverdell; compare and contrast discussion of lectures 2 and 3 (15)

Monday (evening), April 6th, 6:50 to 8:40, rm N104, Coverdell, compare and contrast discussion of lectures 2 and 3 (15)

Wednesday, April 8th, 8:00 to 9:50, rm S141, Coverdell; compare and contrast discussion of lectures 2 and 4 (15)

Monday, April 13th, 2:30 to 4:20, rm N339, Coverdell; compare and contrast discussion of lectures 2 and 4 (15)

Thursday, April 16th, 12:30 to 2:20, rm N104, Coverdell; compare and contrast discussion of lectures 3 and 4 (15)

Thursday, April 16th, 3:30 to 5:20, rm N104, Coverdell; compare and contrast discussion of lectures 3 and 4 (15)

GRADING: All assignments/exams and attendance/participation will be graded on a scale of 0 to 100. The final grade will be a letter grade and the plus system will be applied as follows: A = 93-100; A- = 90-92; B+ = 87-89; B = 83-86; B- = 80-82; C+ = 77-79; C = 73-76; C- = 70-72; D = 60-69; F = <60. The final grade will be calculated from all grades, weighted as follows:

- Exams: 30% (15% each)
- Attendance/participation in class (cumulative): 35%
- Completion of online assessments/assignments (on eLC; cumulative): 20%
- "Voices from the Vanguard" attendance and participation in a discussion session: 15%

ACADEMIC HONESTY: As a University Georgia student, you have agreed to abide by the University's academic honesty policy, "A Culture of Honesty," and the Student Honor Code. All academic work must meet the standards described in "A Culture of Honesty" found at: <https://ovpi.uga.edu/academic-honesty/academic-honesty-policy>. Lack of knowledge of the academic honest policy is not a reasonable explanation for a violation. Questions related to course assignments and the academic honesty policy should be directed to the instructor.

DATE CLASS #**TOPICS****INTRODUCTION TO THE COURSE**

1/6	1	Course introduction: content, delivery methods, and <i>raison d'être</i>
1/8	2	The big 5: viruses, prions, bacteria, protozoa, and helminths
1/13	3	Group Discussion: The fundamentals of parasite transmission and disease development
1/15	4	Group Discussion: The fundamentals of parasite transmission and disease development

DISEASE AS A DRIVER OF SOCIETAL CHANGE

1/20	5	Evolution of the understanding of parasites and parasitism
1/22	6	Group Discussion: The Black Death and The 1918 Influenza Pandemic
1/27	7	Group Discussion: HIV and modern bioterrorism
1/29	8	Molecular biology and the transformation of understanding of disease
2/3	9	Immunology and the fundamentals of the host/parasite interaction
2/5	10	Group Discussion: Ebola, SARS and huey cocoliztli
2/10	11	Group Discussion cont'd: Ebola, SARS and huey cocoliztli
2/12	12	Group Discussion: Scientific research and ethics – from Hitler to Tuskegee

THE HOST/PARASITE ARMS RACE

2/17	13	Group Discussion: Disease pathogenesis in plague, influenza, HIV, anthrax, ebola
2/19	14	Group Discussion: Antigenic variation in malaria, influenza, trypanosomes and HIV
2/24	15	Vaccines and vaccine development (Rick Tarleton, UGA)
2/26	16	Group Discussion: Challenges of vaccine development

3/3

MID-TERM EXAM (class meetings 1-15)**REACTING TO THE PAST: *London 1854: Cesspits, Cholera and Conflict over the Broad Street Pump***

3/5	17	Introduction to Reacting To The Past (RTTP) games and cholera
3/10		Spring Break
3/12		Spring Break
3/17	18	Cholera RTTP

3/19	19	Cholera RTTP
3/24	20	Cholera RTTP discussion
CHALLENGES OF CONTROL AND PREVENTION OF INFECTIOUS DISEASES		
3/26	21	Modern day disease detectives: CDC's Epidemic Intelligence Service (Emily Lankau, UGA)
3/31	22	Group Discussion: Disease investigations
4/2	23	Group Discussion: Mechanisms and determinants of disease transmission
4/7	24	Zoonotic viruses in bats (Paul Rota, CDC)
4/9	25	Drugs and drug development
4/14	26	Group Discussion: Drugs and mechanisms of parasite resistance
4/16	27	Group Discussion: Drugs versus vaccines
4/21	28	Group Discussion: Disease eradication
4/23	29	Current approaches to handling people, parasites, and plagues (Dan Colley, UGA)
4/30		FINAL EXAM: 12:00 - 3:00 PM (class meetings 16-29)