

I. General Information

Course Times and Locations:

CHEM 150-01 (CRN 21621): MWF 1:00-1:50, ISC 0248

CHEM 150-02 (CRN 24562): MWF 2:00-2:50, ISC 0248

Prerequisites: none (but high school biology and chemistry would be helpful)

Instructor: Dr. Beverly Sher

E-mail address: btsher@wm.edu (please put "Emerging Diseases" in subject line)

Office Hours: Office hours will be on Mondays from 3:30-4:30 PM in my office in ISC-3, room 2283; you may schedule individual appointments at other times by email.

II. Course Description

The emergence of new infectious diseases, such as AIDS and COVID-19, and the resurgence of previously controlled infectious diseases, such as tuberculosis, poses a major challenge to public health. Many different variables affect the human response to these diseases, from factors related to the biology of the individual disease-causing organisms to features of the societies in which they become a threat. An effective response to this phenomenon requires the cooperation of people with expertise in a wide variety of fields. We will examine the biology of some of these diseases, the responses of the societies that they afflict, the roles of the professionals involved in their management, and the measures needed to restrict the impact of new and reemerging infectious diseases in the future.

III. Course Objectives

COLL 150 seminars are an integral part of William & Mary's curriculum. These reading-, writing-, and discussion-intensive courses are designed to help students improve their writing and critical thinking skills, to introduce them to research methods and strategies, and to promote independent learning.

The objectives for this course are the following:

- *To explore a current interdisciplinary problem in depth
- *To explore the scientific process as practiced by working scientists
- *To improve students' writing skills and confidence in those skills
- *To improve students' oral communication skills and confidence in those skills
- *To allow students to explore an area of interest through individual library research

IV. Using the Writing Center

Located on the first floor of Swem Library, the Writing Resources Center serves students, faculty, and staff. Writing consultants (students trained by the Writing Resources Center staff) give individual assistance with writing assignments at any stage of the writing process; their services will be most useful to Emerging Diseases students at the revising stage, though. Consultations are free, but must be scheduled in advance.

V. Texts and Other Readings

The books and movies required for the course, in the order in which we will use them, are:

Spillover: Animal Infections and the Next Human Pandemic, by David Quammen
Missing Microbes: How the Overuse of Antibiotics is Fueling Our Modern Plagues, by Martin Blaser
How to Make a Vaccine: An Essential Guide for COVID-19 and Beyond, by John Rhodes
How to Survive a Plague (movie)
The Invisible Cure: Africa, the West, and the Fight Against AIDS, by Helen Epstein
Health Care Reform: What It Is, Why It's Necessary, How It Works, by Jonathan Gruber

The writing manual for the course is Strunk and White's classic, *The Elements of Style*. If you don't already own a copy, it's time to acquire one.

There will also be reading/ viewing assignments from additional sources; these will be available via the course Blackboard site.

Victoria McMillan's *Writing Papers in the Biological Sciences* is also an exceptionally useful resource for this course. Copies of the fifth and sixth editions of this book are available in Swem Library. If you are planning to declare a major in the life sciences, the latest edition of this book would be an excellent addition to your personal library.

VI. ProMED

Students must subscribe to the ProMED electronic mailing list. To subscribe to ProMED, go to www.promedmail.org, click on the "Subscribe" button at the top of the page, and follow the instructions. Choose the digest form of the list, as this will result in one or two long daily ProMED messages instead of twenty short ones. A paper copy of the first page of the initial welcome message from ProMED will be due in class on Wednesday, February 2.

VII. The News

News relevant to this seminar appears every day. Reasonably reliable news sources include:

- *Reputable national newspapers, including *The New York Times* and *The Washington Post*
- *STAT News (<https://www.statnews.com/>)
- *Kaiser Health News (<https://khn.org/>)
- *NPR's news programs
- *The BBC
- *PBS news and science programs
- *ProMED
- *CIDRAP (<http://www.cidrap.umn.edu/cidrap/index.html>)
- *The news sections of the scientific journals *Science* (<https://www.sciencemag.org/>) and *Nature* (<https://www.nature.com/>); Swem Library subscribes to these journals, so you can read them online.

We will spend the first few minutes of most class periods discussing the news, so if you find something interesting, bring it to class!

VIII. Class Climate, Culture, and the Honor System

Emerging Diseases is a COLL 150 course, designed to give students a chance to explore an academic area of interest through intensive reading, writing, and discussion. Accordingly, most class periods will be spent in discussion of the assigned reading, with frequent opportunities to write. In order for discussions to be productive, all students need to feel comfortable participating. We will create and maintain an atmosphere of mutual respect in which everyone's ideas can be heard.

Collaboration and Feedback

Scientists always seek feedback from their colleagues when preparing papers and oral presentations. I encourage students to collaborate in this way as well: thus, peer feedback will be required at the later stages of many assignments.

Students must work *independently* when:

- *Doing short, informal writing assignments, such as discussion points and article summaries
- *Writing the first versions of the book review and term paper
- *Preparing the initial versions of the outline and slides for the journal club presentation

Students must seek feedback from other students when:

- *Revising and editing later versions of the book review and term paper
- *Giving the practice talk for the journal club presentation

"Feedback" includes helpful comments and constructive criticism; it does NOT include doing the work for someone else. Because William & Mary has an honor system, I feel comfortable encouraging collaboration between students under the rules described above. Please see me if you have any questions about how the Honor System applies to your responsibilities in this course.

Plagiarism

Plagiarism is a serious Honor Code violation. Victoria E. McMillan's *Writing Papers in the Biological Sciences (Sixth Edition)* defines plagiarism as follows:

“*Plagiarism* is the theft of someone else's words, work, or ideas. It includes such acts as (1) turning in a friend's paper (or a paper purchased online) and saying it is yours; (2) using another person's data or ideas without acknowledgement; (3) copying an author's exact words and putting them in your paper without quotation marks; and (4) using wording that is very similar to that of the original source but passing it off as entirely your own, even while acknowledging the source.” (McMillan, p. 23.)

In this course, student work found to contain plagiarized material will be worth zero points, and will guarantee the perpetrator a visit with the Honor Council. If you have questions about plagiarism and how to avoid it, ask me in class, during office hours, or by email: I will be happy to answer them. I will be using Safe Assign, a service that is available through Blackboard, to monitor writing assignments for possible plagiarism.

IX. Course Responsibilities

Preparation for Class Discussions

This is a seminar course, and most class periods will be spent in discussion of the reading assignments. For this reason, students must come to class prepared to discuss the day's assignment. Students must bring a typed list of points to raise and questions to ask (discussion points) to class; these will be collected at the end of each class session and used as a partial basis for the class participation grade. Guidelines for discussion points are posted in the Course Documents section of the Blackboard site. Reading/ viewing assignments will be announced one class period ahead of their due date in the Assignments section of the course Blackboard site.

Please do not try to read ahead: doing this can distort class discussion!

Journal Club

Each student will be responsible for giving an in-class assertion-evidence presentation (see <http://www.assertion-evidence.com/tutorial.html>) of a short research article; articles will be selected by the instructor. Guidelines for this assignment are posted in the Course Documents section of the Blackboard site. A schedule listing the deadlines for each presentation will be posted in the Course Documents portion of the Blackboard site two weeks before the first presentation. Each journal club paper will be posted in the Assignments section of the course Blackboard site two weeks before the paper will be presented in class. Thus, each presenter will have two weeks to work on their presentation.

In the presentation, *the presenting student* will supply essential background information, provide an overview of the article's main points, answer questions, and direct class discussion of the article. Preparation for the presentation will include at least one practice talk to be given beforehand to at least one student who is taking Emerging Diseases this semester. The in-class presentations will be approximately fifteen minutes long, with roughly half of that time spent in questions and discussion; brevity and clarity will be rewarded.

All other students must read the article in advance and prepare a short, typed summary to be turned in on the day of the presentation; the summaries will count towards the class participation grade. In addition, each student will be required to ask a total of five questions in class during journal club presentations over the course of the semester; this will count toward the class participation grade. Each student must also provide peer feedback for at least one other student's practice talk; this will count towards the class participation grade.

Book Review

Students will choose an instructor-approved nonfiction book that is relevant to the emerging diseases problem, read it, and write a book review. A list of books that are already approved for this assignment is in the Course Documents section of the Blackboard site. If you would like to review a book that is not on the list, you must obtain instructor permission by email before 8:30 PM on Tuesday, February 1, 2022, as you must bring the book (or the device on which you have downloaded the e-book) that you plan to review to class on Wednesday, February 2, 2022. Sample book reviews, as well as the guidelines for this assignment, are available in the Course Documents section of the Blackboard site.

Term Paper

Students will choose a topic relevant to the emerging diseases problem, research it, and write a term paper in review article format. Topics must be approved by the instructor. Sample term papers, as well as the guidelines for this assignment, are available in the Course Documents section of the Blackboard site.

Peer Feedback: Writing Partners

Each student will be randomly assigned a writing partner for the book review and the term paper. The comments that the writing partners provide on the first versions of these assignments will count towards the writing partners' class participation grades.

X. General Course Policies

Grading

Course grades will be determined as follows: class participation (discussion points, journal club article summaries, journal club questions, peer feedback) 20%; book review 25%; journal club presentation 10%; term paper 45%. There will be no exams.

There are 500 possible points in this course. If you earn 465 or more points, you'll get an A; from 450 up to 465 points is an A-; from 435 up to 450 points is a B+; from 415 up to 435 points is a B; from 400 up to 415 points is a B-; from 385 up to 400 points is a C+; from 365 up to 385 points is a C; from 350 up to 365 points is a C-; from 335 up to 350 points is a D+; from 315 up to 335 points is a D; and from 300 up to 315 points is a D-. Anything less than 300 points is an F.

For assignments graded on an A-B-C scale, an A+ is 100% of the points; an A is 95% of the points; an A- is 92% of the points; a B+ is 88% of the points; a B is 85% of the points; a B- is 82% of the points; a C+ is 78% of the points; a C is 75% of the points; a C- is 72% of the points; a D+ is 68% of the points; a D is 65% of the points; and a D- is 62% of the points. Assignments receiving an F will receive less than 60% of the points, but the actual number of points will depend on exactly how inadequate the student's work was. Work found to contain plagiarism will be worth zero points.

Note that I do not use the Blackboard Grade Center. Thus, you will need to keep track of your grades yourself.

Deadlines and Late Penalties

1) Discussion points and journal club article summaries will be due in class. Discussion points and article summaries turned in late will be worth zero points: after all, the whole point of preparing discussion points and article summaries is to have them available for use in class discussion.

2) All other course assignments will also be due in class, unless otherwise specified. Late assignments will lose points according to the following rules:

- *Assignments turned in within the first 24 hours after the end of the class period in which they are due will be worth 25% less than their original value.
- *Assignments turned in within the second 24 hours after the end of the class period in which they are due will be worth 50% less than their original value.
- *Assignments turned in within the third 24 hours after the end of the class period in which they are due will be worth 75% less than their original value.
- *Assignments that are turned in more than 72 hours after the end of the class period in which they are due will be worth zero points.

"Technical Difficulties" and Deadlines

To avoid late penalties caused by problems with computers, printers, and other devices:

1) Finish your work early. Murphy's Law governs the behavior of electronic devices such as computers and printers, so you should not be planning to print your work half an hour before class begins: that's asking for trouble. Print it well before it is due!

2) Use good computer hygiene. Save frequently, and save to multiple locations: email your work to yourself, copy it onto a flash drive...

3) If a technological disaster strikes and you cannot print your finished work, email a PDF containing the completed assignment to me *before* class starts so that I will know that it was finished on time: doing so will stop the clock. Work emailed to me after class starts will receive the standard late penalty. Note that I will not print out emailed assignments and grade them: you must still turn in a paper copy in order to receive credit for the assignment even if you have emailed your work to me.

Extensions

Extensions will be given only in consultation with the Dean of Students' Office. If you are having problems that are keeping you from finishing your work on time, the Dean's Office can help you negotiate appropriate remedies with your professors. The Dean's Office is the safety net for all students at William & Mary: don't wait until your problems are insurmountable to talk with the kind people who work there.

Attendance

Because having a good class discussion depends on the participation of all students, your presence in class is essential. Thus, *I will be taking attendance*. Three unexcused absences will lower your course grade by one letter grade (A to B, for example); six unexcused absences will lower your grade by two letter grades; and so on.

*If you will be absent from class because of an official William & Mary obligation (such as an athletic competition), please let me know about this planned absence beforehand. It will be excused.

*Missing class because you are leaving early for a school break, or because you are coming back to campus late after a break, will *not* be excused, so make your travel plans accordingly. If William & Mary is in session, you should be in class.

*Alarm Clock Disease is *not* an acceptable excuse for missing class.

*If you are sick, do not come to class! Instead, email me before class to tell me that you are feeling ill and will be absent. This absence will be excused, and I will praise you for keeping your germs to yourself!

*If an emergency arises and you have no access to email (for example, you're seriously ill and have been hospitalized), get in touch with me as soon as you can, and we'll work things out afterwards.

Important note: Discussion points, article summaries, and worksheets that were due on a day when a student had an *unexcused* absence will not be accepted for a grade.

Late Arrivals

If you arrive more than five minutes after class starts, it will count as half an unexcused absence. Thus, six late arrivals will lower your course grade by a full GPA point. Participation in an athletic training program will not be accepted as an excuse for arriving late: your coaches and trainers need to respect your academic schedule.

XI. COVID-19 Policies

*In class, all students must wear well-fitting masks that cover their noses and mouths, both for their own protection and to protect the people around them. Masks with vents or valves are not acceptable in Emerging Diseases. The CDC website has useful guidance for selecting masks and enhancing their fit (for example, by wearing a cloth mask over a surgical mask). See <https://www.cdc.gov/coronavirus/2019-ncov/prevent-getting-sick/types-of-masks.html> for details.

*There will be no eating or drinking in class. If you have an official accommodation that requires access to food or drink in class, please see me to discuss your options.

*All COVID-19-related absences, including those required for isolation or quarantine, will be excused. The CDC website has a list of COVID-19 symptoms- see <https://www.cdc.gov/coronavirus/2019-ncov/symptoms-testing/symptoms.html> for the details.

*If I get sick, or if a large enough fraction of the students in the class will be absent on a given day due to COVID-19-related problems, we will move class discussions to Zoom until conditions improve. If I decide to move class discussion to Zoom, I will announce the change and send a Zoom link to the class by email, so keep an eye on your inbox!

*As there are no exams in Emerging Diseases, I will not be recording class sessions or posting notes from class discussions. If I go over a handout in class, though, I will post a copy of the handout to the Course Documents section of our Blackboard site.

XII. Spring 2022 Course Calendar

Deadlines are underlined. This calendar is subject to revision! Short writing assignments, such as discussion points, are not listed. Non-class days on which assignments are due are indicated in parentheses.

Date	Discussion Topic/ Assignment Due	Journal Club#
Wednesday, January 26	Introduction	
Friday, January 28	Ebola in West Africa	
Monday, January 31	Quammen I	
Wednesday, February 2	Quammen II <u>Page 1 of the ProMED welcome message due today</u> <u>Book review topic due today: bring your book to class!</u>	
Friday, February 4	Quammen III <u>(last day to add or drop a course)</u>	
Monday, February 7	Quammen IV	
Wednesday, February 9	Quammen V	
Friday, February 11	Quammen VI	1
Monday, February 14	Quammen VII	2
Wednesday, February 16	Writing Workshop <u>First version of book review due in class today</u>	
Friday, February 18	Superbugs	
Monday, February 21	Blaser I	
Wednesday, February 23	Blaser II <u>Term paper topic email due at 6:00 AM</u>	3
Friday, February 25	Intro to Library Research	
Monday, February 28	Blaser III <u>Term paper topic worksheet due today</u> <u>Peer comments on book review due</u>	4
(Tuesday, March 1)	<u>(Revising/editing worksheet due at noon in ISC 2283)</u>	
Wednesday, March 2	Blaser IV	5
Friday, March 4	Blaser V	6
Monday, March 7	Immunology I	7
Wednesday, March 9	Immunology II	
Friday, March 11	Immunology III <u>Final version of book review due in class.</u>	

Spring Break: Saturday, March 12- Sunday, March 20

<u>Date</u>	<u>Discussion Topic/ Assignment Due</u>	<u>Journal Club #</u>
Monday, March 21	Quammen VIII	
Wednesday, March 23	AIDS in America I	
Friday, March 25	AIDS in America II: <i>How to Survive a Plague</i>	8
Monday, March 28	AIDS in Africa I	9
	<u>Last day to withdraw from a course</u>	
Wednesday, March 30	AIDS in Africa II	
Friday, April 1	AIDS in Africa III	
	<u>Term paper outline due</u>	
Monday, April 4	AIDS in Africa IV	
Wednesday, April 6	AIDS in Russia	
Friday, April 8	AIDS in America III	10
Monday, April 11	AIDS in America IV	11
Wednesday, April 13	U.S. Health Care I	
Friday, April 15	Writing Workshop	
	<u>First version of term paper due</u>	
Monday, April 18	U.S. Health Care II	
Wednesday, April 20	U.S. Health Care III	
Friday, April 22	U.S. Health Care IV	12
Monday, April 25	Pandemic I	13
	<u>Peer comments on term paper due</u>	
(Tuesday, April 26	<u>(Revising/editing worksheet due at noon in Dr. Sher's office)</u>	
Wednesday, April 27	Pandemic II	14
Friday, April 29	Pandemic III	15
Monday, May 2	It All Depends...	16
Wednesday, May 4	Searching for Solutions	
Friday, May 6	Term Paper Discussion	
	<u>Final version of term paper due in class</u>	

Choosing a Term Paper Topic

Choosing a good term paper topic takes time. Plan to:

- 1) Spend time brainstorming; use news sources, ProMED posts, and your discussion points on the readings to come up with a short list of topics that interest you.
- 2) Discuss possible topics with Dr. Sher, either by e-mail, during office hours, or before/after class. You must have your topic approved by Dr. Sher *before* you submit the term paper topic worksheet. An email describing your provisional topic will be due by 6:00 AM on Wednesday, February 23; she will be happy to talk with you about topic possibilities before then!
- 3) Read the sample term papers available in the Course Documents section of the Blackboard site to learn what a good term paper looks like.
- 4) Do preliminary literature searches to see if the topics you have found can be covered effectively in twelve to fifteen pages of text.

A good term paper topic will have the following characteristics:

- 1) The topic should be *current*: a disease that has become more prevalent in the last few years, a recent change in medical practice or social factors that could affect the likelihood of disease emergence and control, new technology that is relevant to control or prevention of emerging diseases...

Most of the references for your term paper should have been published in the last five years.

- 2) The topic should be *focused*: be sure that you can discuss details rather than generalizations. The topic of HIV, for example, is much too broad; focusing on strategies used to reduce the spread of HIV in a single risk group in a single country or on a new class of drugs to treat HIV would be better.
- 3) The topic should be *understandable*. Be sure that the references you find when you do your initial search for key sources are reasonably easy for you to understand. If all of your references appear to require a deep understanding of biochemistry and you are planning to be an English major, you should choose a less scientifically demanding topic. Many Emerging Diseases students have written excellent term papers on non-scientific topics.
- 4) The topic should be *interesting* to you. By the end of the semester, you will have spent a great deal of time with your topic. If it started out seeming boring but appropriate, you will hate it by the time the paper is finished...

Some topics that will not be approved this semester:

- 1) Biological weapons agents: variola virus, *Bacillus anthracis*...
- 2) Historical topics (for example, the history of smallpox, the history of influenza, the history of plague in the Middle Ages): the term paper must describe a *current* topic
- 3) The topics covered by the sample term papers on our Blackboard site