

# **Biology 402: Infectious Disease and Global Public Health**

**Spring Semester 2020**

**Tues, Thurs 2-3:15 pm Genome Science Bldg 1374**

(the syllabus **will** be updated as the semester proceeds  
so check back occasionally)

**Make sure to look for dates when we will discuss book readings and research papers!** Reading assignments are from diverse online sources, from *Mountains Beyond Mountains* by Tracy Kidder and from assigned primary research papers--links for these will be found below or on the lecture notes page. Course policies are on the non-Sakai course website.

**READINGS NEED TO BE COMPLETED **BEFORE** THE LECTURE TO WHICH THEY ARE ASSIGNED**

## **Date and Lecture:**

**Jan 9 An introduction to Global Public Health (MP)**

<http://www.youtube.com/watch?v=xJpZnUjtorI>

<http://www.nature.com/news/spread-of-antibiotic-resistance-gene-does-not-spell-bacterial-apocalypse-yet-1.19037>

**Jan 14 A Brief History of Haiti (MP)**

[http://en.wikipedia.org/wiki/History\\_of\\_Haiti](http://en.wikipedia.org/wiki/History_of_Haiti) <http://www.lrb.co.uk/v26/n08/paul-farmer/who-removed-aristide>

**Jan 16 Introduction to Tuberculosis/First Book Discussion (MP)** *Mountains Beyond Mountains*, Part I pp. 1-44

<http://www.cdc.gov/tb/topic/basics/default.htm>

[http://en.wikipedia.org/wiki/History\\_of\\_tuberculosis](http://en.wikipedia.org/wiki/History_of_tuberculosis)

<http://www.who.int/features/factfiles/tuberculosis/en/index.html> (10 facts about TB)

**Jan 21 The TB bug (MP)**

<http://www.mayoclinic.org/diseases-conditions/tuberculosis/basics/definition/con-20021761>

(read all the sections on this mayo site on TB)

<http://www.nature.com/ng/journal/v45/n10/full/ng.2744.html>

**Jan 23 TB treatment, Part 1/First Paper Discussion (MP)**

<http://en.wikipedia.org/wiki/Rifampicin>

**Jan 28 TB treatment, Part 2 (MP)**

[Molecular biology: Antibiotic re-frames decoding](#) (download and read PDF)

**Jan 30 Conjugative DNA transfer and antibiotic resistance (MP)**

<http://www.sciencedirect.com/science/article/pii/S009286740700311X>

**Feb 4 Exam 1 (Material through Jan 30)**

**Feb 6 HIV and AIDS/Second Book Discussion (BD)**

Mountains Beyond Mountains pp. 45-95

<http://www.ncbi.nlm.nih.gov/pmc/articles/PMC2753265/>

**Feb 11 HIV and AIDS continued (BD)**

Mountains Beyond Mountains pp. 96-134

[http://www.thelancet.com/journals/laninf/article/PIIS1473-3099\(10\)70186-9/fulltext](http://www.thelancet.com/journals/laninf/article/PIIS1473-3099(10)70186-9/fulltext)

[http://en.wikipedia.org/wiki/History\\_of\\_HIV/AIDS](http://en.wikipedia.org/wiki/History_of_HIV/AIDS)

**Feb 13 An introduction to retroviruses (BD)**

<http://www.youtube.com/watch?v=RO8MP3wMvqg>

<http://www.ncbi.nlm.nih.gov/pubmed/?term=22728444>

**Feb 18 Scientific paper discussion (BD)**

<https://www.pnas.org/content/early/2019/12/11/1914183116.long>

**Feb 20 Developing antiretroviral drugs Part 1 (BD)**

<http://www.ncbi.nlm.nih.gov/pubmed/23025913>

**Feb 25 Developing antiretroviral drugs II (BD)**

<http://www.ncbi.nlm.nih.gov/pubmed/22980926>

**Feb 27 The economics of treating HIV world-wide and Access to Essential Drugs as part of the fulfillment of the Right to Health (MP)**

**March 3 Exam 2 (Material Feb 6 through Feb 27)**

**March 5 Human Rights continued (MP)**

[Essential Drugs List](#)

[http://humanrights.wikia.com/wiki/First\\_Generation\\_Human\\_Rights](http://humanrights.wikia.com/wiki/First_Generation_Human_Rights)

[http://humanrights.wikia.com/wiki/Second\\_Generation\\_of\\_Human\\_Rights](http://humanrights.wikia.com/wiki/Second_Generation_of_Human_Rights)

**March 7-15 Spring Break**

**March 17 1<sup>st</sup> set of student posters**

**March 19 Student posters continued**

**March 24 How HIV evades the immune response (BD)**

<https://www.sciencedirect.com/science/article/pii/S0140673600049047?via%3Dihub>

<https://insights.ovid.com/pubmed?pmid=23786957>

**March 26 In class paper discussion (MP)**

**March 31 Student posters continued**

**April 2 How HIV evades the immune response continued (BD)**

**April 7 Promise and Challenges of an HIV Vaccine (BD)**

<https://science.sciencemag.org/content/345/6193/166.long>

<https://science.sciencemag.org/content/345/6193/169.long>

<https://science.sciencemag.org/content/345/6193/167.long>

**April 9 Student posters continued**

**April 14 Final Student posters**

**April 16, 21, 23 TBA**

**Final Monday May 7 Noon = Exam 3  
(Covers ALL material after Exam 2)**